

**MINISTRY OF HEALTH, LABOUR AND SOCIAL  
PROTECTION OF THE REPUBLIC OF MOLDOVA**

***Nicolae Testemitanu* State University of Medicine  
and Pharmacy of the Republic of Moldova**

**Association of Medical Students and Residents**

# **Abstract Book**

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for Students and Young Doctors**

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**Chisinau**

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## MESSAGE OF THE RECTOR

At *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova we always encourage youth in their initiatives. It is our



responsibility to inspire them to create, to develop and surpass their own limits. *MedEspera* International Congress for Students and Young Doctors serves as proof of our commitment in this regard. The Association of Students and Residents in Medicine organizes it bi-annually. We appreciate them for their inexhaustible force and idealistic desire to execute at this level.

This year, *Nicolae Testemitanu* SUMPh will host the 7<sup>th</sup> edition of the Congress. We hope this will be a great opportunity for students and young doctors to exchange ideas and research experience. The number of foreign *MedEspera* participants highlights the fact that medicine has no boundaries. We hope this year won't be an exception and our foreign colleagues will attend this event and will be fully satisfied with the obtained results and experience.

We wish you all good luck! Don't forget to follow your dreams and work hard to achieve your goals. Take full advantage of this event and feel free to share your experience and learn something new from your colleagues.

I wholeheartedly hope your impressions of Moldova and *Nicolae Testemitanu* SUMPh will be unforgettable!

A handwritten signature in blue ink, appearing to read 'Ion Ababii'.

*Rector Ion Ababii*  
*MD, PhD, Professor*

## **WELCOME MESSAGE OF THE ORGANIZING COMMITTEE**

Dear colleagues and friends,

We have the honor and pleasure to welcome you to *MedEspera* International Congress for Students and Young Doctors. Welcome to *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova! Beside the new experience, this 7<sup>th</sup> edition of *MedEspera* will bring you the most recent achievements in the fields of medicine, dentistry, pharmacy and public health. We hope you will enjoy the program we've prepared, which includes conferences, workshops, discussions as well as a social program to familiarize you with the hospitality of our country and the beauty of our traditions.

The idea of organizing this Congress sparked among a group of our senior colleagues several years ago. Since the very 1<sup>st</sup> edition, *MedEspera* became popular among medical students and young doctors from the Republic of Moldova and abroad.

It is our duty to uphold the reputation, popularity and quality of this event. We are fully committed to make everything in our power to continuously increase the quality of this event, and we sincerely wish for you to make the best of it!

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## ABSTRACTS

### CLINICAL CASES

#### DEPARTMENT OF SURGERY AND SEMIOLOGY no.3

##### 1. PRIMARY HYDATID CYST OF SKELETAL MUSCLE: A CASE REPORT

Authors: **Gutu Serghei, Predenciuc Alexandru**

Scientific adviser: Popa Gheorghe, Associate professor, Department of General Surgery and Semiology no.3

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**Background.** Hydatid cyst, also called hydatidosis, is caused by *Echinococcus granulosus*. It is still a major health problem in many parts of the world with 2-3 million cases confirmed each year. Most of these cases involve liver (50-70%) and lungs (20-30%), but some of them have rare locations, such as skeletal muscles (0.7-5%). The absence of specific clinical signs and symptoms makes it difficult to establish a diagnosis, while first signs may appear as neurovascular lesions due to compression. The most useful method of diagnosis is ultrasound with high sensitivity (93-98%), followed by CT and MRI. There are two types of treatment: open surgery and percutaneous drainage, both associated with Albendazole and Mebendazole or Albendazole and Praziquantel administration.

**Case report.** A 33-year-old patient was admitted to Department of general surgery with a lump on the inner proximal part of the right thigh that patient discovered six month ago, which interfered with the patients daily activities. The patient underwent ultrasound exam of the lump and internal abdominal organs, plain chest X-ray, lump puncture for bacteriological test and general blood and urine analysis. All results came normal and with no imagistic findings, except a multicystic lesion separated by septae that can be attributed to Gharbi type III hydatid cyst. The patient underwent surgical treatment with no early postoperative complications and received chemotherapy with Albendazole and Mebendazol.

**Conclusions.** Hydatid cyst should be included in the differential diagnosis of a patient with slow growing subcutaneous masses. Imaging data are required when cystic mass are suspected. Surgical treatment associated with chemotherapy must always be a first priority for better results with minimal recurrence.

**Key words:** hydatid cyst, ultrasound, differential diagnosis.

#### DEPARTMENT OF INTERNAL MEDICINE, CARDIOLOGY

##### 2. LEFT ATRIAL MASS IN A PATIENT WITH MITRAL STENOSIS AND ATRIAL FIBRILLATION-THROMBUS OR MYXOMA?

Author: **Timbur Natalia**

Scientific advisers: Tasnic Mihail, Batrinac Aureliu, MD, PhD, Associate professor  
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**Background.** The discovery of a large left atrial mass through echocardiography obliges the clinician to perform a differential diagnosis to distinguish tumor from thrombus. In fact, magnetic resonance imagery could be useful to identify the mass but it could not distinguish tumor from organized thrombus. Certainly, surgery is the best solution for a successful diagnosis.

**Case report.** The 67-year-old woman was admitted to cardiology department with dyspnea, orthopnea, palpitations, and fatigue. Anamnesis: 10 years of atrial fibrillation and type 2 diabetes and 15 years with arterial hypertension. By the time of addressing, the patient has been administering anticoagulants for several months with warfarin while maintaining INR-2. Physical examination revealed an irregular pulse, at a rate of 110 beats/min. The electrocardiogram revealed an atrial fibrillation with rate 150-100 b/min. The chest X-ray - pulmonary congestion. TTE - revealed a severe mitral stenosis (GPmax – 33 mm/hg, area - 0,6 cm<sup>2</sup>) with third degree mitral regurgitation and left atrial mass (50\*36 mm), third-degree tricuspid regurgitation. Left atrium was enlarged (67\*84 mm), severe pulmonary arterial hypertension. These findings were confirmed by TEE. The preoperative coronarography showed neovascularization among the mass and huge fistula from the circumflex artery in the tumour mass and left atrium. We strongly suspected a vascular tumor, especially myxoma. Preoperative decision was made to perform cardiac MRI - “hook”- shaped mass formation, fixed to the upper rear wall of the LA, 7 cm long, massive thrombus. Cardio-surgical intervention was performed: MV prosthesis MDT “Hancock-II ultra” N29, complex plastic repair of TrV, removing the massive thrombus from the LA. After surgery, the patient had uncomplicated recovery.

**Conclusions.** Atrial mass management will be based on clinical history (mitral stenosis, permanent atrial fibrillation) and echocardiographic data. If atrial mass persists during treatment with anticoagulants, cardiac MRI and coronarography are useful for diagnosis. However, the final diagnosis is established during cardiac surgery.

**Key words:** atrial fibrillation, atrial mass, MRI, coronarography, surgery

### **3. SITUS INVERSUS WITH DEXTROCARDIA AND AORTIC VALVE REGURGITATION: A CASE REPORT**

Authors: **Victoria Vatamanu-Paiu, Darciuc Radu**

Scientific adviser: **Batrinac Aureliu**, MD, PhD, Associate professor

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**Background.** Dextrocardia with situs inversus is a rare congenital condition with less than 1 person in 10 000, in which the internal organs are mirrored inside the human body. The majority of the patients with dextrocardia and situs inversus are phenotypically normal and have a normal life without any complications related to their congenital condition. About 5-10% of these patients develop another congenital defects. There are only few published cases of the patients with situs inversus with dextrocardia associated with aortic valve regurgitation.

**Case report.** The 33 years old male with dextrocardia and situs inversus diagnosed in the childhood was consulted during routine medical examination. Chest radiography showed dextrocardia and situs inversus. The electrocardiogram showed sinus rhythm with right axis deviation and reverse R-wave progression in the precordial leads. He was examined by transthoracic echocardiography and third degree aortic regurgitation was found, moderate dilatation of the sinus of Valsalva – 43 mm, and no dilatation of the ascending aorta – 35 mm. There were no data for aortic dissection. The ejection fraction of the left ventricle was 55%. Computer tomography (CT) showed reversed positioning of mediastinal and abdominal organs – complete situs inversus and dextrocardia. On CT there were no signs of stenosis or dissections of the thoracic and abdominal aorta. The patient was referred to cardiac surgery for correction of valvular pathology. A complex aortic valve repair was performed. Postoperative period was without complications. On control echocardiography after one month there was no important aortic regurgitation.

**Conclusions.** Dextrocardia with situs inversus and aortic valve regurgitation is a very rare cardiac pathology. If cardiac surgery is necessary it can be challenging but feasible with good results.

**Key words:** dextrocardia, situs inversus, aortic regurgitation, CT, cardiac surgery

#### 4. CEREBRAL COMPLICATIONS OF ATRIAL FIBRILLATION

Author: **Victoria Panfil**

Scientific adviser: Angela Tcaciuc, MD, PhD, Associate professor, Department of Cardiology Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

**Background.** Atrial fibrillation is one of the great problems that cardiologists around the world are trying to solve, according to the World Heart Federation (WHF) between 1990 and 2013. The total number of diagnosed AF cases has increased globally from less than 7 million to over 11 million, and this number continues to grow. The prevalence of AF varies between 0.5% and 1% in the general population and increases in relation to age, exceeding 6% among subjects over 80 years old. The incidence of AF is between 0.21 and 0.41 per 1 000 persons/year. It is estimated that by 2030, 14 - 17 million patients in the European Union will suffer from AF, plus 120 000 - 215 000 newly diagnosed patients per year. Taking into account the upper mentioned data, we decided to examine atrial fibrillation complications, evaluate anticoagulant treatment and maintenance of therapeutic INR importance in patients with AF, as well as the value of kinetotherapy in patients with stroke.

**Case report.** We will present a clinical case, about a 65 years old female, who has been suffering from AF for 5 years and who maintained INR (between 2 – 3) within the normal limits. She had interrupted the administration of the anticoagulant treatment, prior to a mini-invasive intervention, and as a result, the value of the INR has decreased < 1.1 in 4 days. The patient underwent a cardioembolic stroke. We examined this patient, clinically and paraclinically. She was examined before and after stroke, the following instrumental examinations being performed: electrocardiogram, echocardiography, doppler of carotid arteries, and cerebral Computed Tomography before and post fibrinolysis. We used CHA<sub>2</sub>DS<sub>2</sub>-VASc scores for AF stroke risk (that was at that moment 4 points from 9), HAS-BLED scores for bleeding risk assessment (that was at that moment 4 points from 9), and MMSE (Mini-Mental state Examination), for mental status examination, that at the moment of stroke was 5 out of 30 points. Now the patient's MMSE scores is 27 points because at the moment of the stroke the correct and fast measures were taken the right pharmaceutical and kinetotherapeutical treatment were administered.

**Conclusions.** The risk of cardioembolic stroke to the patient with AF is very high and depends on age and the presence of other comorbidities. Anticoagulant treatment in AF patients is paramount, cessation of anticoagulant treatment leads to serious complications such as stroke. Fibrinolytic therapy in stroke patients that is included in the therapeutic window significantly reduces post-thromboembolic sequelae. Kinetotherapy has to be performed and individualized as early as possible, which will allow the patient to recover spectacularly.

**Key words:** atrial fibrillation, stroke, anticoagulant treatment

#### 5. TREATMENT FOR VENTRICULAR TACHYCARDIA IN THE ABSENCE OF STRUCTURAL HEART DISEASE.

Authors: **Radu Darcic<sup>1</sup>, Daniela Ivanov<sup>1</sup>, Eraslan Hakan<sup>2</sup>, Diker Erdem<sup>2</sup>**

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**Background.** According to the recent data in up to 10% of the patients with ventricular tachycardia (VT) there is an absence of structural heart disease. Several types of VT could be present in such patients: right ventricular outflow tract (RVO T) VT, catecholaminergic polymorphic VT, idiopathic left VT, Brugada syndrome, long QT syndrome. According to the VT type the management can be pharmacological therapy, radio-frequency ablation, implantation of cardioverter defibrillator or a combination of them. The decision about the management is based on the type of VT, data obtained from echocardiography, magnetic resonance imaging (MRI) and electrophysiological study (EPS).

**Case report.** We present a case of a 48 years old female who had frequent attacks of palpitations with presyncope. On Holter ECG monitoring there were 32066 premature ventricular complexes (PVCs) and 493 non-sustained episodes of VT during 24 hours with left bundle branch block morphology, inferior axis and transition zone in V4. The patient could not receive amiodarone because of an allergic reaction. Treatment with beta-blockers, verapamil and propafenone was tried but with no sufficient improvement. On echocardiography and MRI she had no structural heart disease. We suspected RVOT VT and evaluated the patient during EPS, where RVOT VT was induced. The earliest activation point was found to be in postero-septal RVOT area and several applications of radio-frequency energy were performed. Immediately after ablation there were no more PVCs, with solitary PVCs in next days. She continued the medical treatment with bisoprolol 5mg/day and propafenone 300 mg/day. We evaluated the patient after one month on Holter ECG. There was a decrease of PVCs number to 4123, but were 137 non-sustained paroxysms of VT during 24 hours. We decided to repeat the ablation. On basal ECG during second EPS there were no PVCs, but they appeared after dobutamine infusion. Radio-frequency energy was applied in postero-septal RVOT area with disappearance of PVCs. The patient continued the treatment with metoprolol 100mg/day. On Holter ECG monitoring after one month there were 5195 PVCs during 48 hours and no more paroxysms of VT. We recommended to continue the treatment with metoprolol 100mg/day only.

**Conclusions.** Electrophysiological study is an important tool in evaluating ventricular tachycardia and radio-frequency ablation is a therapy of choice in selected patients.

**Key words:** ventricular tachycardia, structural disease.

## 6. A CASE OF CHAGAS CARDIOMYOPATHY IN REPUBLIC OF MOLDOVA

Authors. **Mihail Tasnic, Eraslan Hakan**

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**Background.** Chagas disease (CD) (American trypanosomiasis) is generated by the protozoan parasite *Trypanosoma cruzi* (T.cruzi) and transmitted by the reduviid bug in Latin America. Approximately 8-12 million people are infected with T.cruzi in Central and South America. Estimates of the number of annual deaths are around 50,000, 60% being related to sudden cardiac death. Overall, 4.2% of Latin American individuals living in European countries are chronically infected with T.cruzi.

**Case report.** We present the case of a young man of 29 years old, professional football player originating from Brazil. The patient was admitted for establishing the cause of the patient syncope developed during physical activity. The past medical history was without particularities. We evaluated the patient by basic ECG, echocardiography, and effort test – all without abnormalities. Holter ECG monitoring revealed multiple episodes of unsustained ventricular tachycardia and several episodes of complete atrioventricular block – maximal pause 3.5 sec. We have also found frequent polymorphic ventricular extrasystole, disappearing during physical

effort. Biochemical panel was without abnormalities. Heart MRI showed multiple regions of myocardial infiltration, and cardiosclerosis. The heart MRI image was typical for Chagas cardiomyopathy, considering the patient origin. Because of the absence of experience with CD in Republic of Moldova, we have sent the patient for serological evaluation in European cardiac centers. Given the concomitant episodes of complete atrioventricular block, we couldn't prescribe any antiarrhythmic drug for the ventricular tachycardia. The patient was recommended to avoid any physical activity. For arrhythmia control we indicated implantation of device with pacemaker and ICD functions. Serological diagnosis of CD was thereafter confirmed. Patient got recommendation to return in Brazil to the national center for Chagas disease, because of their huge experience. In Brazil, during physical effort – playing football, patient suffered syncope and died, probably because of malignant ventricular arrhythmia.

**Conclusions.** Heart diseases caused by different germs, atypical for Republic of Moldova or this part of the Europe, should be taken in consideration in all causes of unexplained heart functional or morphological abnormalities, especially in patients who are coming from other geographical regions or travelling abroad.

**Key words:** Chagas disease, cardiomyopathy

## 7. PARTICULARITIES OF ACUTE MYOCARDIAL INFARCTION APPROACH IN A PATIENT WITH CORONARY ARTERIES ANOMALY

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**Background.** Acute myocardial infarction among the young population is rare and presents diagnostic and approach difficulties that lead to treatment delay in emergency cases and worse outcome for patients. This case focuses on a young man who developed an inferior myocardial infarction as a result of embolization of the left coronary artery system associated with the right coronary anomaly.

**Case report.** A 25 year old man presented in the emergency room with a 4 hours history of severe retrosternal crushing pain, radiating down his left arm and associated with sweating, nausea, and breathlessness. He had never previously experienced chest pain at rest or on exertion. He was a smoker. The last 2 weeks have been really stressful so the patient smoked more than usual. He didn't have a family history of ischaemic heart disease or sudden cardiac death. At first examination he was pale and sweaty with a tachycardia of 110 beats/min. His blood pressure was 140/100 mm Hg. Transthoracic echocardiography revealed hypokinesia of the inferior wall. A coronary angiogram showed the absence of right coronary ostium (ostial trombosis?) and filling of the right coronary artery through collateral vessels from the left coronary system; LAD and OM I distal thrombosis. No right coronary ostium was observed in the aortogram. None of the coronary arteries showed any sign of atherosclerosis. We performed thrombolysis (Actilyse) with clinical and ECG improvement. After 72 hours angiography - LAD and OM I successful total trombolysis, couldn't find RCA origin - suspicion of anomalous origin of the right coronary artery. The patient was discharged on the 5th day of hospitalization in good condition. Recommended: hereditary screening thrombophilia panel and Coronary CT Angiography (CTA). CTA showed - Anomalous Right Coronary Artery From the Left Coronary Sinus With an Interarterial Course, as well as right coronary artery ostial and proximal hypoplasia, and a fistule LAD pulmonary artery RCA.

**Conclusions.**

1. Congenital ostial coronary artery atresia/hypoplasia should be a part of the differential diagnosis particularly in young patients presenting with a totally occluded coronary artery and no cardiovascular risk factors.
2. Thrombolysis can be a good choice for treatment of STEMI if primary PCI has failed.
3. Patients with suspicion of anomalous coronary arteries should perform CT angiography (CTA) to confirm originated sites, anatomic route and whether complicated with other congenital malformation.

**Key words:** myocardial infarction, coronary anomaly

## 8. SWITCHING THE LITTLE KIDS LIVES ON

Authors. **Gratiana-Andreea Lates, Roberta Anghelleanu, Anamaria-Romina Jugariu, Tímea Katona, Razvan-Gabriel Budeanu**

Scientific advisers: Valentin-Ionut Stroe, MD, PhD; Horatiu Suciuc, MD, PhD, Professor  
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**Background.** Cormatrix is an innovation in bioengineering, introduced in the medical world in 2013. The material is based on the extracellular matrix derived from the porcine intestine submucosa, allowing for tissue restructure and growth in the "site" where it is used. The composition consists of collagen, glycosaminoglycans, glycoproteins, proteoglycans and growth factors VEGF, FGF. The superior characteristics are given by acellularity, resistance to infection, anti-inflammatory effect and immunomodulator, the most important element being the reactivity depending on the impulse from the tissue where it is involved.

**Case report.** At the Institute of Cardiovascular and Transplant Diseases in Targu Mures, Cormatrix has been in used since 2013 and has been useful as a biocompatible tissue in arterial switch procedures of transposition of great vessels. A 12 days old patient diagnosed with transposition of great vessels was received by Institute of Cardiovasculare and Transplant Diseases from Targu Mures for a arterial switch surgery. The surgery implies total cardiopulmonary by-pass and at 26 Celsius degrees in the operating theater the great vessels are cut from their emerging. The coronary arteries are excised from the future pulmonary artery and reimplanted in neo-aortic wall; the resulting parietal defect after the coronary arteries excision is repaired with a Cormatrix patch plasty. Literature showed that in 30% of cases where pericardial patch was used it led to a pulmonary supra-avalvular stenosis. The post-surgery echographics at 3 months, 6 months and 1 years where Cormatrix was used showed no change in circulatory flow in the pulmonary cormatrix patch segment.

**Conclusions.** In conclusion Cormatrix patch seems to have better results in reconstruction of the pulmonary artery wall defects in transposition of great vessels surgery because it has a high level of biocompatibility and a better reintegration in the vessel tissues .

**Key words:** cormatrix, bioengineering

## 9. SLEEP APNEA SYNDROME AS A CAUSE OF SEVERE PULMONARY HYPERTENSION

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**Background.** Sleep apnea is a disorder characterized by pauses in breathing or periods of shallow breathing during sleep. There are three forms of sleep apnea: obstructive (OSA), central

(CSA), and a combination of the two called mixed. OSA affects 1 to 6% of adults and 2% of children, but CSA affects less than 1% of people.

**Case report.** Patient X, 58 years old, of female, was admitted at the Institute of Cardiology with mixed (inspiratory and expiratory) dyspnea at minimal effort, ankle swelling, general weakness, dizziness. The patient suffers from arterial hypertension during 14-year with maximum levels 180/90 mmHg, working blood pressure being - 130/80 mmHg. At home regular treatment with tab. Bisoprolol 2.5 mg in the morning, tab. Aspirin 75 mg/day, tab. Losartan 50 mg in the evening, tab. Torasemidi 10 mg in the morning, over a day. The general condition worsened the last month when signs of congestive heart failure progressed. The echocardiographical examination revealed severe cardiomegaly (LA - 50 mm, LV - 60 mm, RA - 51 mm, RV - 40 mm), preserved left ventricular function (EF - 58%), reduced right ventricular function (TAPSE - 16 mm), severe pulmonary hypertension (PASP - 140 mmHg). To determine the cause of the pulmonary hypertension, a number of investigations were performed. Pulmonary artery angiography by computed tomography revealed pulmonary artery enlargement (40 mm) and dilated intrapulmonary arteries, but no data on thrombosis. Spirography has revealed severe changes in the function of external respiratory organs, being restrictive. Laboratory analyzes excluded the systemic sclerodermia (ANA-negative, Anti Scl-70 antibodies – 1.5 U/ml, Anti Centromer B antibodies – 0.3 U/ml) and normal values of D-dimers (0.24 ng/ml) excluded the presence of venous thrombosis. To exclude the presence of Sleep Apnea Syndrome, cardio-respiratory polygraphy was performed. A severe form of Sleep Apnea-Hypopnea Syndrome was recorded, with the Apnea-Hypopnea Index (AHI) – 84.3/hour, with severe intermittent and continue nocturnal hypoxemia in close correlation with respiratory events, having a Desaturation Index (DI) – 82 6/hour. Average SaO<sub>2</sub> – 69.6%, SaO<sub>2</sub> minimum – 42%, SaO<sub>2</sub> <90% = 07 hours 50 min 48 sec.

**Conclusions.** After 10 days of complex treatment with diuretics, direct and indirect anticoagulants, nitrates, angiotensin II receptor blockers, beta-adrenoblockers, continuous oxygen therapy, and CPAP + Oxygen therapy, the general condition improved: the mixed dyspnoea at minimal effort was reduced, general weakness, dizziness disappeared as well as the ankle swelling, and pulmonary artery systolic pressure decreased from 140 mmHg to 100 mmHg.

**Key words:** sleep apnea-hypopnea syndrome, pulmonary hypertension

## DEPARTMENT OF SURGERY no.1 *NICOLAE ANESTIADI*

### 10. CHOLEDOCHOLITHIASIS – DIAGNOSTIC AND TREATMENT OPPORTUNITIES

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**Background.** Cholecolithiasis is a late complication in the evolution of biliary lithiasis. More frequently, the main bile duct approach is performed by new miniinvasive methods.

**Case report.** A 38 y/o female was diagnosed and treated in SOROKA Medical Center Beersheba in 2016. The patient was afebrile, haemodynamically stable, yet presented jaundice. The abdomen was soft, mildly tender at palpation, with a negative Murphy's sign. Blood tests identified: WBC 4.6 x 10<sup>9</sup>/L, AST 258 IU/L, ALT 352 IU/L, bilirubin 77 umol/L, alkaline phosphatase 258 IU/L. The ultrasound investigation detected a dilated CBD (14 mm) containing two stones. MRCP confirms two ductal stones of 8 and 10 mm, and a dilated duct. ERCP identified two stones of 8 and 10 mm that couldn't be removed, so a stent was placed and a

sphincterotomy was performed. Percutaneous transhepatic cholangiography and cannulation guide wire technique was used, with a modified Burhenne technique. Stones were pushed into the duodenum with Fogarty Balloon, stent inserted. Post interventional radiology revealed that CBD was cleared. Patient made good recovery.

**Conclusions.** Elective methods in the diagnosis of choledocholithiasis are MRCP in colangiographic regime, ERSP and percutaneous transhepatic cholangiography. Modified Burhenne technique can be used in treating choledocholithiasis.

**Key words:** choledocholithiasis, biliary lithiasis, surgery

## 11. TRAUMATIC RECTAL WOUND AND CONSEQUENCES OF DIAGNOSTIC AND MANAGEMENT ERRORS

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**Background.** “Hopkins Medicine” medical journal reports medical error as the third cause of patients’ death. Meanwhile, WHO determined that 23% of European citizens state that they have suffered from a medical error, while 18% say that they still have complications from them. Also, WHO established that one of 20 patients got a nosocomial infection during their hospital admission. Several studies highlighted a rate of 15% to 30% of rectal postoperative infection, retrospectively linked to delayed diagnosis, fecaloid infection, inefficient primary treatment and inadequate drainage. This affects the wound’s regeneration rate and leads to complications such as perirectal abscesses and fistulas, suture inconsistency, sepsis etc., which can result in prolonged hospital stay, hospital readmission, home nursing wound care needs, and the expenditure of significant medical costs.

**Case report.** Patient R, age 52 years, is hospitalized with a perianal wound following a 1m fall on a metal nail. Clinical and instrumental examinations showed stable hemodynamics, painless palpation of the abdomen, no pneumoperitoneum. Status localis: perianal, on the right a wound 4 cm x 8 cm depth was detected. Primary surgical wound debridement was performed under general anesthesia, and no lesions of the pelvic organs were discovered. Laparoscopy revealed a retroperitoneal hematoma, which was drained, and no penetration into the abdomen cavity was seen. The patient’s condition worsened on the second day and an exploratory laparotomy was performed, where a second retroperitoneal hematoma and color changed blood in recto-sigma was detected. A terminal sigmoidostoma was applied for the exclusion of the extraperitoneal lesion of the rectum without succeeding in suturing the rectum wound. Subsequently, the evolution of the patient was negative and a retroperitoneal phlegmon developed. A second laparotomy followed with the suture of rectal wound and debridement of putrid retroperitoneal phlegmon. The postoperative period evolves severely but favorably with the formation of the pararectal fistula, which imposes multiple cares and readmissions over a period of 2 years with the intent of closing the fistula (rectum stenting, reconstructive surgeries for rectum extirpation and the transanal colon dissension, protection ileostoma) and, finally, a permanent terminal colostoma was applied.

**Conclusions.** In the presented case, the severity of rectum wound, the delayed and wrong diagnosis as well as the errors in patient approach had increased the severity of the disease, with multiple postoperative complications, high medical costs and had led to disability.

**Key words:** traumatic rectum wound, diagnostic and tactical errors, complications, treatment.

## 12. A COMPLEX CASE OF PANCREATIC CANCER COMPLICATED WITH GASTRIC VARICES AND DEEP VEIN THROMBOSIS

Authors: **Elena-Lavinia Pastramoiu, Viorel Moise**  
Scientific adviser: Motoc Radu  
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**Background.** Pancreatic cancer is a highly lethal malignancy with few effective therapies. Pancreatic cancer is often associated with thromboembolic disease, as the malignant condition induces a prothrombotic and a hypercoagulable state.

**Case report.** This is a case of a 63 years old patient, diagnosed with pancreatic cancer with hepatic and splenic metastasis detected on CT, with a level of Carbohydrate antigen (CA) 19-9 of 2556 UI/ml and several associated comorbidities: a moderate form of iron deficiency anemia (Hb -7.4 g/dL, Ht - 25.2%, serum iron - 3.28 µmol/L), large gastric varices at the level of the fornix secondary to segmental portal hypertension, but with no signs of bleeding, incomplete intestinal metaplasia and Helicobacter Pylori infection at the level of the antrum and type 2 diabetes insulin dependent. The patient presented in our Medical Clinic complaining pain and functional impotence of the right inferior limb. We performed a Doppler ultrasound that revealed femoral-popliteal-tibial thrombosis of the right inferior limb and thrombosis of the internal saphenous vein. Due to the association of the thrombotic disease with the gastric varices, the initiation of antithrombotic therapy was questioned because of the high risk of variceal rupture and massive bleeding. The patient was recommended endoscopic injection sclerotherapy, but the procedure could not be performed due to the lack of compliance. A treatment with low molecular weight heparin (Fragmin 2500 IU) and Vessel Due F was initiated. The patient condition was ameliorated during the admission and she was discharged with oncological and gastroenterological follow-up.

**Conclusions.** The peculiarity of this case consists in the association of the thrombotic condition with the gastric varices, both as complications of pancreatic cancer. The treatment in this case has to be carefully chosen, as the patient is at high risk of developing both gastric bleeding and thrombotic embolism.

**Key words:** pancreatic cancer, thromboembolism, gastric varices

## DEPARTMENT OF PEDIATRICS

### 13. HIGH SERUM UNCONJUGATED BILIRUBIN LEVELS IN A PATIENT WITH MUTATIONS IN THE UGT1A1 GENE – CLINICAL CASE PRESENTATION

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**Background.** The UGT1A1 gene plays a significant role in the glucuronidation of bilirubin, and the mutations of this gene lead to limitations in the synthesis of the glucuronyltransferase enzyme, which contributes to the increase in free serum bilirubin. This clinical condition is called Gilbert's syndrome. The patient with Gilbert syndrome has no clinical manifestations until the second decade of life. Scientific studies demonstrate that free serum bilirubin in patients with Gilbert syndrome is almost entirely unconjugated. We present the case study of a 17-year-old patient with Gilbert's syndrome, confirmed by molecular genetics tests.

**Case report.** Patient was born from the first pregnancy with satisfactory evolution. Weight at birth was 3500g, height 52 cm, Apgar score 8/8. She was breastfed until the age of 1.5 years. Growth and development was within normal values, but after 4-5 years of age, she began to manifest periodically poor appetite, vomiting, abdominal pain, constipation. The dynamical assessment of clinical and paraclinical examinations revealed reactive pancreatitis episodes, “S”-

type gall bladder deformity, biliary stasis, hepatosplenomegaly (on ultrasonography non-homogeneous aspect of parenchyma with mild to moderate increased echogenicity). At the age of 10, she was diagnosed with left nephroptosis, secondary chronic pyelonephritis and chronic cystitis. She was diagnosed with adenoiditis and chronic sinusitis, episodes of otitis. On July 20, 2015, patient presented with jaundice. The hemoleucogram revealed mild anemia (hemoglobin was 112 g/l, erythrocyte 3.8 mln/mcl). The biochemical examination revealed increased bilirubin levels, mainly on the basis of free bilirubin: total bilirubin was 36.0 mmol/l, conjugated bilirubin was 9.0 mmol/l, free bilirubin 27.0 mmol/l. Serum glucose was at normal level (4.9 mmol/l), thymol test - 1.0 (normal value). The transaminase levels were normal (ALT 13.6 IU, AST 20.1 IU). From the history, serum bilirubin levels were normal until adolescence. At the age of 17, the level of bilirubin increased considerably, leading to suspected viral hepatitis, which could be present considering that hepatitis was present in the family. For differential diagnosis purpose, markers of viral hepatitis were tested: anti-HBs antibodies <2 m UI/mL (negative). Immunological tests indicated normal values: qualitative C reactive protein <6 mg/L; qualitative ASLO <200 IU; rheumatoid factor <8. Given the exclusion of the infectious factor, Gilbert's syndrome diagnosis was suspected, and was confirmed later by molecular genetic testing: a homozygous insertion of a TA dinucleotide in the region of the UGT1A1 gene promoter (genotype UGT1A1 7/7) was identified in the patient.

**Conclusions.** The clinical and evolution features of the case present clinical interest for the differential diagnosis of jaundice and accumulation of unconjugated (free) bilirubin in the serum.

**Key words:** Gilbert's syndrome, hyperbilirubinemia, jaundice, gene mutation

## DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

### 14. INTRAVENTRICULAR HEMORRHAGE WITH SUBSEQUENT VENTRICULOMEGALY IN PRETERM INFANTS

Authors: **Timea Katona, Razvan-Gabriel Budeanu, Anamaria-Romina Jugariu, Gratiana-Andreea Lates**

Scientific adviser: Márta Simon, MD, PhD, Associate professor  
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**Background.** Preterm infants are at risk for developing many perinatal complications such as intraventricular haemorrhage (IVH) and subsequent ventriculomegaly. Babies born before 32 weeks of pregnancy present an even higher risk for IVH, an important cause of severe cognitive and motor neurologic impairment in very low birth weight infants. The risk of IVH is inversely related to gestational age and birth weight.

**Case Report.** A male neonate was admitted to the neonatal intensive care unit of Mures County Emergency Hospital. He was delivered by a cesarean section at 30-31 weeks of pregnancy. Birth weight was 1300 grams, the cranial perimeter was 29 cm and Apgar score was 7/8 at 1 and 5 minutes respectively. The primary physical examination revealed mild respiratory distress that evolved in the next two days to bilateral pneumothorax, which was successfully drained. Other abnormalities were found such as hypertrophic cardiomyopathy, atrial septal defect (2 mm) and mild mitral insufficiency. Psychomotor agitation was observed and treated with Midazolam, which caused paralysis of the respiratory center. The newborn was intubated. On the 10th day of life, transfontanellar ultrasound showed intraventricular hemorrhage in resorption and secondary ventriculomegaly. Hypotonia, feeding issues and postprandial vomiting was noted, also high levels of procalcitonin and lactate dehydrogenases were found. On the 16th day of life, bacteriological examination identified an infection with *Candida Albicans* and *Enterococcus Faecium*. Treatment with Teicoplanine was initiated. On the 19th day of life, articular pain was observed and the pediatric surgery examination revealed left humeral and forearm fractures,

which were successfully treated. On the 25th day of life, the newborn was transferred to the neurosurgical unit for reservoir implant, cerebrospinal fluid (CSF) drainage and further treatment. Due to the favorable evolution, after 20 days he was transferred back to the premature care unit.

**Conclusions.** Recognition of early signs of intraventricular hemorrhage with catastrophic or saltatory pattern, proper prenatal and neonatal care is essential in order to reduce mortality among preterm newborns.

**Key words:** intraventricular Hemorrhage, ventriculomegaly, preterm infants

## **15. CLINICAL MANAGEMENT IN PREGNANCY COMPLICATED WITH HELLP SYNDROME. CLINICAL CASE PRESENTATION**

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**Background.** Preeclampsia complicates 2-3% of all pregnancies (5-7% in nulliparous women) and remains a leading cause of maternal and perinatal mortality and morbidity. HELLP syndrome is a rare manifestation of hypertensive diseases of pregnancy and represents the most severe end of the pre-eclampsia spectrum. It occurs in 0.5 to 1% of all pregnancies and in 10-20% of cases with severe preeclampsia. Although variable, the onset of the HELLP syndrome is usually rapid.

**Case report.** Patient X, 31y.o, primigesta, 39 w.g. was admitted to the maternity unit complaining of amniotic fluid leakage. She was not in labor on admission and her vital signs were normal: blood pressure (BP) was 130/80 mm Hg, pulse - 76/min. Her antenatal history was uneventful before this admission. Physical examination revealed peripheral edema, pathological weight add + 17 kg. Vaginal delivery according to the protocol was established. Over one hour, suddenly, the patient accused pronounced epigastric pain, occipital headache associated with high BP 180/110 mm Hg. Laboratory investigations included: thrombocytopenia -  $120 \times 10^9$  g/l, leukocytosis -  $12.4 \times 10^9$  g/l. Liver function tests included increased concentrations of alkaline phosphatase - 126 u/l, LDH - 4886 u/l, ALAT - 317 u/l, ASAT - 500 u/l. Urinalysis for protein - 4.32 g/l. On the background of hypotensive therapy, the 150/100 mm Hg BP and symptoms of organ damage persisted. At this stage a diagnosis of HELLP syndrome was considered. In view of the rapid progression of the disease and the gestational age, it was decided to proceed to urgent delivery by caesarean section. One infant was delivered, with intrauterine growth restriction (weight - 2390g). In dynamics, hemolysis syndrome is also associated (haemoglobin - 90 g/l, erythrocytes -  $2.9 \times 10^{12}$  g/l, haematocrit - 0.27%). Postoperative period was complicated by CID syndrome and acute renal failure. Clinical management was performed according to the protocols and patient was discharged in satisfactory condition at 11th postpartum day.

**Conclusions.** HELLP syndrome is a severe complication of pregnancy, fulminant evolution being frequently evaluated in primiparous without pre-existing medical conditions. Due to maternal and fetal impact, HELLP syndrome needs an urgent delivery by caesarian section, which is the essential method indicated in the severe form.

**Key words:** HELLP syndrome, pregnancy.

## **16. MANAGEMENT OF GIANT OVARIAN CYST IN PREGNANCY. CLINICAL CASE REPORT**

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**Background.** Ovarian cysts are met in women of various ages, most commonly occurring during a woman's childbearing years, pregnant women not being an exception. Moreover, studies conclude that ovarian cancer is among top five types of cancers detected during pregnancy. The latest data show that the incidence of ovarian cysts in pregnancy varies from 0.15 to 5.7% malignancies ranging from 0.8 to 13%. Their evolution is frequently hard to predict, some cysts stop growing or disappear, while other may rupture, torsion or cause the obstruction of the delivery pathways. Only ovarian cysts at risk of complication are to be considered. These are mainly ovarian cysts, which, whatever their echogenic features, have a size  $\geq 5$  cm. Their prevalence is estimated between 0.5 and 2 per thousand of pregnancies.

**Case report.** Patient X, 21 y.o., primigesta, pregnant 36-37 w. a., underwent a routine gynecological and ultrasonographic examination, during which she was firstly diagnosed with a giant 195x115 mm cyst in the projection of the right adnexa, supposedly originating from the ovary. Considering the gestational term and the lack of data for cyst complications, an expectative management was chosen and a re-evaluation was scheduled in two weeks. Consequently, the woman was admitted to the IMSP IM and C 3rd level hospital for further monitoring, investigations and establishing the optimal birth management. The next performed USG showed that the dimensions of the cyst have grown to 223x123 mm, it was mainly situated in the subhepatic space, it's precise origin was hard to determine. It was decided to finish the pregnancy via caesarean section and invite a general surgeon to the intervention, in case other surgical manipulations would be needed. The tumoral markers were determined, with no deviations found: CA125 – 13,5 ( $N \leq 35$ ); HE4 – 35 ( $N \leq 70$ ); ROMA index – 3,4 ( $N 0 - 11,4\%$ ). At the term of 38-39 w.a. an elective caesarean section was performed. It was established that the cyst had an ovarian origin and was fully extracted. The abdominal cavity was drained. Total haemorage-800 ml. The woman and the newborn were discharged home on the 4th postoperative day. The histological exam revealed an ovarian dymorphus sero-mucinous cystadenome, with a 2+ to 3+ mucin reaction, follicular cysts and lonely, distrofic primordial follicles.

**Conclusions.** Though ovarian cysts are seldom met in pregnancy, their presence may have serious repercussions on the evolution of the pregnancy and on the fetus. This is why, even in the absence of symptoms, an USG supervision combined with other methods for diagnostic is necessary. The decision upon the optimal birth way should be taken individually in each case, the histological exam being crucial for establishing the final diagnosis.

**Key words:** ovarian cyst, pregnancy

## DEPARTMENT OF INFECTIOUS DISEASES

### 17. DENGUE INFECTION: A CASE PRESENTATION

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**Background.** Dengue disease is an acute viral illness with the common symptoms, such as: high fever, muscle and joint pain, myalgia, cutaneous rash, hemorrhagic episodes. According to the WHO, the number of cases increased to 390 million per year in more than 100 countries, especially in the tropical and subtropical regions.

**Case report.** A 35-year-old woman from Chisinau, Republic of Moldova presented to the Hospital of Infectious Diseases “T. Ciorba” with weakness, rash, fever 39C and pronounced sweating. The first symptoms appeared on 21.01.2016 including strong headache and fever 38.4C. Then scarlatiform maculopapular rashes occurred on the upper chest, on the sternum, and on shoulders. The eruption was red, confluent and without hemorrhagic component. On the fifth day appeared myalgia in the thoracic region and in the iliac region. On the sixth day of illness, the scarlatiform maculopapular rashes spread throughout the body. Bleeding signs were not detected. On 26th January the patient addressed at Medpark hospital, where she had her blood tests taken and was directed to the Hospital of Infection Diseases “T. Ciorba”. Epidemiological anamnesis: on the 18th January 2016 the patient returned from Bali, Indonesia, where she spent 12 days with her girlfriend and girlfriend’s husband, who are from Moscow. She reported that they were bitten by mosquitoes. Exactly the same day as the patient got sick, her girlfriend started having fever and skin rash. On 27th January she addressed to the Infectious Disease Hospital in Moscow, where the diagnosis of Dengue Fever was established to her. Laboratory investigations: General blood analysis-erythrocytopenia (2.9\*10<sup>12</sup>/L), leucocytopenia(2.3\*10<sup>9</sup>/L) and lymphocytosis (51.7%). The biochemical analysis of the blood didn’t show any pathological changes, as well as didn’t the general urinalysis.

**Conclusions.** Dengue Virus belongs to the same family of Flaviviridae as Zika Virus, also both of them are tropical infections, spreaded in the same areas and transmitted by the same mosquitoes. The vaccine was developed, but it’s not available in our country so for this patient it’s important to avoid reinfection with other serotypes of the virus, which can therefore lead to the development of Dengue shock syndrome. Early diagnosis of travel-imported cases is important to reduce the risk of localized outbreaks of tropical arboviruses such as Dengue Virus and the risk of local transmission from body fluids or vertical transmission.

**Key words:** dengue Virus, case report, infection.

## DEPARTMENT OF NEUROSURGERY

### 18. ISOLATED POST STROKE EPILEPTIC SEIZURES IN WOMEN

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**Introduction.** Seizures are a known complication of stroke. They may increase the cerebral lesions and induce epileptic status or encephalopathy. The correlation between brain structural damage, epileptic foci, antiepileptic drugs and clinical outcome is unknown. Late-onset seizures are thought to be caused by gliosis and the development of a meningocerebral cicatrix. Changes in membrane properties, deafferentation, selective neuronal loss, and collateral sprouting may result in hyperexcitability and neuronal synchrony strong enough to cause seizures. Can we consider as Epilepsy one grand-mal seizure after a massive ischemic stroke?

**Case report.** A 41 year – old woman with a history of thrombosis of the right coronary artery, myocardial infarction at the age of 35, was confirmed with primary antiphospholipid syndrome. After two years, she developed cerebral infarction in MCA territory, and with mild left hemiparesis she was hospitalized at the Neurological Institute. The 3T cerebral MRT was performed on Siemens Magnetom Skyra 3T, and confirmed a large cerebral infarction in the right hemisphere with a density of 12 UH, dimensions 9.0 x 5.0 x 6.0 cm without mass effect. She continued anticoagulation therapy – warfarin – under the INR (2.0 - 2.5) control. At the age of 39 the patient developed a single generalized tonic - clonic epileptic seizure. Routine EEG, prolonged EEG (2 hours) at the Nicolet EEG Wireless Amplifier System were performed. EEG

data showed focalized slow spike – wave: theta waves right F – C – T and T posterior spike. Hyperventilation has induced F bilateral extension, without secondary generalization. Photic stimulation test maintains focalized epileptic activity. Lamotrigine was initiated in increasing doses reaching the therapeutic dose – 200 mg/24 hours. Epileptic seizures have not recurred. Free period of seizures - 3 years with antiepileptic treatment. EEG and cerebral MRI monitoring were performed regularly, once a year over the last 3 years. Cerebral MRI did not reveal adjacent lesions. EEG showed the disappearance of sharp waves and the persistence of slow F – C right waves.

**Conclusions.** According to the literature data, the seizures could repeat at any time, i.e. over 5 years or 10 after the stroke. In the 3-year period without seizures probably there was no transformation of a structurally damaged brain into an epileptic one. The last definition of epilepsy by R. Fisher confirmed that one epileptic seizure cannot be epilepsy. The severity and location of the infarction advocates a vascular epilepsy, not epileptogenic foci.

**Key words:** stroke, seizures, antiepileptic drugs

## **19. TREATMENT OF CHRONIC LYMPHOCYTIC LEUKEMIA – A DIFFICULT CHOICE FOR SEVERE COMPLICATIONS: A CASE REPORT**

Authors: **Razvan-Gabriel Budeanu, Anamaria-Romina Jugariu, Timea Katona, Alexandru-Emil Baetu, Gratiana-Andreea Lates**

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University of Medicine and Pharmacy of Targu Mures

**Background.** Chronic lymphocytic leukemia (CLL) is the most common form of adult leukemia in the western European countries and is characterized by the relentless accumulation of monoclonal B cells with the appearance of small mature lymphocytes and with a characteristic immunophenotype. Even with the right treatment, this disease is known to have a variable course: some patients die within one year after diagnosis while others live for longer than ten years.

**Case report.** A 59-year-old female with a past medical history of ischemic cardiopathy and hypothyroidism was admitted to the Haematology Unit of Mures County Emergency Hospital with severe anemia, chronic fatigue and leukocytosis. After the anemia was corrected, the diagnosis of chronic lymphocytic leukemia was confirmed by complete blood count and immunophenotyping for which the patients was only observed for 2 years. Due to the secondary severe anemia the treatment with Fludarabine is started as monochemotherapy first line treatment. After one month the patient is hospitalized with severe anemia with Coombs' test positive for which methylprednisolone is administered for one week and COP chemotherapy is induced. Because of the gastrointestinal side effects, the COP chemotherapy is ceased and Fludarabine treatment is reintroduced. The treatment is continued for one year but the multiple side effects (hemolytic anemia, herpes zoster, Listeria meningitis) determined cessation of Fludarabine and Chlorambucil treatment was introduced. The treatment with Chlorambucil was continued for 3 years. Even though the patient supported well the treatment, the splenomegaly has progressively increased (from 3 cm to 8 cm) and the infectious diseases appeared (Acinetobacter pneumonia and pharyngeal candidiasis).

**Conclusions.** Even though the treatment is accordingly to the actual international guides, the individual responsibility to the drugs and the unpredictable evolution of this disease may be a challenge in treating chronic lymphocytic leukemia.

**Key words:** chronic lymphocytic leukemia, treatment, drug selection, side effects

## **20. FORENSIC ASPECTS OF NON-TRAUMATIC INTRACEREBRAL HEMORRHAGE: A CASE REPORT**

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**Background.** Cases when unexpected death occurs, when the patient is in apparent health or the event comes during presumably normal activity, especially when it is unwitnessed or when the victim is found without apparent signs of foul play, may pose a significant challenge to the coroner in reaching a proper determination of the cause and the manner of death. Spontaneous intracerebral hemorrhage (ICH) is a bleeding into the parenchyma of the brain and accounts for approximately 10 % to 20 % of all strokes. ICH is a multi-factorial disease caused by several interacting and overlapping risk factors and etiologies. When massive ICH, not connected with head trauma, has occurred, and it is multifocal or not located in one of the typical sites for hypertensive hemorrhage, one of a multitude of other causes must be suspected. High alcohol intake increases the risk of all stroke subtypes and of the development of liver diseases and may induce hypertension, by affecting brain function and producing a series of alcohol-related or alcohol caused diseases and is associated with changes in the coagulation system. Liver cirrhosis is a well-known risk factor for ICH, due to impaired coagulation, despite the relatively rare occurrence of ICH in cirrhotic patients.

**Case report.** The authors report a case of a 48 years old man, who was admitted in the Neurosurgery Department, being found in the street, with a present state of consciousness, presenting aphasia, right hemiplegia. The first computer tomography revealed left side temporal-parietal-occipital intracerebral hematoma of 52/20/45 mm, postcentral intergyral subarachnoid hemorrhage, and cerebral atrophy. On the second computer tomography, the lesions underwent moderate resorption, and a conservative treatment for ICH was chosen. After 28 days from the admission in the hospital, the patient died, due to a cardio-respiratory arrest. The release diagnosis was: Left Side parietal-occipital intracerebral haematoma. Right hemiparesis. Hepatic encephalopathy. Mixed decompensated alcoholic liver cirrhosis. Scleral and tegumentary jaundice. Ascites. Hypersplenism. Severe thrombocytopenia. Hypoalbuminemia. Bronchopneumonia. Schizophrenia. The body was brought for autopsy at the Iasi Forensic Institute. The necropsic examination revealed: right side occipital epicranial hemorrhagic infiltration, a left side parietal-occipital lobe blood collection, cerebral oedema, pachypleuritis, bronchopneumonia, ascites (5 liters), cirrhosis, and splenomegaly.

**Conclusions.** Proper documentation of injuries, along with history of the case, has a huge importance in reaching a conclusion on both the cause and the manner of death. In this case, the absence of external head injuries, the absence of underlying brain lesions that would be suggestive for a head trauma, the presence of risk factors for primary non-traumatic ICH, make a context in which the case may be properly interpreted.

**Key words:** Head injuries, intracerebral hemorrhage, case report.

## **21. FOSTER KENNEDY SYNDROME AS AN INITIAL PRESENTATION OF NEUROFIBROMATOSIS TYPE 2: A CASE REPORT**

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Scientific adviser: Aureliu Bodi, MD, PhD, Professor, Department of Neurosurgery, Republican Clinical Hospital

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**Background.** Foster Kennedy syndrome (FKS) is described as ipsilateral optic atrophy and contralateral papilledema from an intracranial mass. FKS is uncommon manifestation of Neurofibromatosis type 2 (NF2), which is generally presented with hearing loss and tinnitus.

**Case report.** In this report we present a 26-year-old female with the atypical presentation of NF2. First symptoms were progressive vision loss and cognitive dysfunction. Ophthalmological examination revealed right-sided papilledema and left-sided optic atrophy. Magnetic resonance imaging (MRI) of the brain revealed bilateral vestibulocochlear schwannoma and three intracranial meningiomas, involving the parafalcine region and the olfactory groove. Whole spine MRI showed one intramedullary tumor at C1-C2 level, multiple spinal canal nodules in cervico-dorsal regions and one Th12-L2 extramedullary tumor. Based on clinical and imaging findings the diagnosis of neurofibromatosis type 2 was established. The patient underwent surgical resection of giant parasagittal meningioma, subtotal resection of the olfactory groove meningioma and total resection of Th12-L2 meningioma. Six months after brain surgery, she underwent Gamma knife radiosurgery for remnant frontobasal meningioma and for both vestibulocochlear schwannomas. Despite the combined treatment of intracranial lesions, only an insignificant vision improvement was achieved.

**Conclusions.** FKS can be the presenting symptom of NF2. Early detection and treatment of ophthalmologic manifestations of NF2 may prevent amblyopia development.

**Key words:** Foster Kennedy syndrome, neurofibromatosis type 2, intracranial meningioma, intramedullary tumor, extramedullary tumor

## DEPARTMENT OF NEUROLOGY no.1

### 22. INTRACEREBRAL HEMORRHAGE IN A PATIENT WITH MOYAMOYA SYNDROME: CASE REPORT

Authors: **Pavel Gavriiliuc**<sup>1,2</sup>, **Elena Costru-Taşnic**<sup>1</sup>, **Tatiana Pleşcan**<sup>1</sup>, **Dacin Ianuş**<sup>2</sup>

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**Background.** Moyamoya disease is a cerebrovascular disease that is characterized by bilateral chronic and progressive stenosis or occlusion of the arteries around the circle of Willis with development of collateral circulation, of unknown etiology. It has a high incidence in Japan and Asian population, with fewer cases described in Europe. Similar angiographic findings can be seen in patients with other medical conditions that are described as Moyamoya syndrome. Main clinical features include transient ischemic attacks, ischemic strokes, and hemorrhagic strokes.

**Case report.** We describe a 38-year-old female patient that presented with an intracerebral hemorrhage with a typical location for hypertensive bleeds. She had no vascular risk factors, but a high normal blood pressure (140/90 mmHg), and elevated ESR. A magnetic resonance angiography showed occlusion of internal carotid artery with development of collateral cerebral circulation on the side of the bleeding. Unilateral affection and elevated ESR were more characteristic for a moyamoya syndrome within a systemic disease.

**Conclusions.** Despite a typical hypertensive location of the bleeding, vascular imaging is warranted in all patients with intracerebral bleedings to evaluate for atypical etiologies. Our case represents a patient that might benefit from revascularization surgery in the context of multifactorial risk factor control.

**Key words:** Moyamoya syndrome, stroke, hemorrhage, intracerebral, collateral flow.

### 23. POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME MIMICKING

## STROKE IN A YOUNG WOMAN

Authors: **Elena Costru-Tasnic**<sup>1</sup>, **Pavel Gavriliuc**<sup>1,2</sup>, **Tatiana Plescan**<sup>2</sup>, **Olesea Odainic**<sup>2</sup>

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**Background.** Stroke in young patients (<50 years old) represents a diagnosis and therapeutic challenge, given the multitude of etiologies and mimics of the disease. Pregnant women have a higher risk of stroke during the entire pregnancy, especially in the postpartum period.

**Case report.** We present the case of a young woman of 35 years old, admitted to the neuroemergencies department, with previous transient amaurosis, single episode of complex motor seizures the week before admission, moderate right sided hemiparesis, and temporal-spatial disorientation. Anamnesis reveals an emergency c-section 12 days before hospitalization at 36 weeks of pregnancy. Past medical history – unremarkable. Admission neurological state: awake, alert, disoriented in time, and space. Intact cranial nerves. Diminished strength in the right upper and lower limbs – 2/5 points; hypertonus and brisk deep tendon reflexes on the right; bilateral Babinski sign; mild hemihypoalgesia on the right side; temporal and spatial disorientation, cognitive decline (MMSE 15p). No meningeal signs. To exclude a possible posterior circulation ischemic stroke, a brain computed tomography was performed showing some diffuse occipital lobe lesions suggestive for encephalitis. Further investigation by 3T brain MRI showed diffuse, bilateral, white matter lesions of possible inflammatory or toxic-metabolic etiology. Posterior Reversible Encephalopathy Syndrome (PRES) diagnosis was established and targeted treatment performed. Two weeks later we noticed complete resolution of the motor deficit (patient walking alone without support), the patient was alert, oriented in time, space and herself, the cognitive function improved (MMSE 25 p) with home discharge. Normal follow-up MRI (1 month) was obtained.

**Conclusions.** Stroke should be excluded in post-partum women given the higher incidence in this group of population. PRES syndrome is a benign stroke-mimic that should be suspected in the appropriate clinical and imaging context for correct management of the pathology.

**Key words:** PRES syndrome, stroke mimics in youth, stroke in women.

## 24. SPONTANEOUS PNEUMOTHORAX AFTER A RESPIRATORY DISTRESS SYNDROME – A CASE REPORT

Authors: **Anamaria-Romina Jugariu**, **Razvan-Gabriel Budeanu**, **Timea Katona**, **Gratiana-Andreea Lates**, **Andreea-Iuliana Miron**

Scientific adviser: Simon Márta, MD, PhD, Associate professor  
University of Medicine and Pharmacy of Targu Mures

**Background.** Respiratory distress syndrome (RDS) of the newborn is caused by pulmonary surfactant deficiency in the lungs of neonates which leads to alveolar collapse and noncompliant lungs. It can be primary or secondary, due to meconium aspiration or Group B Streptococcus (GBS) infection. RDS is usually diagnosed with a combination of clinical signs and/or symptoms (apnea, cyanosis, grunting, inspiratory stridor, nasal flaring, poor feeding, and tachypnea), chest radiographic findings, and arterial blood gas Results. In near term or term infants with great respiratory effort, RDS can be complicated with spontaneous pneumothorax.

**Case report.** A 2700 g male neonate was admitted to the neonatal intensive care unit (NICU) of Mures County Emergency Hospital with respiratory distress syndrome. Baby was vaginal born at a gestational age of 39/40 weeks at Ludus Emergency Hospital. Apgar score was 10/10 at the 1

min and 5 minutes respectively. The patient developed respiratory distress syndrome in the first few hours. He had inter- and subcostal retractions, grunting, tachypnea (80 breaths per minute), nasal flaring and the pulse was 127 beats per minute with a SpO<sub>2</sub> under 90% in room air and higher than 95% with oxygen supplementation. The treatment with Dexamethasone showed no improvement and an urgent Chest X ray was ordered which revealed a left pneumothorax with mediastinal shift to the opposite site. ABG revealed severe acidosis. (pH – 7.13, PCO<sub>2</sub> – 70, PO<sub>2</sub> – 46 mmHg). In view of impending respiratory failure and shock baby was intubated, the pneumothorax was drained. Hemoculture was positive with GBS. The antibiotic therapy (Ampicillin/Sulbactam and Amikacin) was started and the patient was carefully monitored.

**Conclusions.** In conclusion, although respiratory distress syndrome is rare in near term or term newborn, is usually secondary to a parenchymal pathology, being a common case of spontaneous pneumothorax in these infants. Early recognition and treatment is life saving. Usual manifestation is progressive respiratory difficulty starting soon after birth.

**Key words:** GBS infection, respiratory distress, near term infant, spontaneous pneumothorax

## DEPARTMENT OF MOLECULAR BIOLOGY AND HUMAN GENETICS

### 25. DUCHENNE MUSCULAR DYSTROPHY AND LIMB-GIRDLE MUSCULAR DYSTROPHY: CLINICAL CASES

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Scientific adviser: Sprincean Mariana, MD, PhD, Associate professor, Department of Molecular Biology and Human Genetics

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**Background :** Muscular dystrophies (MD) represent a large group of genetic disorders that are manifested by progressive increase of muscle weakness. Duchenne muscular dystrophy (DMD) is an X-linked disorder and limb-girdle muscular dystrophies (LGMDs) include over thirty subtypes, that are classified in autosomal dominant (1A-1H) and recessive (2A-2W). Our aims was to highlight the clinical and genetic aspects in MD by reporting two clinical cases with the aim of improving the early diagnosis.

**Case report.** The study was performed on the basis of the literature review and presentation of two clinical cases: a 6-year-old boy with DMD and another 17 years old boy with LGMD. Patient G.V. was diagnosed with DMD at the age of 3 years. Electroneuromyography (ENMG) and genetic test (deletion of exons 45-52 in the dystrophin gene) confirmed the diagnosis. He has the following clinical signs: calf pseudohypertrophy, waddling gait, lordosis, elevated serum creatine kinase (CK) - 14 740 U/l, MB fraction – 833 U/l, lactate dehydrogenase (LDH) – 1934 U/l. Patient M.A. was diagnosed with LGMD at the age of 7 years through ENMG. He presents severe motor deficit, waddling gait, hypoplasia of the thigh muscles, permanent asthenia, total CK - 486 U/l, MB fraction - 36 U/l, LDH - 358 U/l. He has first-degree disability and cardiomyopathy.

**Conclusions.** The first signs of MD (DMD and LGMD) occur at early stages, but often are not recognized. Genetic counseling and prenatal diagnosis will significantly reduce morbidity and mortality, will contribute to the improving of the quality of life.

**Key words:** Muscular dystrophies (MD), Duchenne muscular dystrophy (DMD), limb-girdle muscular dystrophies (LGMDs).

### 26. THE CLINICAL-GENETIC PARTICULARITIES IN APERT SYNDROME

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**Background.** Apert syndrome (AS) is a dominant autosomal genetic disorder caused by heterogeneous mutation in FGFR2 genes on chromosome 10q26 and belongs to a group of disorders known as craniofacial congenital malformations. AS can promote the premature fusion of bones in the skull, hands, and feet. The incidence of infants born with Apert syndrome is approximately 1 in 50000 to 80000. In this study is emphasized the importance of clinical and genetic approaches in the research on the specific diagnosis in patients with Apert syndrome.

**Case report.** The clinical particularities of Apert syndrome are determined by craniosynostosis result from the premature fusion of the skull bones. The child present following clinical features: short anterioposterior diameter with high forehead and flat occiput, flat facies, shallow orbits, proptosis, hypertelorism, small nose, maxillary hypoplasia, a cleft palate, low set ears, and cutaneous syndactyly of the fingers and toes. The neuroimaging of the head revealed craniosynostosis of the skull bones. The diagnosis of Apert syndrome was confirmed by clinical manifestations and paraclinical investigations. The treatment of Apert syndrome is directed toward the specific symptoms that are apparent in each individual.

**Conclusions.** Clinical and genetic approaches during genetic counseling combined with a number of new methods of neonatal diagnosis in patients with Apert syndrome can reduce the frequency of chromosomal abnormalities and congenital malformations.

**Key words:** Apert syndrome, congenital malformations, craniosynostosis, syndactyly.

## DEPARTMENT OF ORTHOPEDICS AND TRAUMATOLOGY

### 27. RECONSTRUCTION OF THE SCALP DEFECT WITH THE TRAPEZIUS MUSCLE FLAP (CLINICAL CASE)

Authors: **Viorica Mihaluta, Alina Stoian, Elena Pavlovschi**

Scientific adviser: Grigore Verega, MD, PhD, Professor, Department of Traumatology and Orthopedics

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**Background.** Many patients with complex scalp and skull defects can benefit from scalp reconstruction using the trapezoid flap, reducing the morbidity of the donor site. The trapezius flap was first reported by Nakajima and Fujino in 1984. It was originally described as a myocutaneous or muscle flap, and it has also been used as a free flap. The blood that supply the trapezium muscle and the skin is mainly from the superficial and descending branches of the transverse cervical artery as well as the occipital artery.

**Case report.** This work presents the clinical case of a 65-year-old woman who was diagnosed with cornified pluristrative squamos cancer with bone destruction and invasion to confluence sinus and left transverse venous sinus, who underwent the occipital extra-intracranial tumor removal. She addresses to our clinic with a massive defect of 10 by 18 cm. After making the operative planning, we decided to solve the case with distal trapezius muscle flap.

**Conclusions.** The decision of the reconstructive technique should be taken into account with regarding to its consequences on the affected anatomical structures, the personal pathological antecedents and pre-existing lesions at the level of the donor area.

**Key words:** reconstruction of scalp defect, trapezius muscle, clinical case

### 28. SURGICAL TREATMENT OF FRACTURES IN PATIENTS WITH POLYTRAUMA, CASE REPORT.



Author: **Ion Caus**

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**Background.** Polytrauma is a condition defined as the trauma of more than 2-3 anatomic regions, of which 1 with vital risk and it is the leading cause of mortality and morbidity in modern society, in the most cases being affected young, active people capable of working. As a result, spending on treatment will be extremely high for relatives and health institutions. Etiology of polytrauma, the most frequent is associated with car accidents, because motor vehicle accidents often occur at a high velocities causing multiple injuries with the loss of work capacity.

**Case report.** A 37-year-old woman after a road accident has been hospitalized with multiple trauma. The first aid was rendered at raional hospital in intensive care department, after 4 days she was transferred at the Clinical Hospital of Orthopaedy and Traumatology. After the investigation (computer tomography, x-ray), was established cerebral contusion gr I, subdural hematoma, bone injury: fracture of the right branch of the mandible, comminuted fracture of left distal humeral epimetaphysis AO type C, comminuted fracture of the left distal radial epimetaphysis, fracture of right femoral diaphysis 1/3 medial distal with displacement of fragments and fracture of right proximal fibula with contusion of right fibular nerve. After neurosurgeon consulting, recommendation was, to operate patients no earlier than two weeks after head trauma. The mandible fracture was fixed by the stomatologist with wire in the 7-th day after trauma. The tactic chosen by surgeon-orthoped was pending for stabilization. Because of the subdural hematoma the operation was performed at 14 days after car accident, treatment being performed for all fractures in one step: open reduction with internal fixation (ORIF) of distal left humerus with plates, closed reduction and fixation with K-wires of left distal radial epimetaphysis, ORIF of right femoral diaphysis, right fibular nerve neurolysis.

**Conclusions.** Decision making in the management of the polytraumatized patient requires the choice of both, time and operative tactics for optimal resolution with low risks in the condition of trauma. In the given case the tactic was successful, stable and with favorable prognosis.

**Key words:** polytrauma, ORIF, multiple fracture, brain injury.

## **29. CLINICAL AND PATHOPHYSIOLOGICAL CHARACTERISTICS IN A YOUNG STRESSED PATIENT WITH HYPERTENSION**

Authors: **Cristian-Dorin Gurau, Beatrice Balaceanu, Raluca Staiculescu**

Scientific adviser: Alice Balaceanu, MD, PhD, Associate professor

*Carol Davila* University of Medicine and Pharmacy, Bucharest, Romania

**Background.** Hypertension in young people is secondary, but stress could be an important risk factor.

**Case report.** A 21 years old patient presented for increased blood pressure in the last two months. He has no medical history, he is non-smoker. Physical exam: normal weight, blood pressure (BP) 160/90 mmHg, 75 bpm, regular. Laboratory tests: mild hypercholesterolemia. Abdominal ultrasound: normal right kidney, left kidney 66/48mm, thin parenchyma. Transthoracic echocardiography, thyroid ultrasonography was in normal limits. Ambulatory blood pressure monitoring showed more than 47% of diurnal values greater than 140 mmHg, with diurnal average blood pressure 137/85 mmHg and nocturnal average blood pressure 115/72 mmHg. Pulse pressure was 42.7 mmHg. Serum TSH, free T4, aldosterone, renin and urinary metanephrines, normetanephrines, 3-methoxytyramine, vanillylmandelic acid was in normal limits. Plasma cortisol was 589 nmol/L. Chest CT in normal limits. Contrast enhanced

abdominal CT: normal right kidney, left kidney 70 mm, 5 mm cortical thickness, normal shape, position, secretion and excretion. Angiography showed two left renal veins, one of them over the artery, but with normal caliber of the left renal artery.

**Conclusions.** BP values occurred in conditions of a job with a lot of stress to a young patient with a left kidney malformation, but with normal renal function. Stress is responsible for a lot of physiological changes, including constant increase in blood pressure. The scale of cardiovascular risk should be reevaluated to young people through proper trials.

**Key words:** hypertension, young people, hypercholesterolemia.

### **30. A POST-TRAUMATIC MACULAR HEMORRHAGE OCCURED ON A IDIOPATHIC CORIORETINEAL SCAR**

Author: **Dragoş Constantin Cucoranu**

Scientific adviser: Dr. Anda Sireteanu Cucui

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**Background.** Macular haemorrhage can be caused by multiple factors such as sustained exposure to high altitude conditions, retinal artery aneurysm rupture or choroidal vasculopathy and also by trauma. Its origin is mandatory to be adequately described in order to ensure an accurate and complete differential diagnosis. Most traumatic lesions left untreated have an adverse prognostic due to mechanical damage caused by fibrinous infiltration of the retina.

**Case report.** We present a case of a 34 years old patient diagnosed with a traumatic right ocular lesion caused by an elastic chord on a cicatricial terrain. On admission he reported ocular redness, pain and loss of sight, with a visual acuity of 0.1. The local ophthalmological evaluation shows a profound amblyopia caused by an important vicious refraction (anisotropy) in the left eye. A paracentral corneal erosion (1.5 mm) of the right eye was also observed.

In addition to retinal photography, A and B mode echography, angiofluorography, optical coherence tomography, the following laboratory tests was performed: IgM and IgG antibodies for toxoplasmosis, toxocara, cytomegalovirus, measles, as well as for the exclusion of other rare diseases that affects the posterior uvea. Ophthalmological imagistics showed hemorrhage in the deep layers of macula, with the post-traumatic detachment of neuroepithelium, a hyperecogenous area with a maximum thickness of 0.4 mm and an absolute central scotoma of 5 degrees in diameter. Local treatment with Atropine, Indocollyre, Azopt, artificial tears and systemic treatment with Etamsylate, Dexamed and Mannitol was administrated during hospitalization. On the discharge day an improved visual acuity (0.5) of the right eye was observed. Ophtalmological reevaluation after 1 week was recommended. The vasoformative membrane lack in the macular zone, the local hypertrophy of the pigmentary epithelium and identification of a toxocara infection guided us to prescribe topic treatment with anti inflammatory and midriatic drugs and systemic treatment with anti inflammatory, anti toxocara and ocular hypotonic drugs.

**Conclusions.** In order to establish a good prognosis in a relatively short time, and to assure a proper therapy, the importance of ophthalmic imaging as well as serological results is crucial.

This case was considered a challenge in making the therapeutic decision, taking into account the important post-traumatic visual deficiency on the right eye with the other eye being affected by deep amblyopia.

**Key words:** OCT, macular, hemorrhage, traumatic, angiofluorography

### **31. CHRONIC MYELOID LEUKEMIA ASSOCIATED WITH EARLY LYMPHOBLASTIC CRISIS**

Authors: **Timea Katona, Razvan-Gabriel Budeanu, Anamaria-Romina Jugariu**

Scientific adviser: Lecturer Dr. Smaranda Demian  
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Scientific adviser: Smaranda Demian, MD, PhD, Associate professor  
University of Medicine and Pharmacy of Targu Mures

**Background.** The blastic crisis of chronic myeloid leukemia (CML-BC) is usually the final phase of the disease, in which the percentage of the young, often undifferentiated cells, known as blastocytes gets above 20%. Nowadays, in the era of the therapy with Tyrosine Kinase Inhibitors, the transformation from CML to CML-BC occurs much later and more rarely.

**Case report.** We present the case of a 71 year old male, admitted in July 2017, to the Haematology Unit of Mures County Emergency Hospital presenting severe anemia, leukocytosis, leukocyte left shift, absence of the leukemic hiatus and thrombocytopenia. Splenomegaly (7 - 9 cm) was also found. Cytogenetic examination revealed the presence of Philadelphia chromosome and real-time PCR showed 87% positivity for BCR-ABL. Chronic Myeloid Leukemia was the diagnosis and treatment with Dasatinib was initiated. A month after the patient develops severe thrombocytopenia and hemorrhagic purpura. Treatment was interrupted until the platelet count was restored and continued after with smaller dosage. Erythrocyte mass was transfused in order to correct the anemia. Three months after the diagnosis with CML, spleen expansion and hyperleukocytosis was observed. The peripheral blood smear indicated high blastocyte percentage (88%) and the patient was admitted and diagnosed with CML-BC. The diagnosis was confirmed, RT-PCR still showed positivity for BCR-ABL in 48%. Induction treatment for Acute Lymphoblastic Leukemia with adapted protocol for elderly patient with comorbidities was initiated. In December 2017 the patient refuses further treatment and unfortunately passes away.

**Conclusion.** Chronic myeloid leukemia is a condition with a high survival rate, especially after introducing the tyrosine kinase inhibitors, but when the blastic transformation occurs, many patients are lost due to infections and hemorrhagic complications.

**Key words:** myeloid, leukemia, lymphoblastic, tyrosine, kinase.

## 32. PARTIAL 13 MONOSOMY WITH CORPUS CALLOSUM AGENESIS AND OTHER CONGENITAL ABNORMALITIES – A CASE REPORT

Authors: **Răzvan-Gabriel Budeanu, Anamaria-Romina Jugariu, Timea Katona, Alexandru-Emil Băetu, Andreea-Iuliana Miron**

Scientific adviser: Márta Simon, MD, PhD, Associate professor  
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**Background.** The corpus callosum comprises the largest tract of nerve fibres in the human brain. It is developed from the telencephalon starting in the 11th week of foetal life. Partial or complete agenesis of the corpus callosum is a rare developmental anomaly of unknown cause. A case of corpus callosum agenesis is described.

**Case report.** The patient was a small for gestational age (1950g) female infant delivered at 35 weeks. In view of multiple congenital abnormalities (bilateral choanal atresia, atrial septal defect, ventricular septal defect and facial dysmorphism), chromosome studies were done and showed partial monosomy of chromosome 13 (46,XX, del (13)(q22q33) ). Head ultrasound and cranial CT scan was performed which found appearances typical of agenesis of the corpus with ascension of the third ventricle and increased distance between lateral ventricles, cerebellar hemispheres and vermis atrophy, cisterna magna and fourth ventricle dilatation. After the surgical intervention for bilateral choanal atresia, a cranial ultrasound was performed and confirmed the atresia of the corpus callosum, but the path of anterior cerebral artery showed on

color Doppler suggests the existence of the rostrum. The patient was carefully monitored after the surgery. 24 days after the surgery the general status of the patient becomes altered, the patient presenting jet vomiting and nystagmus. The transfontanellar ultrasound showed ventriculomegaly with intracranial pressure (IR: 0.79->0.95) and the lumbar puncture showed transparent, sterile cerebrospinal fluid for which she remains carefully monitored.

**Conclusions.** Although rare, agenesis of the corpus callosum is easily recognisable on CT scan and neonatal ultrasound. Even it is itself asymptomatic, may be associated with other malformations, especially in genetic syndromes, playing an important role in the production of neurological symptoms.

**Key words:** congenital malformations, genetic syndrome, corpus callosum agenesis

### **33. MYELOID PROLIFERATION ASSOCIATED WITH DOWN SYNDROME: A CASE REPORT**

Authors: **Anamaria-Romina Jugariu, Razvan-Gabriel Budeanu, Timea Katona, Andreea-Iuliana Miron, Alexandru-Emil Baetu**

Scientific adviser: Smaranda Demian, MD, PhD, Associate professor  
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**Background.** Atypical chronic myeloid leukemia (aCML), BCR-ABL1 negative is a rare myelodysplastic syndrome (MDS)/myeloproliferative neoplasm (MPN) for which no current standard of care exists. ACML is characterized by many clinical features (splenomegaly, myeloid predominance in the bone marrow with some dysplastic features but without a differentiation block) and laboratory abnormalities (myeloid proliferation, low leukocyte alkaline phosphate values). A review of the literature suggests that the presence of an abnormal chromosome 21 may predispose to the development of leukemia.

**Case report.** A 41-year-old man with a past medical history of Down syndrome (47, XY, +21) was admitted to the Haematology Unit of Mures County Emergency Hospital with severe anemia, thrombocytopenia and leukocytosis. Following the peripheral smear, bone marrow biopsy and RT-PCR for bcr/abl (negative) indicated atypical chronic myeloid leukemia or myelodysplastic syndrome(MDS)/myeloproliferative neoplasm(MPN) grade III. The substitution treatment was established and the condition of the patient has evolved unfavorably with bronchopneumonia, respiratory failure, diffuse micropapous rash and Clostridium colitis. Due to chromosomal abnormality the cytostatic treatment is difficult to administer. The RT-PCR for JAK2, cMPL, CALR was negative. The final diagnosis falls as a myeloid neoplasia associated with Down syndrome with blasts lower than 20% at the medullary level, but in terms of WHO classification, the blastic percentage is not relevant. Therefore, the treatment chosen was mild cyto-reduction (ARA-C) and substitution depending on tolerance, but even with the correctly administered treatment the patient died after ten months.

**Conclusions.** In conclusion, atypical chronic myeloid leukemia is a rare disease and the association with chromosomal abnormalities and the lack of standards of care is a challenge in treating these patients and poor results should be expected.

**Key words:** Down syndrome, myeloid proliferation

### **34. MYOCLONUS-DYSTONIA MASQUERADING AS WILSON**

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**Background.** Myoclonus-dystonia is a movement disorder that typically affects the neck, torso, and arms. Individuals with this condition experience quick, involuntary muscle jerks or twitches (myoclonus). About half of individuals with myoclonus-dystonia develop dystonia, which is involuntary tensing of various muscles that causes unusual positioning. In myoclonus-dystonia, dystonia often affects one or both hands, causing writer's cramp, or the neck, causing the head to turn (torticollis).

**Case report.** A 26-year-old man consulted his doctor because of involuntary movement of the eyeball and involuntary muscular contractions on the left side of the body. It progressed to involuntary movement of the neck (torticollis) and left arm. Postural tremor is also present in the left arm. The laboratory results showed slightly diminished ceruloplasmin enzyme and blood copper, but the urine copper was three times higher than normal. The patient has been suspected of Wilson's disease but the genetic test came out negative and treatment with cuprinil has been ineffective. The patient also tried taking Isicom (levodopa), Romparkin (central anticholinergic), Haloperidol (neuroleptic) with no benefit. In 2014 he suffered a surgery for herniated disc C5-C6 with no symptom improvement. The cerebral MRI and electromyography has shown no significant changes. The Wilson disease diagnosis can be excluded, but to confirm Myoclonus dystonia, it's needed to make another genetic molecular testing for SGCE. This gene translates a transmembrane protein in the dystrophin associated glycoprotein complex found in skeletal muscle and neurons. If the test is positive, the most effective treatment would be a surgical intervention of Deep Brain Stimulation (DBS) in internal globus pallidus and the central intermediate nucleus of the thalamus, which can cure both the myoclonus and dystonia.

**Conclusions.** This case illustrates the difficulty of assigning a clear diagnosis regarding dystonia and the complexity of etiologies. Nonetheless, a correct diagnosis and treatment can improve the patient's life quality substantially.

**Key words:** myoclonic-dystonia, torticollis, Wilson's disease, DBS

### **35. SPONTANEOUS PNEUMOTHORAX: CONGENITAL CYSTIC ADENOMATOID MALFORMATION OF THE LUNG**

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**Background.** Congenital cystic adenomatoid malformation (CCAM) is a rare developmental abnormality of the lung with an incidence of 1 in 25,000 to 1 in 35,000 pregnancies and represents 25% of congenital lung malformations and 95% of congenital lung lesions, males and females being equally affected. It is characterized by multicystic mass arising in the lung parenchyma from abnormal proliferation of the immature terminal respiratory bronchioles. The clinical spectrum is wide and ranges from silent incidental lesions to severe congenital respiratory distress or stillbirths. The diagnosis of CCAM can be made in utero by prenatal ultrasonography and postnatally by imaging radiography and CT. We report a case of a CCAM, which provoked spontaneous pneumothorax.

**Case report.** Eight month old patient was delivered to the Emergency Department at Institution of Mother and Child with pneumonia and left spontaneous pneumothorax. From the anamnesis, after birth was discovered CCAM after which the patient took a conservative treatment. On examination the patient was agitated, presented acrocyanosis, the general condition of the patient was severe. Chest X-ray showed a large left-sided pneumothorax with mediastinal shift to right and air-containing cystic area of left lower lobe. Pneumothorax was drained immediately, drain tube was seen through left 5th intercostal space. CT scan control of the chest showed expanded left lung with multiple cystic lesion in the lower lobe. After pre-operative preparation lower left

lobectomy was performed. According classification by Stocker (1977), our patient had CCAM, tip I.

**Conclusions.** Long term outcome is good in surgically managed asymptomatic patients with some studies showing only slight decrease in lung volume. Congenital cystic adenomatoid malformation of lung can cause severe respiratory distress but early diagnosis and surgical intervention can improve the condition and prevent death due to respiratory failure. The potential postnatal complications of CCAM include spontaneous pneumothorax, haemopneumothorax and pyopneumothorax, increased likelihood of malignancies such as bronchoalveolar carcinoma.

**Key words:** congenital cystic adenomatoid malformation, diagnosis, pneumothorax

## DEPARTMENT OF ANESTHESIOLOGY AND INTENSIVE CARE no.2

### 36. ANESTHETIC AND INTENSIVE CARE MANAGEMENT IN A TRANSORAL SURGICAL APPROACH OF A PATIENT WITH ATLANTOAXIAL DISLOCATION

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**Background.** Transoral approach is an advanced neurosurgical technique in the treatment of atlantoaxial dislocation with spinal cord compression. Good cooperation between the surgical and the anesthetic teams during the treatment of this pathology plays a key role in achieving a positive result.

**Case report.** Child M, 7 years old, presented with dyspnea at rest, pain in the cervical region, lower limbs, headaches, upper limbs plegia, lower limbs paresis. Diagnosis: Osteoblastic/lithic process of C1 - C2 vertebrae with C2 fracture, with anterior and left paravertebral solid conglomerate, stenosis of the magnum foramen, compression of the medulla oblongata, signs of poststenotic myelopathy. The patient had a BMI of 16.5, severe spastic tetraplegia with an upper limb accent, cervical myelopathy and moderate hypercapnic respiratory failure, a positive bilateral Babinski sign and bilateral plantar clonus. The decision of performing a medullary decompression with spinal stabilization was taken. The monitored values were those of patient's: BP (invasive), CVP, HR, Ps, SpO<sub>2</sub>, diuresis, ABB, ionogram, coagulogram, and the results of neuromonitoring. Ist stage of the surgery was the occipito-cervical internal segmental fixation of C0-C1-C3-C4, with open C1-C2 distension, laminectomy and TIVA (14 hours). A volume of 2400 ml of blood was lost. The IInd stage of the surgery was performed after 12 days, and consisted of C1 and C2 corpectomy, with transoral cranio-cervical prosthesis and TIVA (12 hours). The patient was discharged after 21 days from the 2nd surgery.

**Conclusions.** An acute respiratory failure developed as a result of the postoperative polyneuropathy (the right hemithorax did not participate in the respiratory act, the left one showed only low amplitude trips). The ventilator weaning was difficult and was successful only after tracheostomy was installed and only when a combination of cholinolytic and anticholinesterasic therapies was used.

**Key words:** atlantoaxial dislocation, case report

## INTERNAL MEDICINE I

### ENDOCRINOLOGY

### 37. ARTERIAL HYPERTENSION AT THE PATIENTS WITH DIABETES

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**Introduction.** Arterial hypertension within diabetes is an interdisciplinary subject of interest for cardiology and endocrinology. This topic is of major importance, taking into account the number of diabetic patients in association with hypertension is progressively increasing, and this worsens the microvascular and macrovascular complications outcomes, and increases the mortality rates.

**Aim of the study.** Study of the frequency of high blood pressure of people with type 2 diabetes, the risk factors for developing it, and the impact of hypertension on diabetes complications.

**Materials and methods.** The study sample included 120 patients with type 2 diabetes treated in the Endocrinology section of the Republican Clinical Hospital during 2017. We assessed tension values, body mass index, and the stress level in all patients using a questionnaire. The examination quotient was divided into groups depending on the presence or absence of hypertension (HT).

**Results.** Out of the total number of patients 47.5 % were women aged between 39-70, the average age being 56.05 years, and 52.5 % men aged between 39-73 with average age of 54.76 years. The average values for SBP were 146.75 mmHg, and 89mmHg for DBP. Hypertension was determined in 75% of patients, 25% being normotensive. The anamnestic data revealed that in 45% of the HT patients, the diagnosis of HT preceded that of diabetes; in 23% HT was diagnosed concomitantly with diabetes and in 32% HT occurred during the course of diabetes. According to the HT classification we determined that 57% had first degree HT; 30% - second degree HT, and 23% - third grade HT. In the non-HT group 73% patients were non-obese (normoponderal and overweight), 27% were obese, while in the HT group 42% were non-obese patients, and 58% - obese. There is a statistically significant correlation between BMI and HT ( $p < 0.05$ ). By analysing the data, we noted that neuropathy was present in 100% patients with HT and 93.33% normotensives; retinopathy - in 30% of the HT group, and 20% in the normotensive group; cardiopathy in 33.33% with HT, and in 23.33% normotensives; nephropathy in 6.42% with HT, and in 4.44% normotensives. The questionnaire compared the level of stress between normotensives and HT, and determined that 34% nonHT patients had a medium stress level, 23% high stress levels, and 8% an exaggerated stress level. Out of the HT patients 66% had a medium stress level, 77% a high stress level, and 82% an exaggerated stress level.

**Conclusions.** Our results confirmed the results of existing research data regarding the high incidence of hypertension in patients with type 2 diabetes. Obesity has a major negative impact on the onset and evolution of hypertension. Most complications have been observed in HT patients, and therefore we can not state what was the negative impact of hypertension on diabetes complications. Prevention of stress situations has a beneficial effect on blood pressure.

**Key words:** hypertension, diabetes, risk factors, complications.

### 38. INDICATORS OF IMMUNE INFLAMMATION IN PATIENTS WITH DIABETIC NEPHROPATHY AND ASSOCIATED OBESITY

Author: **Nitish Gupta**

Scientific advisers: M.S. Berezova, T.O. Bezruk, K.A. Chimpoy, S.O. Akentiev  
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**Introduction.** The pathogenesis of diabetes type II and obesity is based on a mix of genetic factors, disorders of the immune balance and lifestyle factors. Combination of this pathological processes increases the risk of vascular complications and becomes a significant social and economic problem of mankind. This negative trend requires a detailed examination of all possible causes of chronic inflammation, which is one of the key factors in kidney failure progression.

**Aim of the study.** To evaluate the indicators: interleukin-1(IL-1), interleukin-6(IL-6), and transforming growth factor- $\beta$ 1(TGF  $\beta$ 1) in patients with diabetic nephropathy(DN) and obesity.

**Materials and methods.** For the study 43 patients with diabetes type II were selected, aged between 41 - 63 years, with at least 10 years duration of the disease. Glomerular filtration rate (GFR) in all patients was not less than 90 ml/min. All patients were divided into two groups: group 1 included patients with DN stage III without concomitant obesity (22 people), the 2nd group included patients with DN stage III and I degree obesity (21 people). The control group consisted of 22 healthy subjects. Exclusion criteria: courses of antibiotic therapy of any duration for the last 4 weeks, cancer. In addition to general clinical methods of examination, all patients underwent determination of IL-1, IL-6 and TGF  $\beta$ 1 levels.

**Results.** Analysis of clinical and laboratory parameters examined patients showed increasing levels of IL-1, IL-6 and TGF  $\beta$ 1 compared with those parameters of healthy subjects( $p < 0,05$ ). Levels of proinflammatory cytokines were higher in patients with concomitant obesity.

**Conclusions.** The analysis of clinical and laboratory parameters revealed the presence of an imbalance in immunogram in obese and non-obese patients with chronic kidney disease. However, the changes in patients with II degree obesity were more significant. In this same group the patients showed a more pronounced impairment of renal function, indicating a more severe course of disease in obese patients. It means that this variant of the disease is more unfavorable.

**Key words:** diabetes, nephropathy, obesity, inflammation markers

### 39. OBESITY AND RENAL CELL CANCER

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**Introduction.** Renal cell carcinoma(RCC) represents approximately 2-3% of all malignancies with variations in regional incidence. Over the last two decades the incidence of RCC increased by about 2%, both worldwide and in Republic of Moldova. Obesity is one of the well-established risk factors for RCC. Obesity has also been increasing throughout the world. The increasing prevalence of obesity might therefore, at least partially, explain the increasing incidence of renal cell cancer.

**Aim of the study.** This study was undertaken in order to assess whether obesity carries higher risk for renal cell cancer.

**Materials and methods.** This study included 734 patients, 438 (59.7%) males and 296 (40.3%) females, with histopathologically confirmed renal cell carcinoma, who were treated between 2013 and 2015 in the Department of Urology of the Oncology Institute of the Republic of Moldova. Diagnosis of obesity was confirmed by the World Health Organization standard recommended method by using body mass index (BMI) scale. Variables examined also included age and sex. BMI was investigated by using established categories for normal weight ( $< 25$  kg/m<sup>2</sup>), overweight (25-30 kg/m<sup>2</sup>), and obese ( $\geq 30$  kg/m<sup>2</sup>).



**Results.** The peak incidence of RCC was at 63 years. There was a 1.5:1 male predominance. The study found an increased risk of RCC associated with overweight and obesity among both male and female adults: BMI <25 kg/m<sup>2</sup> - 38%; BMI 25-30 kg/m<sup>2</sup> - 30%; BMI ≥30 kg/m<sup>2</sup> - 33%. The rate of obesity was slightly higher in women than men (P < 0.005).

**Conclusions.** These findings indicate that overweight and obesity was positively associated with increased risk of renal cell cancer, equally strongly among both males and females.

**Key words:** obesity, BMI, renal cell cancer.

#### **40. THE CLINICAL AND PARACLINICAL PROFILE OF PATIENTS WITH DISTAL SYMMETRIC POLYNEUROPATHY**

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**Introduction.** Diabetes mellitus (DM) is a chronic metabolic disorder that leads to a variety of complications. The most common is diabetic polyneuropathy, particularly distal symmetric polyneuropathy (DSP), affecting more than 50 % of patients. It is a significant risk factor for occurrence of foot ulcers and is the leading cause of lower limb amputations. Besides, it is linked with a decreased quality of life, both physical and mental.

**Aim of the study.** To assess the clinical features associated with the presence and severity of peripheral diabetic polyneuropathy.

**Materials and methods.** The study included 90 randomly selected patients hospitalized in the Endocrinology department, in a municipal clinic in Chisinau, Moldova. Inclusion criteria were presence of DM type I or type II and age >18 years. The clinical history was documented and a directed clinical examination was performed. The presence and severity of DSP was assessed using Toronto Score.

**Results.** In our study, according to Toronto Score, 16 patients had no DSP, 22 - incipient DSP, 27 - moderate DSP and 25 - severe DSP. The average duration of diabetes was 5.8 for no DSP group, 9 for incipient DSP group, 13.6 for moderate DSP group and 17.5 for severe DSP group (P<0.01). In the no- and incipient DSP groups combined, there were more type I patients (26%) than in the moderate and severe DSP group (8%). The prevalence of obesity was high, 43 patients of 90 had body mass index (BMI) > 30. Besides, the average BMI was found to be higher in those with moderate and severe DSP than in those with no or incipient DSP, 31.9 versus 27.8 (P<0.01). A history of arterial hypertension was present in 80% of all cases, but only in 63% for the no- and incipient DSP group versus 93% for the moderate and severe DSP group. A higher prevalence of hypertension and obesity in those with a more severe DSP can be partially explained by the predominance of type II DM. Hyperlipidemia was detected in 47% of all patients but there was no significant difference between the samples. Retinopathy was found in 50% of patients with no- or incipient DSP and in 67% of those with moderate and severe DSP but the P value was too high. The symptoms reported by patients were weakness (80%), cramps (71%), pain (62%), tingling (52%) and numbness (36%).

**Conclusions.** The study reveals that DSP is very common (82 %) in patients with DM and its severity is associated with diabetes duration and higher BMI. The comorbidities of DSP such as hypertension, retinopathy and hyperlipidemia were also frequent. The screening for diabetic polyneuropathy helps define the clinical profile of the patient and should be started at the moment of diagnosis of DM, thus avoiding often disabling complications.

**Key words:** diabetes mellitus, distal symmetric polyneuropathy.

#### **DEPARTMENT OF INTERNAL MEDICINE, CARDIOLOGY**

#### **41. RISK PREDICTION AFTER PRIMARY PERCUTANEOUS INTERVENTION IN PATIENTS WITH NON-ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION ACCORDING TO LEFT VENTRICULAR EJECTION FRACTION**

Authors: **Ilie Ceban**, Artiom Surev, Cristina Gheorghiu, Andrei Grib

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**Introduction.** Primary percutaneous coronary intervention (pPCI) is the best-known therapy for patients enduring non-ST-segment elevation myocardial infarction (NSTEMI). However, the risk prediction in these patients remains problematic. Hence, reduced left ventricular ejection fraction (LVEF) is the best available predictor of sudden cardiac death (SCD) in survivors of myocardial infarction (MI).

**Aim of the study.** To evaluate the possible association between demographical, clinical and paraclinical characteristics of a group of patients with NSTEMI who undergo pPCI with LVEF.

**Materials and methods.** This study included 50 patients with NSTEMI, that were categorized according to in-hospital LVEF measurement into two groups, LVEF $\geq$ 45% (n=32) and LVEF<45% (n=18). We compared baseline characteristics and angiographic results of patients who underwent primary percutaneous coronary intervention stratified by LVEF.

**Results.** The mean age of study population was 57.9 years-old in first group and 59.5 years-old in the second one, and 84% of all patients were male. There were no significant differences (p>0.05) between two groups of LVEF concerning coronary risk factors as hypertension (68.8% vs 50%), obesity (18.8% vs 22.2%), dyslipidemia (46.9% vs 27.8%), diabetes mellitus (28.1% vs 27.8%) and smoking history (37.5% vs 38.9%). The most infarct related arteries (IRA) in patients with LVEF $\geq$ 45% were the second segment of left anterior descending coronary artery (LAD II; 21.9%) and the second segment of right coronary artery (RCA II; 21.9%), while in patients with LVEF<45%, culprit lesions were found on LAD I and LAD II (33.3%). In addition, door-to-balloon time was less than 72h for 62% of patients (group A) and more than 72h for 38% of them (group B). No significant difference (p>0.05) between groups according to LVEF $\geq$ 45% or <45% was revealed (56.3% vs 72.2% in group A and 43.8% vs 28.8% in group B).

**Conclusions.** The mean age of the overall study population was lower (<60 years) than previous studies run in this area (>60 years). There were no significant differences for baseline characteristics and angiographic results between two groups of patients stratified by LVEF in patients with NSTEMI who undergo pPCI, included in this study. LVEF is an independent predictor of all-cause clinical outcomes in patients who have undergone pPCI.

**Key words:** pPCI, NSTEMI, LVEF

#### **42. PARTICULARITIES OF ATRIAL SEPTAL DEFECT IN ADULTS TREATED CONSERVATIVELY AND SURGICALLY**

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**Introduction.** Atrial septal defect (ASD) represents 13% of congenital heart disease (CHD), with a prevalence of 2 cases per 1000 live births. ASD is often asymptomatic until adulthood, with potential presenting complications: arrhythmias, paradoxical embolization, right atrial (RA) dilatation and right ventricle (RV) dilatation, tricuspid regurgitation, right heart failure and

pulmonary hypertension, which can become irreversible and lead to the development of right-to-left shunting (Eisenmenger syndrome).

**Aim of the study.** To study the patients with atrial septal defect treated conservatively and surgically.

**Materials and methods.** The study included 98 patients with ASD, women – 66, men – 44, mean age –  $45 \pm 4$  years, that were examined clinically and paraclinically. The patients with ASD were divided into two groups: group I – surgically treated (57.1%), group II – treated conservatively (42.9%).

**Results.** In 4.2% of cases, ASD was accidentally diagnosed during medical examinations. Clinically, the patients in groups I and II had the following symptoms: dyspnea (35.7% vs 90.5%), palpitations (30.4% vs 64.3%), fatigability (42.9% vs 61.9%), cardialgias (41.1% vs 54.7%), peripheral edema (5.4% vs 11.9%) and haemoptysis in 0% vs 2.4% cases. Echocardiographically, in the patients from group I pre- and postoperative sizes of the RA were from 28 mm to 95 mm (average of  $58 \pm 2$  mm) vs 21 - 62 mm (average of  $42 \pm 4$  mm) and in group II – from 34 mm to 72 mm in average being  $49 \pm 8$  mm. The size of the RV in both groups also revealed significant differences: in group I preoperative: 12 - 60 mm (average of  $35 \pm 9$ ), postoperatively: 15 - 42 mm (average of 28.6 mm) and in group II from 22 - 47 mm (average of  $32 \pm 6$  mm). The pressure in the pulmonary artery in group I, preoperatively was 30 - 85 mmHg (average of 45.7 mmHg), postoperatively: 28 - 65 mmHg (average of 36 mmHg), and in group II: 24 - 75 mmHg with an average of  $42 \pm 4$  mmHg. Complications in patients with ASD pre- and postoperative: heart failure 91.1% vs 15.9%, pulmonary hypertension 92.8% vs 19.6%, arrhythmias 23.2% vs 5.4%, pneumonia 3,6% vs 25%. Medical treatment in patients with ASD operated and not operated consisted from diuretics (23.2% vs 30.9%), beta blockers (12.5% vs 19%), ACE inhibitors (10.7% vs 21.4%), digoxin (0 vs 28.6%) and anticoagulants (5.4% vs 30.9%).

**Conclusions.** Patients with surgically treated ASD showed improvement in clinical manifestations, reduced complications, improved echocardiographical indices, and a decrease in the number of administrated doses comparative to the patients treated conservatively.

**Key words:** atrial septal defect, complications, treatment.

### **43. ENDOTHELIAL DYSFUNCTION AND RISK OF CARDIOVASCULAR EVENTS IN WOMEN WITH AUTOIMMUNE SYSTEMIC DISEASES**

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Scientific adviser: Snejana Vetrila, MD, PhD, Associate Professor, Department of Internal Medicine, Cardiology

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**Introduction.** Cardiovascular events increase the mortality rate among women with autoimmune systemic diseases. Chronic inflammation is supposed to be responsible for the accelerated development of atherosclerosis. Endothelial dysfunction(ED) has a primordial role in the pathogenesis and clinical evolution of cardiovascular disease.

**Aim of the study.** To assess the relationship between endothelial dysfunction and the risk of cardiovascular events in women with autoimmune systemic diseases.

**Materials and methods.** Study group included 20 women with autoimmune systemic diseases, established according criteria of diagnosis, divided into 2 subgroups - 9 with endothelial dysfunction and 11 without endothelial dysfunction assessed by flow mediated dilatation(FMD) of brachial artery using Doppler method. Also we analyzed traditional cardiovascular risk factors - hypertension, dyslipidemia, diabetes mellitus, body mass index(BMI), smoking and family history. C-reactive protein(CRP), athero-plasmatic index(API), ankle-brachial index(ABI) and the intima-media thickness(TIM) of the carotid artery were determined.

**Results.** The patients mean age was  $50.7 \pm 0.05$  years, disease duration -  $150 \pm 0.05(2-504)$  months. Endothelial dysfunction was found in 9(45.0%) cases from the general group. Hypertension was found in 6(67.0%) and 8(73.0%), dyslipidemia 8(87.0%) and 10(90.0%), diabetes mellitus 3(33.0%) and 3(27.0%), smoking 1 (11.0%) and 1(9.0%), family history 2 (22.0%) and 4(36.0%) in the group with and without endothelial dysfunction, respectively. BMI deviation was more relevant in the group without endothelial dysfunction - 8(72.7%) vs 4 (44.4%) in patients with endothelial dysfunction. The level of CRP in women with dysfunctional endothelium was noted in 10(91.0%) cases vs 8(89.0%). Pathological API was present in 5 (55.5%) of women with ED vs 4(36.3%) in subgroup without endothelial dysfunction. Analyzing the values obtained by ABI and TIM, we observed the predominance of abnormal data in the endothelial dysfunction subgroup.

**Conclusions.** Endothelial dysfunction detected by flow-mediated dilatation using Doppler method suggests the high risk of cardiovascular events in patients with autoimmune systemic diseases.

**Key words:** endothelial dysfunction, cardiovascular events, women, systemic autoimmune diseases.

#### **44. SIGNIFICANCE OF SLEEP APNEA SYNDROME IN WORSENING OF CARDIAC PATHOLOGY**

Authors: **Sabina Racila-Iatco, Elena Samohvalov, Andrei Grib, Carina Rusanovschi, Eugen Grama**

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**Introduction.** Sleep apnea (SA) is a major public health problem, with 5% prevalence of the active population aged between 30 and 60 years - 2% females and 4% males with severe cardiovascular, pulmonary, neurological and metabolic consequences. SA is found in 30% of hypertensive persons, in 19-20% of patients with myocardial infarction history; in 18 - 42% cases patients have cardiac arrhythmias: sleep association with marked sinus arrhythmias (93%), extreme sinus bradycardias (40%), asistolias (33%), atrioventricular blocks (13%), ventricular arrhythmias (66%) and TV (13%), and ventricular extrasystoles (40%). Approximately 80% of patients with obstructive sleep apnea syndrome are overweight or obese.

**Aim of the study.** Study of cardiac pathology in patients with sleep apnea.

**Materials and methods.** In the study, 39 patients with sleep apnea were admitted to the Cardiology Institute in January-December 2017 with various cardiac pathologies, 71.8% men, 28.2% women, the ratio being 2.5: 1, with an average age  $53 \pm 4$  years.

**Results.** Predominant risk factors in SA patients were: smoking (53.8%), obesity (74.4%), dyslipidemia (43.6%), diabetes mellitus (17.9%). Associated SA cardiac pathologies were meat in 82.6%, angina pectoris (AP) in 64.1%, MI (23.1%), stroke (7.7%), heart failure(NYHA) of different degree (74.4%), pulmonary hypertension (38.5%) and left ventricular hypertrophy (69.2%). Common ECG complications: arrhythmias in 100% (atrial fibrillation (33.3%), supraventricular extrasistoles (41%), ventricular extrasistoles (33.3%) and cardiac blocks in 10.3%. Clinical manifestations were present by: snoring (94.9%), nicturia (61.5%), sleep fragmentation (59.0%), sleep stifling (43.6%), and daytime somnolence (33.3), and morning headache (28.2%), memory impairment in 20.5%. According to the SA classification according to the apnea-hipopnee index was: mild in 20.5%, medium in 23.1% and severe in 46.2%.

**Conclusions.** In patients with sleep apnea, worsening of pre-existing cardiovascular pathologies with the development of major cardiac events, rhythm disturbances and conductivity which negatively influenced the progression and prognosis of these patients was diagnosed.

**Key words:** sleep apnea, cardiac pathologies, major cardiovascular events, arrhythmias, cardiac blocks

#### **45. THYROID FUNCTION AND CHRONIC KIDNEY DISEASE IN HEART FAILURE PATIENTS**

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**Introduction.** In the last years, the global prevalence of the moderate-severe renal dysfunction has gradually increased to an epidemic state. The risk of chronic kidney disease occurrence in heart failure (HF) is not well established, but kidney dysfunction is very often encountered in HF patients and is associated with a poor prognosis. Thyroid hormone, also, has been identified as a risk factor for the heart disease progression and development.

**Aim of the study.** To investigate whether thyroid function is associated with chronic kidney disease in heart failure patients.

**Materials and methods.** This observational cohort study included 25 patients with reduced ejection fraction heart failure CKD. Routine biochemistry, including Cysteine C, thyroid stimulating hormone(TSH) and proteinuria were measured. Glomerular filtration rate (GFR) was estimated by the CKD-EPI CYSTETIN C based formula adjusted for Body Surface Area. We divided patients into two groups according to estimated GFR:  $\geq 60$ ml/min (CKD stages I-II KDOQI); and  $< 60$ ml/min(CKD stages III-V KDOQI).

**Results.** Among 26 adult participants, 15 had moderate-to-severe decrease in  $eGFR < 60$  ml/min with a mean TSH level of  $7.4 \pm 3.28$  UN/ml ( $p < 0.05$ ); Cystetine C of  $1.15 \pm 0.07$  mg/L; mean ejection fraction (EF) of  $43.4 \pm 2.84\%$  level; uric acid level  $446.2 \pm 81.27$  mmol/L; total cholesterol –  $7.95 \pm 3.37$  mmol/L; triglycerides 2.19 mmol/L and 0.12 g/l proteins in urine. 11 subjects had elevated, normal or mild decrease in  $eGFR \geq 60$  ml/min; a mean TSH level of  $2.2 \pm 0.65$  UN/ml ( $p < 0.01$ ); Cystetine C of  $1.74 \pm 0.13$  mg/L; mean ejection fraction(EF) of  $42 \pm 2.77\%$ ; uric acid level  $235.5 \pm 113.5$  mmol/L total cholesterol –  $7.95 \pm 3.37$  mmol/L; triglycerides 2.19 mmol/L, and 0.07 g/l proteins in urine. Compared with participants with an estimated GFR  $\geq 60$  ml/min, those with estimated GFR  $< 60$  ml/min had an increased rate of subclinical primary hypothyroidism, higher levels of uric acid, total cholesterol and triglycerides.

**Conclusions.** Our results suggest that subclinical hypothyroidism is associated not only with heart failure but also with CKD, and may be considered as a novel risk factor of reduced renal function. Further studies are needed to better understand the causal implications of hypothyroidism in CKD patients.

**Key words:** thyroid function; chronic kidney disease; heart failure; glomerular filtration rate

#### **46. THE IMPACT OF STATINS ON THE METABOLISM OF PATIENTS WITH CARDIOVASCULAR DISEASE**

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**Introduction.** Statins are a class of lipid-lowering medications, also known as HMG-CoA reductase inhibitors. They are considered one of the most popular prescribed agents worldwide for treatment of hypercholesterolemia. Statins are effective drugs to reduce cardiovascular events

and mortality secondary to dyslipidemia. Statin therapy is considered as the standard dyslipidemia therapy. Except lipid-lowering effect, it is known that statins have cholesterol-independent effects (pleiotropic effects).

**Aim of the study.** This review was undertaken to investigate the pleiotropic effects of statins on the metabolism of patients with cardiovascular disease.

**Material and methods.** To identify relevant articles, HINARI and ScienceDirect databases were searched using the key-words: „statins”, „pleiotropic effects statins”, „lipophilic statins”, „rosuvastatin”, „atorvastatin”.

**Results.** This study concluded that the pleiotropic effects of statins differ based on lipophilic properties. Hydrophilic statins (rosuvastatin, fluvastatin, pravastatin) are liver specific. Lipophilic statins (atorvastatin, lovastatin, simvastatin) are widely distributed in different tissues and determine a lot of side effects. Statins exhibit numerous pleiotropic effects as inhibition of inflammation response and oxidative stress, modulation of cell proliferation, improvement of endothelium function, suppression of platelet activity, plaque stability, normalization of sympathetic outflow, etc. The multiple pleiotropic effects of statins are due to multiple mechanisms, the most important one being the reduction of circulating isoprenoids and hence inactivation of signaling proteins. These multiple lipid-independent effects of statins are utilised for research in multiple treatment domains.

**Conclusions.** Pleiotropic effects of statins are of major relevance in the treatment of the major cardiovascular conditions and diseases, such as atherosclerosis, acute coronary syndrome, chronic heart failure, postoperative atrial fibrillation and others.

**Key words:** statins, pleiotropic effects, cardiovascular diseases

#### **47. THE EFFECT OF THE METABOLIC SYNDROME ON RIGHT VENTRICULAR DIASTOLIC FUNCTION**

Author: **Ecaterina Sedaia**

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**Introduction.** The importance of right ventricle (RV) structure and function has been always underestimated by physicians in their daily practice. Diastolic function of RV generally represents a complex process and its dysfunction is associated with pressure and volume overload pathologies, primary lung disease, ischemic heart disease, left ventricle dysfunction etc. According to the last studies, metabolic syndrome (MS) also has impact on RV structure and function and represents important marker of cardiovascular risk.

**Aim of the study.** The aim of this study was to examine the impact of MS on RV remodeling and mechanics, especially diastolic function and to determine the most important parameters of MS for right heart remodeling.

**Materials and methods.** The study included 68 subjects: 34 subjects with MS (21 women and 13 men) and 34 controls (17 women and 17 men). There was no statistically important difference in the mean age between the subjects with MS and controls ( $p > 0.05$ ). MS was defined by the presence of  $\geq 3$  IDF, AHA/NHLBI (2009) criteria. All subjects underwent complete two-dimensional echocardiography and laboratory blood tests. We determined the ratio of early and late diastolic tricuspid flow velocities ( $E/A$ ) and the ratio of early diastolic tricuspid and septal tricuspid annuli flow velocity ( $E/e'$ ). Assessment of RV systolic or diastolic function was based on the recommendation of the European Society of Echocardiography 2015. Also anthropometric measures (height, weight, waist circumference) were taken from all the subjects included in the study.

**Results.** Parameters of RV diastolic function indicated the RV diastolic dysfunction in patients with MS (E/A ratio  $1.20 \pm 0.27$  in subjects with MS and  $1.30 \pm 0.33$  in controls,  $p < 0.001$ ; E/e' ratio  $6.50 \pm 1.43$  in subjects with MS and  $5.11 \pm 1.03$  in controls,  $p < 0.001$ ). According to multiple regression analysis systolic blood pressure ( $\beta = 0.105$ ,  $P = 0.022$ ), waist circumference ( $\beta = 0.092$ ,  $P = 0.031$ ), plasma glucose level ( $\beta = 0.088$ ,  $P = 0.043$ ) showed independent association with E/e'.

**Conclusions.** MS plays an important role in RV diastolic dysfunction. The most important parameters that provoke RV remodeling are systolic blood pressure, waist circumference and glucose level, that need special attention of the physicians due to their frequency of occurrence in general population.

**Key words:** metabolic syndrome, right ventricle, diastolic function

#### **48. THE LEVEL OF KNOWLEDGE ABOUT NON-PHARMACOLOGICAL MEASURES OF TREATMENT IN PATIENTS WITH CHRONIC HEART FAILURE**

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**Introduction.** Chronic heart failure (CHF) is considered a worldwide pandemic that requires a complex regimen of drug and non-medical treatment for a lifetime. The European Society of Cardiology Guidelines recommends applying self-care management, patient ductility to reduce morbidity, mortality and to improve quality of life and patients' adherence to treatment.

**Aim of the study.** To study the level of knowledge of patients with chronic heart failure regarding non-pharmacological measures for the elaboration of the education program.

**Materials and methods.** A transverse study that included 20 patients with CHF was conducted. The patients completed a questionnaire that included 5 behavioral considerations in CHF, before and after a schooling program in the study ( $n=10$ ).

**Results.** The group of 20 patients with mean age of  $60.2 \pm 0.05$  (range 30-90) years, included 7 (35%) women and 13 (65%) men. 6 (30%) of the analyzed patients had high-education, 9 (45%) - with middle-education and 5 (25%) patients - with incomplete middle studies. According to the NYHA classification 6 (30%) patients were included in functional class II and 14 (70%) - functional class III (NYHA). Before schooling only 8 (40%) patients responded correctly to 4 from 5 questions while after schooling 20 (100%) patients responded to 4 and 7 (70%) patients correctly answered all 5 questions. An increase in the rate of high-level patients with non-pharmacological measures in the CHF by 30% was observed, also noticed that patients with higher education have a higher level of knowledge compared patients with secondary education.

**Conclusions.** Scheduled training of patients with chronic heart failure significantly increased the level of knowledge about non-pharmacological treatment measures.

**Key words:** heart failure, non-pharmacological measures, level of knowledge.

#### **49. ASSOCIATION OF METABOLIC SYNDROME AND HYPERTENSION WITH LEFT VENTRICULAR GEOMETRY IN CHILDREN**

Authors: **Veronica Esanu, Valeriu Esanu, Natalia Gavriliuc, Lucia Pirtu, Daniela Jumiga**

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**Introduction.** The metabolic syndrome (MS) in association with increased left ventricular myocardial mass (LV Mass), LV myocardial mass index (LVMI), LV hypertrophy (LVH) is an important risk factor for cardiovascular diseases which occur in childhood.

**Aim of the study.** Study of the MS's influence on LV Mass, LVMI and cardiac remodeling in the hypertensive pediatric population.

**Materials and methods.** 60 children aged 10 - 18 years were enrolled in the study. Study group included 22 children with MS, and the control group - 38 children with pre-MS. The diagnosis of MS was established according to the International Diabetes Federation criteria (IDF, 2007). Respondents were examined through transthoracic echocardiography.

**Results.** According to the IDF criteria, MS was confirmed in 36.4%, pre-SM at 63.6%. LV Mass: pre-SM -  $151.4 \pm 56.2$ , score Z -  $0.15 \pm 0.9$ , those with SM -  $167.3 \pm 48.8$ , score Z -  $0.24 \pm 1.3$ . LV Mass > 95th percentile was in  $\approx 20\%$  of the pre-MS group and in  $\approx 45\%$  in patients with MS. LVMI in the control group -  $36.3 \pm 8.4$  vs baseline -  $38.7 \pm 10$ , LVMI > 95th percentile was determined in  $\approx 15\%$  vs  $\approx 35\%$ . Left ventricle posterior wall relative thickness:  $0.39 \pm 0.05$  vs  $0.42 \pm 0.05$ . In the left ventricle: normal shape 55.5% (MS) vs 80.4% (pre-SM), concentric hypertrophy 30.4% vs 5.2% concentric remodeling 8.1% vs 4.7% eccentric hypertrophy - 6% vs 9.7%. Of all MS components, AHT in 60% of cases was associated with LVMM and VS hypertrophy in the working group and 40% in the control group.

**Conclusions.** All of the MS components, AHT was more often associated with LV, LVM index, LV hypertrophy, especially among the boys.

**Key words:** children, metabolic syndrome, hypertension

## 50. EVALUATION OF THE THROMBOEMBOLIC RISK IN PATIENTS WITH ATRIAL FIBRILLATION

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**Introduction.** Atrial fibrillation (AF) is considered to be a new 21st-century epidemic, which by the end of 2060 shall affect an estimated 18 million people. More than 6 million Europeans suffer from AF, while in the United States AF is the cause of hospitalization of more than one third of the patients with heart rhythm disorders.

**Aim of the study.** Identifying the importance of different risk factors in patients with AF in the development of thromboembolic complications, and assessing the efficacy of the CHA<sub>2</sub>DS<sub>2</sub>-VASc score in their prevention.

**Materials and methods.** 100 patients with AF from the *Sfanta Treime* Municipal Hospital, the Neurological Institute and the Institute of Cardiology have been surveyed. 2 groups of interest were obtained: patients with (54) and without history of stroke (46). All clinical and paraclinical collected data has been statistically analyzed and compared between the aforementioned groups.

**Results.** Out of the analyzed 100 patients, 52 were women and 48 men. The mean age was 66.6 years. The mean BMI was 28.2 kg/m<sup>2</sup>. 91% of the patients had congestive heart failure (CHF), 90% suffered from hypertension, 72% of myocardial infarction (MI) and 24% of diabetes (type I/II). Patients had an average CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 5, varying between 2 and 9. Only 52% of the patients were under anticoagulation control. 35 have administered aspirin, 32 – warfarin, 15 – both. Out of the 52 patients who had their INR checked, only 25% had a therapeutic value between 2-3.

In the stroke group, 30 were women, 24 were men. 60.9% out of the patients who had manifest stroke consequences were women. 66.7% of the patients in the same group were older than 65 and 75.9% had a BMI > 25 kg/m<sup>2</sup>. 90.7% presented hypertension, 87% - CHF, 87% - MI, and



only 24,1% suffered from diabetes. CHA2DS2-VASc had a better predictability for scores >5 ( 5 – 60%, 6 – 63.6%, 7- 93.3%, 8 and 9 – both 100%). Only 29 of the patients with a history of stroke received anticoagulant treatment, 13 of which administered only aspirin, while 9 – both aspirin and warfarin. Better INR values were obtained in patients who have administered both aspirin and warfarin in the first group, compared to their separate administration.

**Conclusions.** Female sex was associated with a worse after-stroke evolution. Age and overweight were both independent risk factors for stroke prediction. CHF, MI and hypertension as components of the CHA2DS2-VASc score proved to be important risk factors, compared to diabetes, which did not. CHA2DS2-VASc had a good stroke predictability rates for patients with a score >2. Low anticoagulation coverage and a poor adherence to the anticoagulant treatment in patients with AF were the main causes that led to inappropriate stroke prevention.

**Key words:** atrial fibrillation, stroke, thromboembolism

## 51. PARTICULARITIES OF CLINICAL FEATURES, DIAGNOSIS AND TREATMENT OF HYPERTENSION IN WOMEN

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**Introduction.** Hypertension (HBP) is defined as a blood pressure of over 140/90 mmHg in people aged 18 years or older. The global prevalence of HBP is about 15-37%, rising up to 50% in people older than 60 years old(y/o). According to CINDI study, in RM 30% of the population in between 25 and 64 y/o manifest this disease.

**Aim of the study.** To present the essential differences of clinical features, diagnosis, treatment and evolution of HBP in women.

**Materials and methods.** The study involved 214 hypertensive patients – 118 women and 96 men with the average age of  $66 \pm 4$  y/o.

**Results.** Our study showed that the HBP incidence is in accordance to gender and age; as such, before the age of 65 HBP is more common in men 1:2.29; in the interval of 55 and 65 y/o the ratio was 1:1, but after 65 y/o it is more frequent in women 1.46:1. Cardiovascular (CV) risk factors were predominant in women comparing to men and are represented by: dyslipidemia 72.9% vs 50%; obesity 54.3% vs 35.5%; sedentarism 84.7% vs 52.1% and hyperuricemia 22.1% vs 16.7 %. According to the severity of the disease, most of the women had HBP of 3rd grade 67.8% vs 60.4% associated with very high CV risk – 79.6% vs 70.8%. Complications of HBP were more common in men then women and were expressed by: hypertrophic cardiopathy 31.3% vs 28.8%; acute myocardial infarction (AMI) 10.3% vs 8.4%; stroke 10.3% vs 7.4%; while heart failure (96,6% vs 91,7%) and ischemic heart disease (86,5% vs 79.2%) were more frequent in women. Biochemical findings showed that hyperglycemia was prevalent in men 37.5% vs 28.8%, but changes in the lipid profile were more common in women: high levels of serum LDL (> 3 mmol/l) 47.5% vs 35.4%; TG (> 1,7 mmol/l) 38.9% vs 22.9%; cholesterol 56.3% vs 55.9% and low levels of serum HDL seric (<1,0 mmol/l) 47.5% vs 35.4%. ECG revealed that hypertrophy of left ventricle was more manifest in women 45.8% vs 31.9%. Echo-CG results showed no significant differences associated with gender. In treatment of HBP both women and men used a combined therapy of  $\geq 2$  drugs 86.5% (women) vs 85.4% (men). While the most popular combination of drugs in women were a beta-blocker(BB) + ACE inhibitor(ACEI) + diuretics (DT) 43.1%, in men it was represented by ACEI + DT 21,9%.

**Conclusions.** HBP is a major risk factor of cardiovascular disease in women. Age has a decisive role in the debut and progression of the disease, thus, it usually appears in women older than 65 y/o, in post-menopause caused by hypoestrogenemia and hyperproduction of pituitary hormones,

risk factors being obesity and sedentarism. The incidence of complications such as AMI and stroke in this interval of age is equal for both men and women, while pre-menopause women are less affected due to the protective role of estrogen.

**Key words:** hypertension, dyslipidemia, myocardial infarction, stroke, hypoestrogenemia.

## **52. THE IMPACT OF ORAL BACTERIEMIA IN DEVELOPMENT OF INFECTIVE ENDOCARDITIS**

Authors: **Legcun Tavifa, Tamara Calistru, Andrei Calistru, Iulea Calistru, Andrei Grib**

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**Introduction.** Infective endocarditis (IE) is a severe disease. The incidence in patients after dental treatment is 1 to 533.9 treated persons, predominant etiological agents in this case being streptococcus, mainly *Streptococcus viridans*.

**Aim of the study.** To evaluate the particularities of "oral" endocarditis.

**Materials and methods.** 287 patients with defined IE, mean age -  $50 \pm 0.3$  years, were examined clinically and paraclinically. Patients with IE were divided into 2 groups, group I - IE caused by oro-dental infection IORD + (45.7%) and group II IORD- (54.4%).

**Results.** Patients with IE with IORD + had a history of dental extractions in 31.3%, gingivitis - 26.7%, caries - 17.6%, periodontitis - 1.5%, tonsillitis - 9.9%, and poor oral hygiene in 37.2%. The clinical manifestations that predominated in patients from group I were the toxico-infectious syndrome in 95% and in 28% the musculoskeletal syndrome: myalgia (29%), arthralgia (26%) and arthritis - 7.6 (%). Positive haemocultures in group I - 35.9% vs 30.1% in group II. In group I prevailed *Streptococcus viridans* in 10.7% and *Staphylococcus aureus* in 8.4%, in group II - *Staphylococcus* in 18.4% and Gram negative bacilli in 4.6%. The echocardiographic examination diagnosed vegetations in 74.8% of cases in group I versus 68.2% in group II. Complications in group I were: pneumonia 35.1%, and nephritis 4.6%. The patients from group I received more often Amoxicillin 17.6% and Gentamicin 50.4%, but those in group II were treated with Cephalosporin 41% and Vancomycin 21.8%.

**Conclusions.** Infective endocarditis of oro-dental etiology was more benign, with a predominant toxico-infectious and musculoskeletal syndrome; the main pathogenic agent was *Streptococcus viridans*, the most frequent complications being pneumonia and nephritis with less aggressive treatment than in those without oro-dental pathology.

**Key words:** infective endocarditis, oro-dental pathology, positive haemocultures

## **53. THE IMPACT OF ARTERIAL HYPERTENSION ON AORTA GEOMETRY AFTER SURGICAL REPAIR OF AORTA COARCTATION IN CHILDREN**

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**Introduction.** Arterial hypertension is one of the worst predictors after surgical repair of aortic coarctation (ACo). Knowing the likelihood of hypertension development depending on age of primary repair is useful for long-term surveillance and counseling.

**Aim of the study.** Studying the impact of arterial hypertension (AH) on aorta geometry after surgical repair of ACo in children.

**Materials and methods.** The research included 49 children with ACo operated with different remaining pressure gradients. Respondents were examined by transthoracic echocardiography. Outpatient blood pressure monitoring was performed with the TA Holter for 24 hours. All the children included in the research were computed for the Z score for aortic dilatation.

**Results.** In 34.69% of cases with children with AC operated and with a pre-existing gradient, AH values at 24h > 90 percentile monitoring, 65.3% TA ≤ 75 percentile (AH based on age and height). Percentage of time was over. 30.61% of respondents had aortic diameters increased in height and body surface area (Z score).

**Conclusions.** ACo is part of congenital aortic disease (CAD), often debilitating, resulting in AH and with a poor progression. Dilatation of the aorta is a severe and irreversible complication within ACo, in combination with HTA.

**Key words:** congenital, aorticopathies, aortic coarctation, arterial hypertension, children.

#### **54. CARDIOVASCULAR RISK ASSESSMENT IN PATIENTS WITH RHEUMATOID ARTHRITIS**

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Scientific adviser: Lucia Mazur-Nicorici, MD, Associate professor, Liviu Grib, MD, PhD, Professor, Department of Internal Medicine, Cardiology

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**Introduction.** Several studies have highlighted a significant association between rheumatoid arthritis (RA) and accelerated atherosclerosis. It has been found that high disease activity and the presence of cardiovascular risk factors play an important role in these patients.

**Aim of the study.** Evaluation of patients with rheumatoid arthritis in terms of traditional and non-traditional cardiovascular risk factors and analysis of established cardiovascular diseases.

**Materials and methods.** A prospective cohort study was performed, which included 52 patients (mean age 54.1 ± 13.3 years), male/female ratio 1:3.3. General evaluation assume assessment of the CV risk factors, and the disease activity was assessed according to the DAS-28 index. The mSCORE diagram was used to assess CV risk in patients with rheumatoid arthritis. Statistically, the material was processed using the t-student program, MedCalc.

**Results.** The presence of CV risk factors was reported in 51(98.1%) of 52 patients included in the study, predominantly females - 40(76.9%), dyslipidemia - 35(67.3%) patients, HT at 31 (59.6%), hypodynamia - 29(55.7%), family history of CV diseases - 16(30.7%), age(M > 55, F > 65) – 15(28.8%), overweight - 17(32.7%) patients, obesity I-degree - 11(21.1%), to be noted 24 (46.1%) normal weight, DM - 8(15.4%), smoking - 6 patients(11.5%). The DAS-28 disease activity score was high at 36(69.2%), moderate - 12(23.1%) and decreased in 4(7.7%) patients. By calculating CV risk using mSCORE chart we obtained the following results: high risk of cardiovascular events in 10 years in 11(21.1%) patients, low risk in 41(78.84%) patients.

**Conclusions.** Optimal management of CV risk factors remains an important objective in evaluating the patient with RA. High activity should be included among the risk factors for cardiovascular disease.

**Key words:** rheumatoid arthritis, CV risk factors, inflammation, atherosclerosis.

#### **55. INFECTIVE ENDOCARDITIS IN PATIENTS WITH CONGENITAL HEART DISEASE**

Authors: **Tamara Calistru, Andrei Calistru, Iulia Calistru, Tavifa Legcun**

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**Introduction.** The congenital heart disease (CHD) has become a major risk factor for infective endocarditis (IE) due to a large number of children with CHD that survive until adulthood. The incidence of IE in children with CHD is reported to be approximately 4.1 cases per 10000 persons/year, but in adults – 11 per 10000 patients/year with a marked variation between different types of CHD. The progress in diagnostic and surgical field, as well as the use of intracardiac devices and prosthetic materials increases the risk of associated infections and developing IE. As for causative pathogens, streptococci species predominates over the staphylococci species.

**Aim of the study.** Evaluation of patients with infective endocarditis due to congenital heart disease.

**Materials and methods.** The study included 262 patients with definite IE (mean age 51±7 years) that have been examined after clinical and paraclinical parameters. The patients with IE were divided into two groups: I – IE caused by CHD (17.2%), group II – IE due to acquired heart disease (AHD) in 82.8%.

**Results.** The diagnosis of IE was established earlier in patients with CHD – up to 5 months, while in patients with AHD – up to 12 months. Hemocultures were positive in 44.4% vs 30.9%, streptococci predominating in group I (22.2%) and staphylococci in group II (15.6%). Clinically, the manifestations of the toxi-infectious syndrome (fever, chills, sweating, fatigue) prevailed in both groups – 93.3 % vs 91.7% and heart failure (dyspnoea, cough, palpitations) in 71.1% vs 89.4 %. Echocardiographic vegetations have been diagnosed in 77.8% vs 68.2%, followed by chordae breakages (26.7% vs 18%) and pericardial effusion (15.6% vs 19%). Registered complications – neurological – 15.6% vs 14.7%, renal – 15.6% vs 9.7%, while embolic episodes were reported less often – 13.3% vs. 17.5%. The overall outcome in patients with CHD is more favorable, with a 100% survival rate, compared to 93.5% in group II.

**Conclusions.** IE in patients with CHD diagnosed earlier, has a more benign evolution. Streptococci were the causative agents in a greater percentage, such complications as toxic shock syndrome and heart failure prevailing. Echocardiographically vegetations, chordae breakage and pericardial effusion were detracted, while such complications like the neurological and renal, embolic episodes developed more rarely, with a better prognosis than in patients with AHD.

**Key words:** infective endocarditis, congenital heart disease, acquired heart disease, complications, prognosis.

## DEPARTMENT OF NEUROLOGY no.1

### 56. EPILEPTIC ENCEPHALOPATHY: DOOSE SYNDROME

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**Introduction.** The term epileptic encephalopathies are severe brain disorders of early age with a different manifestation, depending on the age of onset, developmental outcome, etiologies, neuropsychological deficits, electroencephalographic (EEG) patterns, seizure types, and prognosis, but all may have a significant impact on neurological development. Doose syndrome, otherwise traditionally known as myoclonic-astatic epilepsy is an epileptic encephalopathy with multiple seizure types. About a third of children may have episodes of convulsive status epilepticus. The disease is characterized by the following criteria: genetic predisposition (high incidence of seizures and/or genetic EEG patterns in relatives); mostly normal development and no neurological deficits before onset; primarily generalized myoclonic, astatic or myoclonic-astatic seizures, short absences and mostly generalized tonic-clonic seizures; no tonic seizures or

tonic drop attacks during daytime, generalized EEG patterns, and often normal neuroimaging . The prognosis is variable and difficult to predict, and the seizures may remit in 54-89% of patients.

**Aim of the study.** Review of new data about epileptic encephalopathies and clinical presentation of illustrative case of Doose syndrome

**Materials and methods.** There are used data from literature and clinical case from our clinic.

**Results.** In our clinical case the the diagnosis was based on the description of the seizures – myoclonic and atonic seizures, mainly in the morning, and also, the patient often had myoclonic status epilepticus, at EEG- we found focal and generalized epileptiform activity, at MRI of the brain - the structures of hippocampus were different on the left compare to right ,main reason because of lost of height and width of the hippocampus structure on the left, and psychological testing-severe cognitive disturbances. The treatment is adjusted permanently with raising doses of combined antiepileptic therapy, especially Valproat and Levetiracetam.

**Conclusions.** The good news for children with Doose syndrome are doing better now than in the past. Outcomes have improved over the years due to early diagnosis and better treatment options.

**Key words:** epileptic encephalopathy, Doose syndrome, seizure, electroencephalographic (EEG) patterns, GEFS+.

## 57. UPDATES ON CRANIAL NERVES DAMAGE IN NON-HODGKIN LYMPHOMA

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**Introduction.** Although rare, alterations of the cranial nerves can be detected at any stage of the clinical evolution of non-Hodgkin lymphomas. The lesions can be focal or/and isolated of varying degrees of damage. The routine neurological examination of cranial nerves in Lymphoma patients can spot apparently minor involvement of cranial nerves.

**Aim of study.** The purpose of the research was to reveal any involvement of cranial nerves in non-Hodgkin lymphoma patients.

**Materials and methods.** Clinical neurological examination, electrophysiological examination, CT or MRI study, lumbar puncture and rarely the puncture of the nerves enlargement were performed in 83 non-Hodgkin lymphoma patients morphologically confirmed. The descriptive statistics is used.

**Results.** 39.8% (33patients) of the entire group of examined patients had clinical manifestation of cranial nerves lesion. The odor change was registered in 12 patients, flagrant optic nerve damage was established in only 1 case, oculomotor nerves injury in 3 patients, another 3 patients manifested the clinical signs of the damage of the trochlear nerve, the various degree of sensitive alteration, predominantly in the territory of the second branch of the trigeminal nerve was registered in 4 patients. Facial nerve impairment, confirmed by electrophysiology was diagnosed in 5 patients. Unilateral hearing loss of pure lymphomatous origin was registered in 2 patients. Swallowing difficulties and change of the voice modulation were recorded in 3 patients. Multiple cranial nerve lesions were counted registered in 7 cases. Most cranial nerves alterations occurred in non-Hodgkin's lymphoblastic lymphoma, derived from Type B cells. Lumbar puncture usually did not detect the presence of the lymphoma cells in the cerebrospinal fluid. The MRI or CT examination in the majority of the cases confirmed an infiltration process or compression, usually lightly involving with radiotherapy treatment.

**Conclusions.** The damage of the cranial nerves in non-Hodgkin lymphomas in the current study was mostly cause by infiltration or constriction. All nerves can be affected isolated or in group. The prognosis is usually poor and is resistant to classical existing treatments.

**Key words:** cranial nerves, lymphoma, non-Hodgkin

## **58. CONVERSION DISORDERS AT PATIENTS WITH MULTIPLE SCLEROSIS**

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**Introduction.** Conversion disorder is a neurological syndrome involving multiple somatic symptoms occurring without an organic cause. Multiple sclerosis is a chronic, demyelinating central nervous system disease characterized by a high degree of disability.

**Aim of the study.** To determine whether patients with multiple sclerosis exhibit or have a predisposition to conversion disorders.

**Materials and methods.** We evaluated successively 32 patients with Multiple Sclerosis for 6 months. They completed the following questionnaires: Screening Scale, Nijmegen Vegetative Profile, BECK Depression Questionnaire, Dissociated Disorders DES, Anxiety Spielberger, Somatoform Reactions, and Family Status.

**Results.** The studied group of the patients is non-homogeneous in terms of gender: 22 females (68.75%), 10 males (31.25%), 23-52 years old, with an average of 38.4 years, primary progressive 53.13%, recurrent remissive 43.75%, secondary progressive 3.2%. Vegetative disorders manifest 70% men and 63.63% women, anxiety 70% men and 77.27% women, depression 50% men and 45.45% women, dissociation disorders 50% men and 54.54% women, conversion disorders 40 % men and 45% women, sensory motor disorders, 40% men and 50% women.

**Conclusions.** Patients with multiple sclerosis develop multiple conversion disorders, especially sensory motor, with a non-significant prevalence of female sex, with primary progressive disease evolution.

**Key words:** neurology, conversion disorder, multiple sclerosis

## **59. INCIDENCE OF RISK FACTORS IN PARKINSON'S DISEASE IN THE IALOVENI DISTRICT OF THE REPUBLIC OF MOLDOVA**

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**Introduction.** Parkinson's disease (PD) is one of the major progressive neurological disorders for which preventative or long-term treatment strategies are not available. Despite intense research over the last decade, PD etiology is still not completely understood. PD appears to stem from the result of complex gene interactions with environmental factors. The most common risk factors for the development of PD are the use of pesticides, traumatic brain injury, the rural environment, and the use of coffee and smoking are considered as protective factors.

**Aim of the study.** Exploring the incidence of risk factors and protective factors in Parkinson's disease for the sick population in the Ialoveni district of the Republic of Moldova.

**Materials and methods.** We conducted a prospective transverse study that included 20 patients diagnosed with PD in the Ialoveni district. By phone call, the patients responded to a questionnaire that included 10 questions about the causative and protective factors of the disease.

**Results.** The group of 20 patients, with mean age - 69 years (54-86 years), included 7 women (35.0%) and 13 men (65.0%). Eight out of 20 patients were exposed to the action of chemicals used in agriculture. Family history named 3 people with relatives suffering from the same

disease; 2 being of I degree and one of II degree. 6 out of 20 patients had head trauma without loss of consciousness. The protective factors were: daily coffee intake (3-4 cups) found in one person, and tobacco use in the past, found in another 4 patients.

**Conclusions.** We observed a domination of causal factors in relation to protective factors.

**Key words:** Parkinson's disease, risk factors, protective factors

## **60. KINESIO TAPING AND MASSAGE THERAPY AS A METHOD OF REHABILITATION OF CHILDREN WITH CEREBRAL PALSY (CP) OUTSIDE OF THE HOSPITAL**

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**Introduction.** Among the causes of disability in children central nervous system pathology ranks first. The lesion of this system often leads to child CP. According to statistical data, 13238 children are suffering from CP in the Republic of Kazakhstan (as of January 1, 2015).

**Aim of the study.** Exploring modern methods of rehabilitation for children with CP.

**Materials and methods.** This research was designed as a randomized, controlled research. 30 children with unilateral spastic CP were included, and were equally divided between the Kinesio Taping (KT) group and the control group that received usual care. KT is an additional study to increase proprioceptive feedback and improve fitness, gross motor function, and activities of daily life in children with CP. The next study included 31 cerebral palsied children scored as of level III, IV or V according to gross motor functional classification system. Children were randomly separated into two study groups (KT and physiotherapy) and a control group (only physiotherapy) for 12 weeks.

**Results.** A total of 60 children with CP were randomly assigned to the treatment group and the control group equally. All were treated with rehabilitation training, but massage with SMKT was carried out additionally for those in the treatment group, five times every week and 3 months as a therapeutic course. All children showed significant improvement in GMFM-66 after treatment. Massage with SMKT manipulation shows a better effect compared to rehabilitation training therapy alone in treating spastic CP. We can use kinesio taping and massage therapy as a method of rehabilitation for children with CP out of the hospital, which is more convenient and cost effective for parents (guardians). Time of children with CP is limited in a hospital or rehabilitation center, and rehabilitation of children with this pathology requires a long time. It should be noted that the massage therapist's services are not always possible for parents because of the financial situation in different families. We have worked and analyzed studies of foreign scientists on the topic of children CP.

**Conclusions.** The result suggested that in clinical settings KT may be a beneficial treatment approach when combined with physiotherapy. We also came to the conclusion that the complex of KT and massage therapy is effective in the treatment of children suffering from CP. In addition, the use of these methods can prevent the harmful possible outcomes of CP.

**Key words:** rehabilitation, massage, kinesio taping

## **61. CURRENT ACHIEVEMENTS IN REPORTING BRAIN IMAGING IN ISCHEMIC STROKE: ZONES AND SCORE ASPECTS**

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**Introduction.** Ischemic stroke incidence and mortality rates show a constantly increasing trend worldwide. As the only specific treatment for ischemic stroke, considered the gold standard, tissue plasminogen activator can be applied only in first 3 hours from the symptoms onset, imaging report must contain maximal volume of information regarding the ischemic lesion. The Alberta Stroke Program Early Computer Tomography Score (ASPECTS) accurately classifies and standardizes regions of middle cerebral artery circulations and describes the subtle changes in imaging patterns, providing possibility to identify ischemia and appreciate its severity. ASPECTS represents a quantitative topographic assessment scale with 10 points for normal brain appearance and subtraction of 1 point for every area, where early ischemic signs are present.

**Aim of the study.** To appreciate applicability of ASPECTS reporting in CT studies in the routine workflow for identification and severity assessment of acute ischemic stroke.

**Materials and methods.** Our prospective study has included the evaluation of 167 consecutive patients with acute middle cerebral artery (MCA) ischemic stroke (first 6 hours) with ASPECTS score reporting for admission non-contrast CT (NCCT), functional perfusion CT (PCT) maps (48 patients). Volume and severity of final ischemic injury was assessed in ASPECTS circulation zones on the control non-contrast CT scan in subacute phase.

**Results.** Of total 1670 NCCT ASPECTS regions (10 zones in 167 patients), 542 regions showed final stroke on control NCCT scan. Sensitivity and overall accuracy of NCCT ASPECTS score, comparatively to the subacute NCCT scan, consisted 43% and 80% respectively. Of total 480 PCT cerebral blood volume regions, 155 showed final ischemic lesion on control NCCT. Sensitivity and overall accuracy of PCT ASPECTS score, comparatively to the subacute NCCT scan, consisted 89% and 93% respectively.

**Conclusions.** ASPECTS imaging grading model represents important, fast, reliable reporting score in patients with acute MCA ischemic stroke and shows greater accuracy in PCT maps. Introducing of ASPECTS reporting system increase substantially inter-reader agreement and rapidity of assessment and inter-disciplinary medical communication, regarding the ischemic brain patterns not only in hyperacute phase, but also in final stroke lesion in subacute phase. Application of ASPECTS zones classification in routine reports provides essential information for stroke assessment and emergency decision-making.

**Key words:** ischemic stroke, ASPECTS, non-contrast CT, perfusion CT

## **62. ALTERED STATE OF CONSCIOUSNESS AS A POSSIBLE FACTOR TO AMPLIFY THE THERAPEUTIC EFFECT IN THE CASE OF NEUROSTIMULATION IN THE CHRONIC PAIN**

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**Introduction.** Chronic pain affects the American population more often than diabetes and cancer altogether. Neurostimulation is the new trend used in the treatment of neurological pathology. Non-invasive cranial neurostimulation includes the following types: transcranial electrical stimulation (tDCS), binaural beats stimulation. ASC is a state in which a person feels a qualitative change in their mental functioning model. tDCS and binaural beats stimulation can induce ASC, in healthy people.

**Aim of the study.** Studying the possibilities of neurostimulation in the induction of ASC, the presence of which would amplify the therapeutic effect in the treatment of chronic pain.

**Materials and methods.** Bibliographic analysis (PubMed).



**Results.** The neurological map of four methods (meditation, hypnosis, trance and daydreaming), that can induce ASC was analyzed. It was established the common component- the prefrontal cortex. The next step was studying pain mapping. We discovered that one of the areas involved in the pain phenomenon is, also, the prefrontal cortex. One of the function of it is that this region processes the pain signals and plans action to reduce the dolor syndrome. tDCS and binaural beats were analyzed as a methods of induction in ASC. The common mechanisms of action, of these two methods are the appearance of theta cortical waves and the involvement of the prefrontal cortex.

**Conclusions.** The prefrontal cortex becomes the main target in the prophylaxis and treatment of chronic pain, through induction in ASC.

**Key words:** altered state of consciousness (ASC), neuroimaging, chronic pain, neurostimulation

### 63. MENINGITIS IN STRUCTURE OF PATIENTS WITH NEUROINFECTIONS

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**Introduction.** Despite modern technologies and improved clinical care, meningitis remains an unsolved problem that leads to high morbidity and mortality rates worldwide.

**Aim of the study.** To evaluate the structure of meningitis in adults; to determine the risk factors in correlation with clinical outcomes, as well as the etiological factors of adult meningitis.

**Materials and methods.** It is a retrospective observational study conducted in Institute on Neurology and Neurosurgery from medical records of patients from 2015 to 2016 in the Neuroemergency section. 25 patients aged between 19 and 67 years with confirmed diagnose of meningitis were selected. The outcome was unfavorable for 15 patients (60%), 9 of them (36%) from both groups died. We evaluate the clinical features of the patients, cerebrospinal fluid, and the imagistic and laboratory tests.

**Results.** From cerebrospinal fluid examination we selected 18 cases (72%) of septic meningitis and 7 cases (28%) of aseptic meningitis. From clinical features we established a rate of 64% of the classic meningitis triad, and a rate of 44% of the alternative meningitis triad. Only in 7 (28%) of 25 meningitis the causal agent was identified: twice *Treponema palidum*, twice *E.coli haemolyticum*, *Enterococcus Faecium*, *Streptococcus Viridans* and *Mycobacterium tuberculosis*. The imagistic examination showed signs of meningitis only in 20% of the cases. Out of the laboratory tests we established the highest values of blood glucose in dead patients with septic meningitis (9.87 mmol/l). We have also determined an Odds ratio of 12 (95% CI 1.07 to 134.11,  $P < 0.05$ ) of correlation between death risk and diabetes mellitus in patients with meningitis. Other negative predictive factors were the following: high levels of erythrocyte sedimentation rate, low platelets count, high level of blood urea and creatinine.

**Conclusions.** The presence of diabetes in meningitis patients increased the mortality by 12. Diabetes is a strong independent risk factor for death in community-acquired adult bacterial meningitis. Other risk factors for negative outcome in meningitis patients were: high level of cell counts in cerebrospinal fluid, high level of blood erythrocyte sedimentation rate, urea and creatinine.

**Key words:** meningitis, cerebrospinal fluid, diabetes.

### 64. INDUCTION OF ALTERED STATES OF CONSCIOUSNESS THROUGH BINAURAL BEAT STIMULATION ON HEALTHY SUBJECTS, A PILOT STUDY

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**Introduction.** Altered State of Consciousness (ASC) is a phenomenon of major interest in the domain of modern neurosciences. Millennial experience and recent research provide convincing evidence that ASC such as trance, hypnosis, meditation, Samadhi and other ASC obtained through the use of oriental techniques are effective in the treatment of various diseases (I. Moldovanu, V. Vovc, 2015). The hypothesis of the study is that of proving the ability of modeling ASC using state-of-the art methods of brain neurostimulation with the aim of improving the therapeutic practices during treatment of chronic pain.

**Aim of the study.** Exploring the possibilities of ASC induction through Binaural Beat Stimulation (BBS).

**Materials and methods.** The study was conducted on 8 healthy volunteers aged 22-25 years. Stages of the study: 1. Pre-stimulation: Data collection through questionnaires with the aim of testing the psychological condition of the subjects. 2. Stimulation: performing BBS with 1-13Hz as well as the Placebo test. 3. Post-stimulation: evaluating the 5D-ASC questionnaire (5-Dimensional Altered States of Consciousness Rating Scale) with the aim of identifying and grading the ASC immediately after BBS (A. Dittrich, 2010)

**Results.** To summarize the 5D-ASC analysis performed on a subset of healthy subjects, two classes have been identified: 1. Affected by the ASC stimulation: 4 subjects (based on the inventory, average score of 5D-ASC > 10%, corresponding with the > 10 mm threshold of the 100 mm visual analog scale, as 100%) The differences are noticeable across all 5 scales of the 5D-ASC inventory, particularly on the VRS scale (Visionary restructuring): Binaural beat stimulation: 31.50 vs Placebo: 13.75. Therefore, it can be concluded that the visual aspect of the ASC has been predominant. 2. Not affected by the ASC stimulation: 4 subjects (based on the inventory, average score of 5D-ASC < 10).

**Conclusions.** The results of the study have demonstrated that 50% of the healthy subjects are susceptible to the induction of altered states of consciousness through binaural beat stimulation. Further study is required in order to identify the susceptibility cause of particular subjects upon their induction into an ASC as well as validating the efficiency of the aforementioned states during the treatment of chronic pain together with other neurological and somatic pathologies.

**Key words:** altered state of consciousness, neurostimulation

## 65. FEATURES OF HYPOTHALAMIC SYNDROME IN ADOLESCENTS OF NORTHERN BUKOVINA

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**Introduction.** Juvenile hypothalamic syndrome of puberty age is a neuroendocrine syndrome of body rearrangement with hypothalamic, pituitary gland and other endocrine glands dysfunction. At the present stage, it is considered a predictor of metabolic syndrome in adults.

**Aim of the study.** To explore the functional state of the cardiovascular system in children who are sick with hypothalamic syndrome.

**Materials and methods.** We surveyed 52 children with hypothalamic syndrome (21 girls (40.4%) and 31 boys (59.6%)) treated in the Endocrinology department of the OCDL for the period from August to November 2017.

**Results.** The average age of patients was  $13.6 \pm 0.45$  years (11-18 years). The parameters of physical development state of the endocrine, cardiovascular systems in children, the state of

brain vessels were studied. Patients with hypothalamic syndrome often complained of excess body weight (79.6%), increased appetite (82.6%), headache (78.5%) of varying intensity, increased blood pressure (38.5%), cardiac arrhythmias (31.8%), and irritability (22.7%). Obesity of various degrees was observed (overweight - 23.3%, first degree - 33.9%, second degree - 42.8%). The heart rate in children was basically normal 88.3%); in 11.7% there was a tachycardia. The level of blood pressure in most cases (73.6%) was normal, while in 17.3% of cases, episodic elevations were observed, and in 9.1% of cases there was a persistent arterial hypertension of the I degree. All patients have been electrocardiographically examined. In all cases a sinus rhythm was registered, in 79.2% - sinus brady- or tachyarrhythmia. Disorders of glucose tolerance were detected in 11 children. The level of C-peptide was elevated and a flat glycemic curve was observed in 16 children. The level of cholesterol and beta-lipoprotein was increased in 18 children. Microalbuminuria was observed in 23 children. Angiohypotonic type of cerebral hemodynamics was observed in 69.4% of the examined REG patients.

**Conclusions.** In most children with hypothalamic syndrome during puberty obesity of various degrees have been found; in 30.77% hyperinsulinism was observed, and another 44.23% of children presented microalbuminuria. In 26.4% of cases a tendency of arterial hypertension development was noticed, which is a predictor of metabolic syndrome.

**Key words:** hypothalamic syndrome, puberty age, clinical presentation, glucose tolerance

## 66. EPILEPSY WITH MYOCLONIC SEIZURES: ELECTROPHYSIOLOGICAL AND NEUROMORPHOLOGICAL PECULIARITIES

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**Introduction.** Recent electroencephalography (EEG) studies in epilepsy patients with myoclonic seizures have revealed distinct ictal and interictal discharges that rely on structurally and functionally interconnected cortical and/or subcortical networks. However, the neuroanatomical substrates in this type of seizures are insufficiently characterized.

**Aim of the study.** To explore the EEG patterns and associated cortical and subcortical (thalamic) structural abnormalities in epilepsy patients with myoclonic seizures.

**Material and methods.** For this purpose, were performed EEG recordings and brain magnetic resonance imaging (MRI) in 11 epilepsy patients ( $24 \pm 6$  years; 3 males) with myoclonic seizures and 11 healthy subjects ( $28 \pm 4$ ; 6 males). The MRIs were processed using FreeSurfer cross-sectional stream and the between-group differences in cortical thickness (CT) and thalamic volumes assessed.

**Results.** Interictal EEG revealed polyspike waves in 27% of patients and spike-slow waves in 37% and no discharges in 36% of patients. The frequency of discharges was  $> 3.5$  Hz in 27%, 2.5 - 3.5 Hz in 36% and  $< 2.5$  Hz in 9% of patients. Intermittent slow waves were recorded in 37% of patients and EEG background asymmetry in 9%. Photoparoxysmal response was obtained in 82% of patients. The analysis of ictal EEG disclosed generalized patterns: polyspike waves in 45% of patients, spike-slow waves in 28%, spike-slow waves with a frequency of  $\sim 3$  Hz in 18% and of  $< 2$  Hz in 9% of patients. A statistically significant difference ( $p < 0.001$ , uncorrected) of CT was found in the following clusters: left postcentral, supramarginal and rostral middle frontal cortices, and right lateral occipital, rostral middle frontal, supramarginal, pars triangularis and insular regions. CT correlated with the disease duration in the left superior, middle and inferior temporal and inferior parietal cortices, and right supramarginal, inferior parietal and rostral anterior cingulate cortices. Thalamic volumes in patients ( $7078.5 \pm$

508.7/left 7804.1 ± 737.4 mm<sup>3</sup>) compared to healthy subjects(right 8155.9 ± 702.1/left 9168.1 ± 1442.5 mm<sup>3</sup>) were significantly lower( $p = 0.014$ ,  $p = 0.001$ , respectively).

**Conclusions.** Ictal EEG patterns were relevant in all epilepsy patients with myoclonic seizures, while interictal EEG discharges only in 64% of patients. Alterations of CT along with bilateral thalamic volume loss support the hypothesis of involvement of aberrant cortico-thalamic networks in patients with myoclonic seizures.

**Key words:** myoclonic seizures, electroencephalography, cortical thickness, thalamic volume

## **67. THE EFFECTS OF MIRROR THERAPY ON PATIENTS WITH NEUROLOGICAL MOTOR DEFICIENCY. A CLINICAL PILOT STUDY**

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**Introduction.** Stroke has a major socio-economic impact on the population. The consequences of the disease are fatal in 20 – 35 % of cases, and in 30 – 60 % patients report permanent functional difficulties of the upper limb. Mirror therapy is a relatively new method proposed in the treatment of post-stroke hemiparesis. It is based on the activity of mirror neurons in the neuroplasticity process. The objective of the study was to evaluate the efficacy of mirror therapy in patients with neurological motor deficiency of the upper limb resulting from an ischemic or hemorrhagic stroke.

**Materials and methods.** This study was prospective, controlled, and pilot. It included a pretest and a posttest. A total of 20 stroke patients were included: 10 in the experimental group (EG) and 10 in the control group (CG). EG underwent conventional rehabilitation program 2 hours a day for 14 days + mirror therapy 30 min/day, 14 days, and GC – only conventional rehabilitation program 2 hours a day, 14 days. The Functional Independence Measure (FIM), Fugl-Meyer Assessment(FMA) were performed at the beginning and at the end of the study to compare changes in motor recovery and motor function after intervention.

**Results.** The patients from the experimental group achieved significantly higher scores ( $p < 0.02$ ) for FIM and FMA than those from the control group. EG showed improvements of 2.6% in FIM testing, compared with 1.2% in CG. The same differences were found using other examinations: FMA arm score increase by - 9.7% in EG, GC - by 3%; FMA hand score EG – increase by 11%, CG - by 2.5%; FMA total score EG increase by 11% and CG only by 2.8%.

**Conclusions.** This pilot study proved the efficacy of mirror therapy on the patients with neurological motor deficiency. This technique is a useful tool in treating the post stroke hemiparesis by easiness of implementation, low cost and acceptability. For maximum effect, sessions of mirror therapy should last 30 minutes/day, 5 days a week, 4 weeks.

**Key words:** mirror therapy, stroke, motor recovery.

## **DEPARTMENT OF PEDIATRICS**

## **68. ULTRASOUND FEATURES OF THYROID GLAND IN JUVENILE IDIOPATHIC ARTHRITIS**

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**Introduction.** Several interactions exist between thyroid function and rheumatological disorders. Many publications explored the relationship between thyroid diseases (TD) and juvenile idiopathic arthritis (JIA). However, the morphological thyroid changes in patients with JIA were not fully explored. In children affected by JIA the occurrence of other autoimmune diseases has been described in case-reports or small case-series. High-resolution ultrasonography (USG) is the most sensitive imaging modality available for examination of the thyroid gland and associated abnormalities.

**Aim of the study.** To evaluate ultrasound features of thyroid gland in patients with juvenile idiopathic arthritis.

**Materials and methods.** Fifty-five patients previously diagnosed with juvenile idiopathic arthritis according to the International League of Associations for Rheumatology Classification criteria were screened for autoimmune thyroiditis. Patients with active disease as well as those in clinical remission were included. The following variables were observed and studied: echogenicity, echotexture, thyroid volume in relation with age and gender.

**Results.** Our results revealed that 65.6% of patients were girls. The mean age of the studied group was  $115.45 \pm 6.9$  months, the median age at diagnosis was  $68.53 \pm 8.79$  months and the median disease duration was  $53.83 \pm 8.57$  months. The most frequent types of JIA were oligoarticular (43%), polyarticular negative RF (30%) and systemic (21%). The ultrasound examination of thyroid gland revealed abnormalities in 33% cases, most of them cystic changes (28.6%) and hypoechogenicity (23.33%). In 3 cases thyroid nodules were detected. 2 patients presented mean thyroid volume above 2SDS compared to their age reference values. An increased vascular flow pattern on Doppler examination of thyroidal gland was found in 12% of cases. Correlation and regression analysis showed low age at diagnosis and longer duration of the disease to be predictors for those thyroid disorders.

**Conclusions.** Cystic changes of thyroid gland and hypoechogenicity of thyroid tissue were the most common morphological changes in patients with juvenile idiopathic arthritis. Periodic ultrasound assessment of thyroid volume and texture are recommended in juvenile idiopathic arthritis patients to avoid complications.

**Key words:** juvenile idiopathic arthritis, thyroid gland, ultrasonography

## **69. EVALUATION OF DECELLULARIZED GRAFTS OF PERITONEUM AND PORCINE PERICARDIUM IN EXPERIMENTAL RECONSTRUCTION OF DIAPHRAGMATIC DEFECTS**

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**Introduction.** Congenital and acquired diaphragmatic defects continue to be a major problem in pediatric surgery. Regenerative medicine could be a valid option in developing techniques for repairing major diaphragmatic defects that could help improve outcomes.

**Aim of the study.** To identify a biologically acceptable material for closing the major diaphragmatic defects in the experimental models.

**Materials and methods.** The study included 4 pigs, one month old, weighting 9.8 - 10.2 kg. All animals underwent left subcostal laparotomy, creating a defect of the tendinous part of the hemidiaphragm, which was closed by decellularized grafts of porcine peritoneum (2 animals) and porcine pericardium (other 2 animals). For the decellularization of the biological material sodium dodecyl sulfate was used. The evaluation of the effectiveness of the used implants was based on the postoperative radiological examination and the results of the morphopathological investigations.

**Results.** Clinical and radiological results in the first postoperative month were the following: in both cases of porcine peritoneum use the relapse of the defect occurred and the animals died at the 58<sup>th</sup> and 60<sup>th</sup> postoperative day. Morphopathological examination detected the presence of a diaphragmatic defect in the absence of partial graft, immature tissue being found at the edges of the defect, circumscribed by the plate or the overlap line wave. The animals of the 2<sup>nd</sup> study group have survived. The radiological examination performed on the 15<sup>th</sup> postoperative day showed a normal configuration of the newly formed hemidiaphragm; on the 60<sup>th</sup> postoperative day the normal configuration of the neohemidiaphragm was maintained; on the 90<sup>th</sup> postoperative day a moderate eventration of the hemidiaphragm has occurred – morphopathological examinations revealed that the tendinous region of the hemidiaphragm was subjected to very thin reconstruction with a transparent and semi-transparent aspect, microgranulated and in plateaus to the intransparent albuminous predominant area.

**Conclusions.** The preliminary results suggest that decellularized porcine peritoneum grafts are characterized by a lower biosensitivity compared to porcine pericardium, which exhibit acceptable biomechanical properties for the reconstruction of diaphragmatic defects, requiring additional experimental studies to adjust the bioresistance, stiffness and elasticity parameters.

**Key words:** decellularized grafts, experimental reconstruction

## **70. SCREENING THE C677T POLYMORPHISM OF THE MTHFR GENE IN ASSESSING DISEASE SEVERITY AND RESPONSE TO METHOTREXATE TREATMENT IN CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS**

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**Introduction.** Existing data regarding the association of the mutation of methylenetetrahydrofolate reductase (MTHFR) gene with methotrexate (MTX) treatment efficacy and side effects in patients with juvenile idiopathic arthritis (JIA) is still contradictory. Therefore, genetic studies of the role of this mutation are necessary in order to provide personalized treatment for this group of patients and decrease the risk of MTX side effects.

**Aim of the study.** To evaluate the association between the presence of the MTHFR gene mutation and methotrexate responsiveness using Juvenile Arthritis Disease Activity Score (JADAS71), Pediatric ACR 20,50,70,90 Index and Methotrexate Intolerance Severity Score (MISS) in children with JIA.

**Materials and methods.** A case-control study included 18 children with JIA who had being on MTX treatment for more than 6 months. Clinical and laboratory data of all patients was analyzed in order to determine the JADAS71 Score, Pediatric ACR 20,50,70,90 Index and MISS Score. The JADAS71 Score and Pediatric ACR 20,50,70,90 Index allow assessing disease's activity. The MISS Score is used to evaluate the MTX side effects. The polymorphism C677T of the MTHFR gene was identified using the PCR techniques.

**Results.** There has been examined 18 children in whom was identified 7 (38.9%) cases of no mutation, 2 (11.1%) cases of T/T homozygotes and 9 (50%) cases of C/T heterozygotes in the 677 nucleotide of the MTHFR gene. The JADAS71 Score was higher in the heterozygote cases with the mean value 18.1 (p=0.0013), compared to the non-mutation sample – 2.7 (p=0.0022). The Pediatric ACR index in heterozygote sample had a mean value of 22% (p=0.0011) clinical improvement compared to the control group - 37% (p=0.001). The MISS score in heterozygotes had a mean value of 7.8 (p=0.0011) points compared to the control group – 4.6 (p=0.001).

**Conclusions.** A significant correlation between the MTHFR gene heterozygote mutation status and the MTX non-responsiveness, as well as the side effects occurrence has been revealed. These preliminary results may suggest the need for an individual genetic examination before immunosuppressive treatment in JIA initiation.

**Key words:** methylenetetrahydrofolate reductase, methotrexate, arthritis, children

## **71. INTRODUCTION OF SOLID FOOD TO INFANTS: NEW PATTERNS OF PARENTING**

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**Introduction.** The moment parents introduce solid food to their child is considered a fundamental step in a healthy development of an individual. Nevertheless, it remains a really controversial topic, making room for new theories and new patterns of parenting. This often leads to the idea that the previous models are harmful to children and have to be forbidden. At the same time the errors that can occur during this period of maximum impact on the child growth become evident not necessarily in the nearest future. These are especially prominent in childhood and adolescence, when the personality and discernment of the child develops in conjunction with their own food choices.

**Aim of the study.** The aim of this study was to identify what are the most common nutritional mistakes parents make, how this new parenting patterns have changed the way people feed their children and whether these new changes had a positive impact on child development or not.

**Materials and methods.** 257 parents from Romania have filled out an anonymous survey, that included 72 questions which included mainly the following topics: the optimal moment for starting solids, the most common signs infants present when they are ready to eat solids, the sources where parents find the information about child development from, types of solid foods infants should start with and the most common beliefs parents share about this process.

**Results.** From a total of 257 study participants, aged between 21 and 36, only 31,9 % believed that an infant is ready for solid food at around 6 months old, the other 23,7% consider that a child is to take solids later than 6 months and 44,4% believed they are ready way earlier than 6 months of age. The study also concluded that parents inform themselves from a wide variety of sources, but only a small percent of them go to pediatricians or use medically approved sources.

**Conclusions.** Our study showed that parents tend to use a wide variety of sources regarding children nutrition as primary, while disregarding medically approved information. The new parenting patterns promote self-thought child development, and unfortunately, this leads to an increased number of misinformed parents.

**Key words:** parents, infants, development patterns, solid food, diversification

## **72. APGAR SCORE AND NEONATAL MORTALITY IN A HOSPITAL LOCATED IN TRANSYLVANIA, ROMANIA**

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**Introduction.** The Apgar score was developed in 1952 and used like a convenient method for reporting the status of the newborn infant immediately after birth. Despite the advent of modern

technology, the Apgar score remains the best tool for the identification of newly born infants in need for cardiopulmonary resuscitation.

**Aim of the study.** To evaluate if the Apgar score remains pertinent in contemporary practice after more than 60 years of wide use, and to assess the value of the Apgar score in predicting infant survival, expanding from the neonatal to the post-neonatal period.

**Material and methods.** A retrospective study performed by analysis of medical charts (n=116) of all live newborns hospitalized in the Neonatal Intensive Care Unit from Neonatology I Clinic of Târgu Mureș County Clinical Emergency Hospital between January-December, with data up to 28 days of life in reference to weight, Apgar score, survival and cause of mortality. Cases were analyzed by the Fisher exact test ( $p < 0.05$ ).

**Results.** In 116 births, there were 20 deaths, 65% during the first week, 35% during the first day of life and 25% of them with Apgar  $< 6$  in the 1st minute. In the group with 1,000-2,000 g weight, the association with Apgar  $< 4$  in the 1st minute with mortality was four-fold greater than in the  $>2,999$  g weight group. Among newborns with Apgar 8-10, the rate of mortality and low weight was not significant statistically compared to newborns of the group over 2500 grams weight [OR=1,12; 95%IC=0,11-11,37]; Severe respiratory distress syndrome and prematurity were associated with early neonatal death; malformations and perinatal hypoxia to late mortality.

**Conclusions.** The Apgar score proved linked to factors both epidemiological and related to attention given to the birth and neonatal mortality and was associated with extremely low birth weight.

**Key words:** Apgar score, neonatal, mortality

## DEPARTMENT OF INFECTIOUS DISEASES

### 73. THE INCIDENCE OF VARICELLA SPECIFIC AND NONSPECIFIC COMPLICATIONS AMONG CHILDREN

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**Introduction.** Initial infection with Varicella Zoster Virus (VZV) results in chickenpox (varicella), a contagious rash illness typically occurring among children aged 1–10 years. VZV has the potential to cause disseminated infection in immune compromised individuals. There are two types of complications in varicella disease: bacterial superinfections and neurological complications that are quite rare.

**Aim of the study.** To evaluate the incidence, clinical manifestations and the outcomes of specific and nonspecific secondary complications among children with varicella.

**Materials and methods.** This is a retrospective study on 81 patients aged between 6 months and 17 years with neurological complications and bacterial superinfections related to varicella, recorded between 2016 and 2017.

**Results.** In 61 % of children, varicella occurred before the age of 3, with a peak incidence in winter (39%) and autumn (30%); 72% of children were hospitalized within 4 days. The most common form of varicella was the medium one (69%) and 31% of children had the severe form. Out of 81 patients that had chickenpox, 47% of them had complications. The most frequent varicella complications were: bacterial superinfection of skin caused by *St. aureus* and *Streptococcus pyogenes* (9.8%), bronchitis (6.17%), otitis media (4.9%), tonsillitis (6.17%). Only in 3.7% of children the central nervous system was affected (acute cerebellar ataxia). Clinical manifestations of varicella related neurological complication were: ataxia (3 cases),



vomiting and headaches (3), fever and seizures (3), shivers (2) and dizziness with slurred speech (1). Concomitant diseases that influenced the evolution of varicella were: anemia (10%), allergic contact dermatitis (6%), toxic encephalopathy (20%) and intestinal dismicrobism (7%). The hospital physicians prescribed antibiotics in 71 % of cases (aminopenicillins, cephalosporin II-III g) and 60 % of patients used acyclovir therapy.

**Conclusions.** The incidence of specific and non-specific secondary varicella complications in hospitalized patients was high (47%). The outcome of varicella complications was favorable in immunocompetent patients without apparent long-term sequelae. A decrease in the morbidity of varicella complications will be possible only if there's appropriate vaccination coverage.

**Key words:** varicella, bacterial superinfections, complications, children

#### **74. ROTAVIRAL GENOTYPE IN ACUTE INTESTINAL INFECTION IN SENTINEL SURVEILLANCE OF INFANTS FROM REPUBLIC OF MOLDOVA**

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**Introduction.** The implementation of sentinel surveillance of infants with rotavirus infection in 2008 in the Republic of Moldova has demonstrated a high rate of this infection. These results were used as an argument for vaccination against rotavirus inclusion in the National Immunization Program.

**Aim of the study.** To assess the aspects of clinical evolution, molecular and epidemiological peculiarities of rotavirus infection in children.

**Materials and methods.** The study included infants with acute diarrheal disease from sentinel surveillance (2011-2015) of the Department of Pediatrics. 95 patients with acute diarrheal disease were included in the standard case study. Biological material was examined for rotavirus infection using ELISA serological reaction and genotyping in PCR.

**Results.** The rotavirus infection has a high prevalence during the cold period of the year (January-March). Children's age varied from 1 to 12 months, with an average of 7.1 months, male children (54.8%) prevailing over females (45.2%).

Etiologically, intestinal monoinfection was predominant in the first study group (67.3% of children) compared to group II, where the viral monoinfection rate was 2 times lower. Higher hospitalization duration, more severe dehydration (3%), severe respiratory disease (pneumonia, bronchitis, 21%) were higher in study group II vs group I. Bacterial infection associated with acute diarrheal disease group II had a rate of 20.5% with identification of *Proteus mirabilis*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Escherichia coli*, *Proteus vulgaris*, and *Providencia mixofaciens*. In study group bacterial association was sporadic. All children from the study group were examined for rotavirus infection and the most common genotypes found were G4, G2 and G9. The genotypes G2, G3, G4, and G9 are present in the Rotarix vaccine, which also provides vaccine efficacy in the country.

**Conclusions.** Rotavirus infection is more common in infants older than 6 months (53.6%) with male predominance (54.8%). Dehydration syndrome and association of more severe respiratory pathology is noted in children with viral-bacterial infection. Genotypes G4, G2 and G9 are more common in Republic of Moldova. Vaccination against rotaviral infection provides good immunity and decreases the morbidity by acute diarrheal disease in infants.

**Key words:** diarrhea, rotavirus, children.

**DEPARTMENT OF FAMILY MEDICINE**

## 75. MANAGEMENT OF CONFLICT IN PRACTICE OF PRIMARE HEALTH CARE

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**Introduction.** Conflict is present in all domains of people's lives, and family medicine is no exception. Because each year the number of conflicts increases, which produces a huge blow to the image of the health system, including financial, emotional and time loss, the necessity of implementing a methodology for their prevention and resolution has emerged.

**Materials and methods.** This research was conducted through a retrospective study based on a Thomas-Kilmann standardized questionnaire (TKI-R), randomly applied to a sample of 200 individuals, out of which 70 were doctors and 130 were patients, aged between 20 and 76 years ( $x = 48$  years) in On Clinic and CMF No.7. We opted for self-employment, avoiding the group in order to minimize the contamination of the response by mutual influence.

**Results.** It was found that all respondents adopted 3 main patterns of behavior in a conflict – avoidance (34%), deflation (24.5%) and compromise (21%); 15% of them chose to go on the road of confrontation and cooperation; Family doctors more often avoided conflict (52.2%), and patients almost went for confrontation and avoidance (23.8% and 26.1%);

**Conclusions.** We have identified that people prefer to circumvent conflicts (59.5%) rather than solve them, which means that society is not informed about ways to resolve conflicts.

**Key words:** conflict, family medicine

## 76. COLLABORATIVE MANAGEMENT OF THE FAMILY DOCTOR'S TEAM WITH PUBLIC SERVICES.

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**Introduction.** In 2016, a family doctor received about 3935 visits a year. (Visits 3001611 to / 762.75 med). Approximately (68%) of the normative acts within the Ministry of Health, NHIC, regulate the work of the family doctor team.

**Aim of the study.** Evaluation of the collaboration of the family doctor's team with the public services in the conditions of mandatory health insurance.

**Materials and methods.** The paper is a synthesis based on the retrospective study of the legislative acts that define the activity of the family doctor during the period 1998-2017. Methods of study: historical method, analytical method, comparative method, modeling method.

**Results.** The family doctor's team collaborates with the Ministry of Health, NHIC, LPA, Police, NGO. The work of the Family Physician Team is governed by 20 laws, 30 government decisions, 150 orders of the Ministry of Health, 5 laws-20 orders with (CNAM) the National Health Insurance Company, the National Center for Health Management (CNMS).

From the comparative analysis of the legal framework on groups it was found that the normative acts related to the Organization of the work of the family doctor team are 60%, Prevention 15%, Pathologies 25%.

**Conclusions.** 1. The family physician team is the key figure in the health system. Most of the normative acts (68%) within the Ministry of Health, CNAM refer to the work of the family doctor's team. 2. Collaboration of the Family Physician team is characterized by collaboration within the healthcare system but also with public services (Social Assistance, NGO, Police, APL).

**Key words:** family doctor team, legislation, public services.

## **77. QUALITY OF LIFE AND MULTIMORBIDITY IN HEMODIALYSIS PATIENTS**

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**Introduction.** Multimorbidity in patients undergoing hemodialysis causes major changes in their lifestyle that affect their quality of life. In Moldova there have been no studies to prove this.

**Aim of the study.** To examine the quality of life (QoL) level and its correlation with multimorbidity in patients with chronic kidney disease.

**Materials and methods.** The participants were individuals with end-stage renal failure who received hemodialysis in one outpatient clinic in Chisinau during January and February 2018. The sample included 30 adults; they all received hemodialysis treatment for the minimum of one month. Data was collected using a questionnaire with sociodemographic and clinical variables; it also included the SF36 questionnaire for assessing the quality of life. Multimorbidity, defined as the existence of two or more medical conditions within one person, was assessed as a simple account of diseases.

**Results.** Of the 30 patients on hemodialysis, 17 (56.6%) were women, the mean age (M±SD) was 47.8±15.3 years. The onset of chronic kidney disease was 37.7±17.5 years; they started the hemodialysis at 46.1±15.6 years, with a duration of 16.23±20.5 months, with 1 to 3 procedures per week. Concomitant diseases were identified in 26 patients, and in 21 (70%) cases multimorbidity was established. The average total score of quality of life was found to be 62.7±12.9 (in a range 47-85) points. Scores of mental health were higher (68.6±13.4) than those of physical health (55.4±14.5,  $p<0.001$ ). It was found that the increasing duration of hemodialysis sessions determined poorer quality of life ( $p<0.05$ ). The total score of quality of life was found to be lower in participants with multimorbidity, especially in the physical domain ( $p<0.05$ ). Furthermore, the number and severity of comorbid conditions correlate significantly with lower QoL ( $r=0.5$ ,  $p<0.05$ ) in patients with chronic kidney disease.

**Conclusions.** Concomitant medical conditions, multimorbidity especially, have a negative impact on the quality of life in hemodialysis patients.

**Key words:** hemodialysis, quality of life, multimorbidity

## **78. ASSESSMENT OF INFANT FEEDING PRACTICES IN THE REPUBLIC OF MOLDOVA**

**Author:** Cristina Grosu

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**Introduction.** Worldwide, the prevalence of exclusive breastfeeding of infants in first 6 months of life is about 36.4%. In the Republic of Moldova, this indicator reaches the level of 40% in rural areas and 30% in urban areas.

**Aim of the study.** Evaluation of infant feeding practices in several urban and rural areas.

**Material and methods.** The study included 100 infants: 50 children from Chisinau city and 50 children from rural areas (Hincesti, Ialoveni and Stefan-Voda) between 10 October 2016 and 23 June 2017. Interviewed mothers answered to a questionnaire containing 180 items, including data about the level of education of parents, nutrition during pregnancy and after birth of mothers, infant feeding practices and food diversification.

**Results.** Of the total number of 100 infants, 49% were exclusively breast-fed until the age of 6 months, of which 19% - in urban areas and 30% - in rural areas; 39% were fed with bottle milk, of which 15% - in urban areas and 24% - in rural areas; 12% were fed using mixed feeding, of which all were from urban areas. One of the reasons for formula feeding was the necessity of the mother to return to the work. The majority of mothers had university education (74%). About 79% of children had normal birth weight, 17% had low birth weight and 4% the birth weight was higher than 3500 g. Analysis of answers to questionnaires showed that mothers who have been breastfeeding avoided eating food that may trigger colic in their babies (onion, fat and spicy food, coffee). Amongst all responders 66% started to introduce solid food at 6 months as recommended by the WHO; 12% at the age of 5 months with cereals and 11% at 4 months with fruits (apple, bananas). Some children manifested intolerance to some food, introduced after 6 months. Thus, 10 children from rural areas were fed with cow's milk from the age of 6 months, one infant from a rural area was fed with sheep cheese at the age of 3 months, and 3 children from the urban area were fed with semolina porridge at the age of 7 months.

**Conclusions.** The study revealed exclusive breastfeeding of infants in 49%, which is lower than the level recommended by the WHO. Food diversification shows higher incidence of errors in urban areas, where only 50% of respondents started food diversification correctly. Mothers' awareness about correct infant nutrition must be raised through education provided by health workers at the primary care level.

**Key words:** infant feeding, exclusive breastfeeding, formula milk, food diversification

## DEPARTMENT OF RADIOLOGY AND IMAGING

### 79. ULTRASOUND PREDICTION OF FETAL BIRTH WEIGHT

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**Introduction.** The prediction of fetal birth weight is crucial for establishing a correct birth plan. The two main methods to predict the fetal size are: clinical estimation and ultrasound measurement. The clinical evaluation of fetal weight is based on abdominal palpation of fetus, determination of height, body mass or abdominal circumference of the mother. It is subjective and not standardized. This is why the ultrasound examination is thought to be more helpful and accurate.

**Aim of the study.** To assess the precision of the ultrasound in the prediction of fetal birth weight.

**Materials and methods.** This is a descriptive, non-experimental study of pregnant women hospitalized during 2017 in the Obstetrical department of Municipal Hospital No 1 of the Republic of Moldova. The pregnant patients were admitted to the hospital because of the pregnancy complication. All the patients underwent ultrasound examination by the same experienced sonographer. The obtained fetal measurements were: biparietal diameter, head circumference, femur length, humerus length and Abdominal circumference by Gray-scale two-dimensional ultrasound. Birth weight was best estimated by three different formulas. Shepard formula:  $\text{Log } 10\text{EFW} = 1,2508 + (0,166 \times \text{BPD}) + (0,046 \times \text{CA}) - (0,002646 \times \text{CA} \times \text{BPD})$ . Formula Aoki:  $= (1,25647 \times \text{BPD}^3) + (3,50665 \times \text{FAA} \times \text{LF}) + 6,3$  Formula Hadlock:  $\text{Log } 10\text{EFW} = 1,3596 - 0,00386(\text{CA} \times \text{LF}) + 0,0064(\text{CC}) + 0,00061 (\text{BPD} \times \text{CA}) + 0,0425 (\text{CA}) + 0,174 (\text{LF})$ . In all formulas EFW stands for estimated fetal weight (g), BPD - biparietal diameter (cm), FAA - fetal abdominal area (cm<sup>2</sup>), LF - femur length (cm). The newborns were weighted 2 hours after the delivery using a graduated scale and the actual birth weights were recorded. The data collection was made by extraction of the important information from medical files of the

hospitalized patients, in accordance with the elaborated questionnaire for this research. Statistical processing was performed using the program Microsoft Office Excel.

**Results.** The total number of participants comprised 200 pregnant. From these, 100 at term and 100 who delivered prematurely. The average age of mothers of children was 29.07 years, the age ranged from 21 to 42 years. The average weight of neonates at birth was 2057 gr. The difference between the estimated fetal weight by ultrasound and the birth weight of the fetus varied between 10 and 520 grams. The deviation from real birth weight in three formulas corresponded to: Shepard 334g, Aoki 366, Hadlock 289g. The average difference was 355.71 grams. The difference <300 grams was 47.62%, > 300 grams was 52.38%.

**Conclusions.** The ultrasound evaluation showed to have an average sensitivity in the predicting the fetal weight at birth (47.6%). From the formulas used, the Hadlock formula shows less deviation from neonatal weight.

**Key words:** estimated fetal weight, birth weight, ultrasound, Hadlock formula.

## DEPARTMENT OF PSYCHIATRY, NARCOLOGY AND MEDICAL PSYCHOLOGY

### 80. CLINICAL FEATURES AND EVOLUTION OF PATIENT WITH PSYCHOSIS INDUCED BY ALCOHOL

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**Introduction.** Alcoholism is a serious problem of mental health confirmed by its biological and social consequences. WHO declared that the Republic of Moldova is on the 3<sup>rd</sup> place in Europe with a consumption of 15,9 litres of pure alcohol per capita in population older than 15 years old. According to the statistics from 2017, in the RM 45340 persons are at the psychiatric evidence with the diagnosis of chronic alcoholism. The rate of alcoholic psychosis in Chisinau is 55 (psychosis) per 100000 standard population. Also, according to 2017 data, 4196 patients with alcoholism were treated in hospitals, 1261 of them had alcoholic psychosis, 204 of whom had recurrent psychosis.

**Aim of the study.** Studying clinical features of patients with alcoholism who have suffered from alcoholic psychosis.

**Materials and methods.** The total number of investigated patients was 428(only men). 21 patients with chronic alcoholism who had 2 or more alcoholic psychosis in the period of 2016-2017, and got hospitalized in the Republican Narcology Dispensary, section 4 were analyzed. The investigation is prospective, based on a protocol of individual examination. The criteria of the research were: age, numbers of recurrences, duration of psychosis, heredity, triggers, frequency of episodes depending on the season of the year, and comorbidities.

**Results.** From the total of 428 patients, 4.67% suffered 2 psychosis, 0.23% - 3 psychosis and 95% - 1 psychosis. Most frequently, the alcoholic psychosis occurred in patients aged 51-60 years (42.9%), followed by 31-41 years (23.8%). By marital status, 43% of patients were married, 43% - were single and 14% - divorced. By heredity, 67% of patients had aggravated hereditary history and 33% - didn't. By analyzing clinical particularities, 84% of patients had delirium tremens, 14 % - alcoholic hallucinations and 2% - alcoholic paranoia. In most cases, remission of alcoholic psychosis took from 1 to 5 months. The alcoholic psychosis occurred mostly in summer – 39%. Main factors such as craniocerebral trauma, returning to drinking, abandoning treatment, family problems, and loneliness were present before the onset of psychosis.

**Conclusions.** Abusive alcohol consumption in Moldova is a biopsychosocial issue, statistically confirmed. Most patients were found to have pathogenic substrate consisting of biogenetic factors, personality disorders, disharmonic personalities, and somatoneurological complications that contributed to the development of psychoses and were identified as primary risk factors. In order to reduce the number of patients with alcoholic psychoses, it is necessary to administer a complex and a long lasting treatment, with the involvement of dispensary specialists and the Community Centers of Mental Health.

**Key words:** alcoholic psychosis, delirium tremens, remission

## **81. ANAMNESTIC-EPIDEMIOLOGICAL ASPECTS IN GENDER IDENTITY DISORDERS: REVIEW**

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**Introduction.** Transgender is an umbrella term for people whose gender identity, gender expression or behavior is not in accordance with the sex assigned at birth. Categories of transgender include cross-dresser, female-to-male, male-to-female, drag queens, androgynous, gender queer, multigendered, gender nonconforming, third gender, and two-spirit people. It is very difficult to estimate accurately the number of transgender people, especially because there are no population studies that take into account the range of gender identity and gender expression. The ways in which transgender people are discussed in folk culture, academic environment and science are constantly changing, especially depending on the awareness, knowledge and openness of individuals for transgender people and their experiences. The group of people presenting gender dysphoria is quite heterogeneous.

**Aim of the study.** To highlight the importance of comprehensive psychological/psychiatric assessment in transgender patients.

**Materials and methods.** This study is based on a review of different articles from the open access data base <https://www.ncbi.nlm.nih.gov/pubmed>

**Results.** Recent studies suggest that the prevalence of self-reported transgender identity in children, adolescents and adults ranges from 0.5 to 1.3%, significantly higher than prevalence rates based on clinically-referenced samples of adults. On average, men are diagnosed with gender dysphoria five times more often than women. Although, biological factors such as genetic influences and prenatal hormonal levels can contribute to the development of transgender identity, also social factors (early experiences and late experiences in adolescence or adulthood) influence gender role. The results of some studies show that psychological and psychosocial vulnerability of young people diagnosed with gender dysphoria is overlooked. The majority of children with transgenderism will not remain gender-disphoric after puberty. For a person to be diagnosed with gender dysphoria, there must be a marked difference between the individual's expressed/experienced gender and his or her assigned gender, and it must continue for at least 6 months. Differential diagnosis of gender dysphoria with other mental disorders remains poorly elucidated, gender identity disorders being present in schizophrenia, nonconformity to stereotypical sex role behaviors, transvestic fetishism and concurrent congenital intersex conditions.

**Conclusions.** Should gender dysphoria be considered a mental disorder or not remains a debatable topic. Many transgender people do not experience their genre as distressing or disabling. The significant problem for them is finding accessible resources such as counseling, hormone therapy, medical and social procedures, necessary support for free expression of gender

identity and minimization of discrimination. Transition in gender dysphoria may improve comorbid psychosis.

**Key words:** gender identity, transgender, diagnosis, psychology, psychiatric evaluation

## **82. ANALYSIS OF CLINICAL-EPIDEMIOLOGICAL PARTICULARITIES OF BODY DISMORPHIC DISORDER**

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**Introduction.** Body dysmorphic disorder (BDD) is a distressing body image disorder that involves excessive preoccupation with physical appearance in a normal appearing person. Patients with body dysmorphic disorder have high rates of psychiatric hospitalization, suicidal ideation, and suicide attempts. Although any part of the body may be the focus of patient's concern, preoccupation with the appearance of skin, hair, and nose are most common. Typical associated behaviors include skin picking, mirror checking, and camouflaging (e.g., with a hat or makeup). Reassurance seeking is another common behavior that can be enacted with surgeons and dermatologists.

**Materials and methods.** All relevant information was obtained from literature review.

**Results.** Body Dysmorphic Disorder affects 1.7% to 2.4% of the general population - about 1 in 50 people. This means that more than 5 million people to about 7.5 million people in the United States alone have body dysmorphic disorder. It's possible that body dysmorphic disorder may be even more common than this, because people with this disorder are often reluctant to reveal their body dysmorphic disorder symptoms to others. Most surveys of body dysmorphic disorder patients attending a psychiatric clinic tend to show an equal sex incidence, and sufferers are usually single or separated and unemployed. It is possible that, in the community, more women are affected overall, with a greater proportion experiencing milder symptoms. Although the age of onset of body dysmorphic disorder is during adolescence, patients are most likely to present to cosmetic surgeons, dermatologists, ear, nose, and throat surgeons, or their GPs. They are usually not formally diagnosed by mental health professionals until 10–15 years after the onset.

**Conclusions.** The onset of body dysmorphic disorder usually occurs in adolescence, and, therefore, particular attention will need to be given in research to risk factors preceding the onset. One aim of future research is to determine which factors (or combination of factors) predict future persistence of extreme self-consciousness so that interventions may be divided for those at risk. In the meantime, it seems important to identify these individuals, many of whom may be found in obsessive compulsive disorder, mood disorder, dermatologic, and surgical conditions. These patients might respond to psychiatric treatment and that might help them avoid unnecessary cosmetic surgery.

**Key words:** body dysmorphic disorder, epidemiology, symptoms

## **DEPARTMENT OF OPHTHALMOLOGY**

### **83. FREQUENT OUTCOMES AFTER GLAUCOMA DRAINAGE IMPLANTS**

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**Introduction.** Glaucoma represents a group of diseases defined by optic neuropathy, determined by structural change and functional deficit. It is a significant public health problem, being the leading cause of irreversible visual loss, affecting subjects older than 40 years. By the year 2020 it is estimated that there will be almost 80 million affected people in the world. The treatment strategy is influenced by patient's life expectancy, disease status, progression rate and visual function. When conventional therapies and classic surgery have failed or it is expected to be no success, the latest solution is the implantation of artificial implants. There is a multitude of drainage devices. Drainage implants have surgical and postoperative complications similar to trabeculectomy, but there are other unique complications associated with their use.

**Aim of the study.** Point out the most frequent outcomes after drainage implants use.

**Materials and methods.** A literature review of the articles published on Pubmed from 2007 to 2017 years was done. The comparisons between various drainage implants are difficult because most clinical data are derived from retrospective studies with different study populations, follow-up periods, and criteria defining success.

**Results.** Complications such as hypotony, diplopia, strabismus, endophthalmitis are all important (Sarkisian, 2009), but their incidence decreased with the passage of time due to implantation techniques improvement. Jong's study (2011) reported that by the end of the third year after surgery IOP remained better controlled by antiglaucomatous device (Ex-press) than by trabeculectomy. The success rates of the different valves (Krupin and Ahmed) are about equal at approximately 70% with a mean IOP lowering of at least 50% from the pre-operative IOP. Unfortunately, the failure rate is about 10% per year, leading to only 50% functional drainage devices in 5 years (Patel, 2010, Budenz, 2011). An important outcome is pointed to the total protein abundance levels that were increased in eyes with glaucoma surgery shows Rosenfeld (2015) and Freedman's (2013) research. The findings (increase in protein and their alteration impact on the pathways) helped explain why glaucoma filtering surgeries are associated with endothelial cell failure and increase corneal decompensation in virgin corneas and after transplantation. A prospective evaluation of corneal endothelial cell loss within the first 2 years after Ahmed aqueous shunt implantation made by Lee (2009) found increasing cell loss: 15% at 12 months and 19% at 24 months. Other factor that causes the corneal decompensation is the direct contact between the tube and the endothelium (Kim, 2016).

**Conclusions.** Glaucoma drainage implants are a good tool in preventing blindness; however, they have specific complications and controversy.

**Key words:** glaucoma, drainage implants

## DEPARTMENT OF HAEMATOLOGY

### 84. AGE RELATED NON-HODGKIN LYMPHOMAS WITH PRIMARY ABDOMINAL LYMPH NODES INVOLVEMENT

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**Introduction.** Non-Hodgkin's Lymphomas (NHL) are a heterogeneous group of malignant tumors of the lymphatic tissue that can develop from B or T, rarely from NK, cells. NHL may develop in any tissue or organ containing lymphatic tissue. One of the primary localizations of NHL are the abdominal lymph nodes, with a primary involvement rate of 7.6 to 8.2%. Due to the topographic and anatomical features of this localization, in most cases the generalized stages of the disease are diagnosed, which negatively influences the outcome of treatment and prognosis. Therefore, studying the clinical aspects of NHL with primary abdominal lymph nodes involvement is topical.



**Aim of the study.** To assess the clinical and morphological features of NHL with primary abdominal lymph nodes involvement depending on age.

**Materials and methods.** Clinical and morphological features were studied in 67 patients with NHL with primary abdominal lymph nodes involvement, who were hospitalized at the Haematologic Clinic of the Oncological Institute from Republic of Moldova. The age of the patients included in the study ranged from 2 to 73 years old as follows: children 0-18 years old – 15 cases, adults: 19-39 years old – 2 cases, 40-59 years old- 34 cases and over 60 years old - 16 cases. In all cases, the diagnosis was morphologically confirmed. Determining the degree of the tumoral process spreading was performed according to the International Classification, developed at Ann-Arbor (USA), 1971. We performed a retrospective descriptive study.

**Results.** Studying the NHL with primary abdominal lymph nodes involvement showed that the onset of NHL in abdominal nodes occurred more frequently in the age group of 40-59 years old (50.7%), followed by the patients over 60 years old (23.9%), children (22.4%) and rarely, patients from the age group 19-39 years old (3%). In all age groups men predominated (70.1%). The morphological examination determined that aggressive variants (77.6%) were more common than the indolent ones (22.4%). Stage I was found in 3 patients (4.5%), Stage II in 10 patients (14.9%), stage III in 14 patients(20.9%) and stage IV in 40 patients (59.7%). Most extranodal metastasis areas were spleen (62.5%), liver (45.0%) and bone marrow (32.5%). Less often extranodal areas were: nasopharynx (10.0%), pulmonary tissue (10.0%), pleura (7.5%) and rarely other tissues or organs.

**Conclusions.** NHL with primary abdominal lymph nodes involvement developed more frequently in people that were 40-59 years old, predominantly in males. Aggressive variants of NHL predominated. The most frequent extranodal metastasis areas were spleen, liver and bone marrow.

**Key words:** NHL, abdominal lymph nodes, age

## INTERNAL MEDICINE II

### OBSTETRICS AND GYNECOLOGY no.1

#### 85. PREECLAMPSIA AND FUTURE CARDIOVASCULAR RISK

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**Introduction.** Preeclampsia is a pregnancy-specific disorder resulting in hypertension and multiorgan dysfunction. There is growing evidence that these effects persist after pregnancy.

**Aim of the study.** To evaluate and quantify systematically the evidence on the relationship between preeclampsia and the future risk of cardiovascular diseases and to determine the association of preeclampsia and future cardiovascular risk and to explore the potential management options for these high-risk women.

**Materials and methods.** Study of obstetrical history of patients with an ischemic cardiovascular disease. The study performed in the Cardiology department of IMSP SCM-3 of the during 2014-2016. The study also included 98 pregnant women whose pregnancy was complicated by preeclampsia of various degrees of severity during 2010-2012, analyzed after 5 years.

**Results.** The study found that 42 patients out of 52 had complicated pregnancies with preeclampsia, accounting for 80.76% and 19% - 10 patients had a physiological pregnancy. Preeclampsia is a major risk factor for developing cardiovascular complications 3 times more frequently than uncomplicated pregnancies (OR 17.62; 95% CI 6.65 to 46.4) P < 0.001. Women

with a history of preeclampsia have a double risk of subsequent ischemic heart disease, stroke and thromboembolic events within the next 5-15 years after pregnancy. None of the 98 women after birth complicated with preeclampsia was not monitored, and so they developed complications.

**Conclusions.** Preeclampsia is associated with a 4-fold increase in future incident heart failure and a 2-fold increased risk in coronary heart disease, stroke, and death because of coronary heart or cardiovascular disease. This important association can be used to screen for women with an increased risk to better target counselling on lifestyle modifications such as weight loss, exercise, and a healthier diet.

**Key words:** preeclampsia, maternal morbidity, complications

## **86. CHARACTERIZATION OF THE HUMAN ENDOMETRIAL MICROBIOME AND ITS RISKS ASSOCIATED IN INFERTILITY PATIENTS: A SYSTEMATIC REVIEW**

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**Introduction.** Bacterial cells in the human body account for 1-3% of total body weight and are at least equal in number to human cells. Recent research has focused on understanding how the different bacterial communities in the body (eg, gut, respiratory, skin, and vaginal microbiomes) predispose to health and disease. For nearly 50 years, existing dogma has dictated that normal human endometrium is sacrosanct from microbial habitation in the absence of infection. However, while the vaginal microbiota has been investigated in depth, there is a paucity of consistent data regarding the existence of an endometrial microbiota and its possible impact in reproductive function.

**Aim of the study.** To summarize the evidences derived from international studies on endometrial microbiome, its composition and potential influence in fertility and reproductive outcomes.

**Materials and methods.** This study is a systematic review of data of the characteristics of endometrial microbiome in women with infertility and its association with the cause of infertility, conception rates and early pregnancy loss. Systematic literature searches of the electronic databases: Pubmed, EMBASE, the Cochrane library, MEDLINE, INTECH were performed up to February 2018 and included 44 studies. Studies were included if they reported on, at least, one of the following: characterization of endometrial microbiome in infertility – 30 studies, association with conception – 18 studies, with early pregnancy loss – 15 studies.

**Results.** The most represented genus was *Lactobacillus* (71.7% of identified bacteria); while *Gardnerella* (12.6%), *Bifidobacterium* (3.7%), *Streptococcus* (3.2%), and *Prevotella* (0.866%) were the other most common genera. Based on its composition, the microbiota in the endometrial fluid, comprising up to 191 operational taxonomic units, was defined as a *Lactobacillus*-dominated microbiota - >90% *Lactobacillus* spp., or a non-*Lactobacillus*-dominated microbiota - <90% *Lactobacillus* spp. with >10% of other bacteria (*Bacteroides*, *Prevotella*, *Fusobacterium*, *Atopobium vaginae*, *Mobiluncus curtisii*). The presence of a non-*Lactobacillus*-dominated microbiota in a receptive endometrium was associated with significant decreases in implantation [60.7% vs 23.1% (P=.02)], pregnancy [70.6% vs 33.3% (P=.03)], ongoing pregnancy [58.8% vs 13.3% (P=.02)], and live birth [58.8% vs. 6.7% (P=.002)] rates.

**Conclusions.** The human microbiome has been termed the second genome, and its importance in reproductive success and failure has yet to be fully appreciated. The reviewed studies demonstrated the existence of an endometrial microbiota that is highly stable during the

acquisition of endometrial receptivity. However, pathological modification of its profile is associated with poor reproductive outcomes.

**Key words:** endometrium, microbiome, infertility.

## **87. THE USE OF LAST MENSTRUAL PERIOD AND THE LEVEL OF HUMAN CHORIONIC GONADOTROPIN AS SINGLE METHODS TO DETERMINE THE GESTATIONAL AGE BEFORE MEDICAL ABORTION**

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**Introduction.** Most doctors prefer to make a pelvic examination or an ultrasound before abortion to estimate gestational age, which increases the cost and time for medical abortion and can be provided only by certified obstetrician gynecologists.

**Aim of the study.** To evaluate the certainty of women about their last menstrual period, to determine the gestational age and its correlation with the level of human chorionic gonadotropin, the safety of providing a medical abortion within less than 56 days without a prior pelvic examination and ultrasound.

**Materials and methods.** We conducted a retrospective study in which the last menstrual period of 150 women was evaluated. We have also determined the levels of human chorionic gonadotropin with a semi-quantitative pregnancy test in five concentration ranges: 25 mIU/ml, 100 mIU/ml, 500 mIU/ml, 2000 mIU/ml și 10000 mIU/ml and correlated the results with gestational age. Usually, the level of human chorionic gonadotropin at a gestational age of 8 weeks is less than 10000 mIU/ml and at the age of 10-12 weeks is more than 10000 mIU/ml. We have assessed the possibility of excluding pelvic examination and ultrasound for evaluation of gestational age by determining the efficacy of medical abortion and the complications that appeared.

**Results.** Out of 150 women seeking medical abortion, 149 (99.33%) were sure of their last menstrual period and only one patient, 0.67%, could appreciate the date of the unprotected sexual contact; 53.4% women had a gestational age of 4-5 weeks; 45.4% had 6-7 weeks and 1.2% had a gestational age of 8 weeks. Out of women with a gestational age of 4-5 weeks, 92.5% had the level of human chorionic gonadotropin of 500 mIU/ml; 5% had 100 mIU/ml; 1.25% had a value of 100 mIU/l and 1.25% had the level of 2000 mIU/ml. In the group of women with a gestational age of 6-7 weeks, 95.6% had the level 500 mIU/ml; 3% - 2000 mIU/ml, and 1.4% had the value of human chorionic gonadotropin of 100 mIU/ml. In women with 8 weeks of pregnancy only one woman, 50% had the level of human chorionic gonadotropin 500 mIU/ml and 50% had 2000 mIU/ml. No woman had a value of human chorionic gonadotropin over 10000 mIU/ml, which indicates that no woman had a gestational age over 10 weeks of pregnancy. The efficacy of medical abortion was 98.64 % and only 1.36% of women had complications, incomplete medical abortion and there were no suspicions that any woman had a gestational age over 9 weeks.

**Conclusions.** Last menstrual period and the level of human chorionic gonadotropin are sufficient to determine the gestational age and to provide a safe medical abortion without pelvic examination and ultrasound.

**Key words:** last menstrual period, human chorionic gonadotropin, medical abortion

## **88. PREMATURE RUPTURE OF MEMBRANES IN PRETERM BIRTH: RISK FACTORS AND PERINATAL OUTCOMES**

Authors: **Veronica Cotelea, Alina Alsatou, Mihaela Burac, Natalia Gheorghieva**

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**Introduction.** Premature rupture of membranes (PROM) refers to rupture of the fetal membranes prior to the onset of labor irrespective of gestation age. PROM represents a serious problem of modern obstetrics. In 25-38% of cases premature birth is preceded by PROM, which contributes to the increase of perinatal morbidity and mortality in 30% of cases. One of the most difficult issues in the management of a pregnancy with PROM is the correlation between the risk infection in the case of prolonged pregnancy and the risk of prematurity due to delivery.

**Aim of the study.** To assess the risk factors for the onset of premature rupture of the membranes and their relationship to perinatal outcomes, depending on the management.

**Materials and methods.** A retrospective study of 100 clinical cases was conducted. They were divided into 2 groups: the 1st group included 60 cases of preterm births complicated by PROM with a long anhydrous period and the use of expectant management. Control group (II) included 40 cases of PROM with the use of active management. The study was conducted in the Municipal Clinical Hospital Nr.1, Chisinau. The results were processed in SPSS 16 and Microsoft Excel 2010.

**Results.** We identified the risk factors for the development of PROM. The most significant of them were: mother's age  $29.36 \pm 6.58$  years (40%), multipara - the presence of 3 or more pregnancies in anamnesis (46.7%), primiparous (63.3%), complicated obstetric (58.3%) and gynecological (13.4%) anamnesis, nonspecific infections of the genital tract (65%), extragenital pathology (85.2%). Perinatal outcomes in PROM, depending on the expectant management vs active management, were complicated by perinatal mortality of 1.7% vs 38%, indicating a more favorable course of prolonged pregnancy.

**Conclusions.** Analyzing the results, it was revealed that low level of health in pregnant women and high frequency of obstetrical pathology correlates with unfavorable perinatal outcomes. The recently adopted expectant management in premature labor complicated by PROM, was proven to improve the perinatal outcome.

**Key words:** premature rupture of membranes, anhydrous period, perinatal outcomes.

## **89. CORRELATIVE ASPECTS OF OVARIAN RESERVE AND SEVERITY OF POLYCYSTIC OVARY SYNDROME**

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**Introduction.** Polycystic ovary syndrome is primarily diagnosed in the early years of the fertile period. Clinical expressions are variable, and may include oligo/anovulation, hyperandrogenism (clinical or biochemical) and ultrasonographic polycystic ovary signs, according to the Rotterdam criteria. All of these complexes are the cause of anovulatory infertility (Fanchin R1, Schonäuer LM, Righini C, Human Reproduction, 2003, Farquar C., Lilford RJ, Marjoribanks J., Chochrane Database Syst. Rev., 2007) A variety of clinical and experimental studies are directed to the PCOS events. However, the etiology of the syndrome remains obscure, and the variability of phenotypic expression continues to be a challenge both from the clinical and research point of view (Leelan L., Acharya U., J. Obstet, Gynaecol., 2009).

**Aim of the study.** To identify what extent AMH correlates with LH, FSH, T, IMC and USG criteria in PCOS patients; to assess the impact of AMH on the severity of the polycystic ovary syndrome.

**Materials and methods.** 40 patients were selected for the study. The diagnosis of patients with polycystic ovary syndrome was based on anamnesis, clinical parameters and paraclinic markers (biochemical and echographic). Research was based on serum levels tests of Anti-Müllerian hormone, testosterone, Follicle-stimulating hormone and luteinizing hormone. The exclusion criteria for the patients were: androgen-producing ovarian tumors, primary hypothyroidism, liver pathology with protein synthesis deregulation, idiopathic hirsutism, hyperprolactinemia, Cushing's disease, peritoneal-tubal and uterine infertility, endometriosis.

**Results.** The following correlations have been established: AMH and LH ( $r = 0.479$ ), correlation between AMH and FSH ( $r = 0.297$ ), correlation between AMH and T ( $r = 0.540$ ), AMH and IMC ( $r = 0.697$ ), AMH and antral follicle count ( $r = 0.818$ ).

**Conclusions.** The study evaluated an inversely proportional correlation between AMH and follicle stimulating hormone ( $p < 0.001$ ) and directly proportional between AMH, luteinizing hormone and testosterone, and the success rate of laparoscopic surgery, as with luteinizing hormone, decreases inversely these two hormonal values;  $p < 0.001$ .

**Key words:** polycystic ovary syndrome, anti-Müllerian hormone.

## 90. PRESENTATION AND SOCIAL PERSPECTIVE OF MENSTRUATION IN BANGLADESHI WOMEN

Author: **Abu Talh Bin Fokhrul**

MAG Osmani Medical College from Bangladesh

**Introduction.** Presentation and awareness about menstruation, considered a curse in Bangladesh, is of utmost importance because women are the ultimate sufferers without having proper knowledge of menstrual hygiene. So in this paper, we will discuss about the presentation and social perspective of menstruation in Bangladeshi women.

**Materials and methods.** The research was cross sectional and we took convenient type of non-randomized samples of a group of 650 young and middle aged women.

**Results.** The results reported that among 650 women, 390 were young aged between the age group 15-34 and 260 were middle aged between the age group 35-45. 58.33% women were found taking painkillers for menstrual pain and 41.67% were found taking contraceptive pills for irregular menstruation. Obesity, lack of exercise, depot contraceptives, miscarriage, pelvic infections etc. were found to be the clinical causes behind irregular menstruation and severe menstrual cramps. Food allergies and gall bladder problem were present.

**Conclusions.** Misconceptions about menstruation, family restriction and dominant attitudes of male are the basic risk factors prevailing in Bangladesh. Providing women with knowledge and management methods prior to menarche, privacy and a positive social environment around menstrual issues have the potential to benefit the womenfolk of Bangladesh.

**Key words:** menstrual hygiene, dominant attitude

## 91. EFFECTS OF THE IN VITRO FERTILIZATION ON MULTIPLE BITRH, PRETERM DELIVERY AND LOW BIRTH WEIGHT

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**Introduction.** Assisted reproduction technology represents a current solution in the treatment of couple sterility. However, the introduction of IVF (in vitro fertilization) into mainstream clinical practice has been accompanied by concerns regarding the number of multiple gestations that it can produce, as multiple births have significant medical consequences for mothers and offspring.

**Aim of the study.** Assessment of the impact of IVF on changes in the rates of multiple births, preterm delivery and low birth weight.

**Materials and methods.** The research was carried out retrospectively in municipal hospital Nr.1 from Chisinau, in obstetrics departments, according to the questionnaire that included specific indicators of birth after IVF. The present study included 106 histories of birth of pregnant women after IVF, delivery terms 22-41 weeks. Statistical analysis was performed in Microsoft Excel.

**Results.** 84.9% pregnant patients were primiparous with a complicated gynecological and obstetric anamnesis with recurrent miscarriages, extrauterine pregnancies with tubectomies, polycystic ovary syndrome, history of infertility. Primary infertility was recorded in 37(34.9%) patients, secondary infertility in 28(26.4%) patients. According to the type of pregnancy in 60 (56.6%) cases the pregnancy was monofetal, in 46(43.4%) cases - multiple pregnancy. The multiple pregnancy group (46 cases) was divided in: duplex 43(93.5%) cases, triplex 2(4.3%) cases, quadruplex 1(2.2%) cases. The rate of premature births was 31.1% (33 cases), at term births 63.2% (67 cases), postterm birth (over 41 weeks) 5.7% (6 cases). Multiple pregnancy is a clear risk factor for preterm birth, however, there is an additional small but statistically significant 23% increase in the relative risk of preterm birth in IVF twins compared with natural twins. In the monofetal births, the range of 500-2499 g included 8(13.4%) newborns, the rate of premature infant being 4 cases. The other newborns had normal weight. The weight of newborns from multiple pregnancies, 96 newborns: 42 (43.7%) had the weight in the range of 2500-3999 g, the other 54(56.3%) weighted in the range of 500-2499 g, with 15 cases of premature births.

**Conclusions.** 1. IVF is a substantial contributor to changes in the very low birth weight rate and delivery before 30 weeks, which is partly related to multiple births. 2. Pregnancies following IVF are at higher risk of perinatal mortality, preterm delivery, small for gestational age, and low or very low birth weight compared with spontaneous conceptions.

**Key words:** in vitro fertilization, risk factors, multiple births, preterm delivery, low birth weight.

## 92. ENDOMETRIOSIS AND APPENDICITIS

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**Introduction.** Endometriosis is a common condition that can affect up to 15% of women at childbearing age. Women with endometriosis have multiple surgeries due to algic syndrome, infertility, endometriomas and adhesions. Appendicitis is also frequently found in patients with endometriosis. The risks and benefits associated with an elective coincidental appendectomy should be considered.

**Aim of the study.** Assessing the incidence of appendicitis in patients with different forms of endometriosis compared to patients without endometriosis.

**Material and methods.** In a retrospective study, data were obtained by chart review of an internal database for women who had endometriosis. We analyzed 318 women with endometriosis and infertility, and 150 women with infertility who underwent diagnostic laparoscopy, for a 3 years period (2014-2016). We compared the rate of endometriosis of the appendix in women who were diagnosed with deep infiltrating endometriosis (DIE), superficial endometriosis, and in patients with no endometriosis at all.

**Results.** 318 women were diagnosed with endometriosis: 165 (51.88%) had deep endometriosis and 153 (48.11%) superficial endometriosis. The prevalence of AppE was 23.27% (74/318). 18 (11.76%) of 153 women with superficial endometriosis and 56 (33.93%) of 165 with DE were affected. The prevalence of appendicitis in control group was 4.6 % (7/150). Frequency of AppE was increased among women with DE, abnormal appendix appearance, and surgical indication (all  $P < 0.001$ ). Women with DE had a higher risk of AppE compared to women without endometriosis, and a higher risk of AppE compared to those with superficial endometriosis.

**Conclusion.** The study demonstrated the need to check the appendix in patients with endometriosis, particularly in those with deep ovarian endometriosis on the right (endometrium on the right). It also proved the importance of its removal during endometriosis surgery, for it reduces the need for repeated surgery up to 5 times compared to patients without endometriosis. Women with DE have an increased risk of AppE. Coincidental appendectomy should be considered a part of complete endometriosis excision for these patients.

**Key words:** endometriosis, appendicitis

## DEPARTMENT OF OBSTETRICS AND GYNECOLOGY no.2

### 93. THE REPRODUCTIVE HEALTH PROFILE OF WOMEN WITH SERONEGATIVE SPONDYLOARTHROPATHIES, STUDY PRESENTATION

Author: **Cristina Mursiev**

Scientific adviser: Iliadi-Tulbure Corina MD, PhD, Associate professor; Russu Eugen, MD, PhD, Associate professor; Zinaida Sarbu, MD, PhD, Associate professor, Department of Obstetrics and Gynecology no.2

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**Introduction.** Rheumatic diseases often affect women during their childbearing years, when pregnancy is an expected event. For years, women with potentially serious systemic autoimmune diseases have been advised to not get pregnant. Now we know that, with careful medical and obstetric management, most of these women can have successful pregnancies. Successful, however, does not mean uneventful. Doctors and patients must be ready to deal with possible complications for both mother and child. Further, women should not consider getting pregnant until their rheumatic disease is under control. A frequently encountered group of rheumatic diseases that affect women of reproductive years are the seronegative spondyloarthropathies (chronic reactive arthritis, psoriatic arthritis, ankylosing spondylitis and undifferentiated spondyloarthropathies). Each pregnancy in these women roots an unique interest and requires an individualized management, sometimes becoming a clinical challenge for the practitioner, as an unified approach is still missing.

**Aim of the study.** In this study, we aim to evaluate the reproductive health of women of childbearing age that were previously diagnosed with one of the four upper mentioned types of seronegative spondyloarthropathies.

**Materials and methods.** The prospective observational study is based on the data of women in their reproductive years (15-49 y.o.) admitted to the Rheumatology Department of the Clinical Republican Hospital from Chisinau with the diagnosis of seronegative spondyloarthropathies (chronic reactive arthritis, psoriatic arthritis, ankylosing spondylitis and undifferentiated spondyloarthropathies). At this moment, the data of 12 patients/ 2 pregnant women have been collected. They are evaluated from the perspective of their reproductive health, with a more detailed assay of their obstetric anamnesis. Pregnant women from this group undergo a specific retrospective evaluation.

**Conclusions.** We expect to identify the particularities of the reproductive health in women from our interest group, in order to develop an individualized approach according to their age, type of pathology, procreation decision and pregnant/non-pregnant state.

**Key words:** seronegative spondyloarthropathies, pregnancy, women.

#### **94. MATERNAL RISK FACTORS IN UMBILICAL CORD ENTANGLEMENT**

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**Introduction.** The most common cord entanglement is nuchal cord with an incidence of 15-34%; single loop 24-28% and multiple loops 0.5-3.3%. Nuchal cord occurs when the umbilical cord becomes wrapped around the fetal neck at 360°. At delivery, the encircled cord might be compressed, causing blood flow obstruction. As shown previously, this intermittent regional obstruction may result in neonatal compromise. Thus, it is very interesting to study the risk factors that lead to the entanglement of the umbilical cord.

**Aim of the study.** To evaluate the relationship between maternal risk factors and entanglement of umbilical cord around the fetal neck.

**Materials and methods.** In this prospective cohort study, perinatal outcomes of 107 pregnancies complicated with nuchal cord (study group) were compared with 293 uncomplicated pregnancies (control group). The present study was carried out at the First City Clinical Hospital, Perinatal Center of the Republic of Moldova. Singleton pregnancies in cephalic presentation were included. Undated pregnancies were excluded. The main variables studied were: maternal age, parity, specific and non-specific infections in pregnancy and in anamnesis, and extragenital diseases. The results were processed with the following software: Statistical Package for the Social Sciences (SPSS 20) and Microsoft Office Excel 2010.

**Results.** This study demonstrated that, a nuchal cord was present in 107 (26.75%) of 400 singletons. Significant independent risk factors for nuchal cord formation were: parity ( $\chi^2=6.122$ ,  $df=2$ , Cramer's  $V=0.124$ ,  $p=0.047$ ), TORCH-infection ( $\chi^2=6.019$ ,  $df=1$ ,  $\phi=0.133$ , Fisher's  $p=0.015$ ), pelvic inflammatory diseases ( $\chi^2=7.505$ ,  $df=1$ ,  $\phi=0.147$ , Fisher's  $p=0.006$ ), sexually transmitted infections ( $\chi^2=22.718$ ,  $df=1$ ,  $\phi=0.254$ , Fisher's  $p=0.000$ ) and iron-deficiency anemia in pregnancy ( $\chi^2=5.145$ ,  $df=1$ ,  $\phi=0.119$ ,  $p=0.023$ ). No statistically significant differences in maternal demographic, obstetrical and gynecologic features were found between groups.

**Conclusions.** The scientific research has shown that: parity, TORCH-infection, pelvic inflammatory diseases, sexually transmitted infections and iron-deficiency anemia in pregnancy should be added to the list of known nuchal cord risk factors.

**Key words:** maternal risk factors, nuchal cord, umbilical cord

#### **95. EVALUATION OF AN OVARIAN TUMOR'S POTENTIAL FOR AGGRESSIVENESS IN PREGNANCY USING LOGICAL TOOLS FOR PRE-OPERATORY PROGNOSIS**

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**Introduction.** The evaluation of a tumor's aspect in case of an expansive ovarian neo-formation is a controversial chapter in the specialized literature. For most practitioners it causes uncertainties in the management of both gynecological and obstetric patients.

**Aim of the study.** Getting practitioners acquainted with helpful logical instruments, elaborated for optimizing the differential pre-operative diagnosis of the ovarian tumors during pregnancy.

**Materials and methods.** This research represents the analysis of the results collected from 35 pregnant women diagnosed, who got a surgery for ovarian cysts during pregnancy. In each case, pre-operative, the ultrasound characteristics of the ovarian tumors have been modulated and analyzed by a computer together with the clinical data and serological results of tumoral markers. The results were compared with the histological data. The logical instruments analyzed during the research were the ultrasonography Sassome score, the Pelvic Mass Score(PMS), and the IOTA model. For a better estimation of the specificity and sensibility of the diagnostically method, "borderline" ovarian tumoral formations were considered malignant.

**Results.** The Sensibility(S) and specificity(s) of the tests analyzed during the research are almost similar with the results displayed by the specialized literature: the ultrasonography Sassome score (PMS) : S - 96%; s - 70%; IOTA models: S - 97%; s - 80%. The results from the ovarian formations histological analysis are: n=35 anatomic surgical pieces, in 19 cases (54%) simple cystadenomas or mixt sero-mucinous cysts were confirmed, 6 cases (17%) were ovarian teratomas containing embryonal tissues; other 4 cases, 11% were functional cysts such as theca luteal cysts and cysts of the yellow body; in other 3 cases (9%) endometrial cysts were found; 2 cases (6%) were borderline tumors. In one case (3%), ovarian cancer was confirmed using histological and imagistic tests.

**Conclusions.** Evaluating different methods of diagnosis, we have assessed their high sensibility and specificity, and a better prognosis in ovarian tumors, facts confirmed by literature data. Further studies are necessary to be done, to estimate the utility of different methods of diagnosis of ovarian tumors in pregnancy, all of them having a huge role in decision making about surgical or expectative management. The use of the tests is not expensive and can be easily applied in everyday practice for strengthening the diagnostic methods at the moment of choosing an appropriate treatment approach.

**Key words:** ovarian tumor, pregnancy, diagnostic tools

## **96. NEONATAL RESULTS IN BABIES BORN TO MOTHERS WITH ACTIVE TUBERCULOSIS OF THE RESPIRATORY ORGANS**

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Scientific adviser: Olga Cernetchi, MD, PhD, Professor, Head of the Department of Obstetrics and Gynecology no.2

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**Introduction.** Extragenital maternal pathology adversely affects both the intrauterine development of the fetus and the health of the newborn. In the case of active tuberculosis, the incidence of tuberculosis poisoning, the degree of hypoxia, the immune system changes, the placental circulation disorders often lead to fetal-placental insufficiency, intrauterine hypoxia, and intrauterine growth restriction of the fetus.

**Aim of the study.** Analysis of neonatal pathology in 82 children born by mothers with active tuberculosis of respiratory organs.

**Materials and methods.** We analyzed neonatal outcomes in 82 children born to mothers with active tuberculosis of respiratory organs during 2000-2010; the control group consisted of 120 children born by healthy mothers. The incidence and character of neonatal complications were recorded.

**Results.** Babies at term predominated - 87.8% of cases, respectively 88.2% of cases ( $p>0.05$ ). The percentage of premature neonates was 12.2% versus 10.1% in the control group ( $p>0.05$ ). The mean birth weight was  $3135.6 \pm 67.2\text{g}$  versus  $3216.1 \pm 54.3\text{g}$  in the control group ( $p>0.05$ ). The neonatal morbidity rate in the study group was 49.4% compared to 22.7% in the control group ( $p<0.001$ ). The intrauterine growth restriction of the fetus was identified in every 4th child born in the study group (24.7% vs. 12.6%,  $p<0.05$ ). There were 24.7% cases of perinatal EHI (hypoxic-ischemic encephalopathy) compared with 11.8% in the control group ( $p<0.05$ ). The incidence of intrauterine infections in neonates was 11.1% compared to 0% in the control group ( $p<0.01$ ).

**Conclusions.** The newborns of patients with active tuberculosis of the respiratory organs showed a high percentage of perinatal pathology, ante- and intranatal hypoxia, prematurity, intrauterine growth restriction of the fetus, forming the high-risk group for the development of EHI perinatal involvement, with a complicated evolution of the early neonatal period.

**Key words:** babies, tuberculosis of respiratory organs, neonatal outcomes

## DEPARTMENT OF ONCOLOGY

### 97. TREATMENT CHARACTERIZATION AND MANAGEMENT OF BORDERLINE OVARIAN TUMORS

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**Introduction.** Borderline ovarian tumors (BOT) are malignant epithelial ovarian tumors with a very low incidence, therefore lacking sufficient clinical experience in diagnostics and treatment.

**Aim of the study.** This study characterized the histology, clinical features, diagnostics and therapy of BOT including patients treated at the Department of Oncogynecology of the *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova.

**Materials and methods.** In this retrospective study, patients with BOT treated between 2000 and 2016 were analyzed according to their histological and clinical reports.

**Results.** A total of 45 patients were enrolled. The median age was 45.6(range=18-83) years. Distribution of histological subtypes was: serous in 31 patients (57.4 %) and mucinous in 14 patients (42.6%). All patients underwent surgery and 6 patients (14.8%) were treated according to actual therapy recommendations during the initial surgery. Six patients (14.8%) received adjuvant chemotherapy contrary to treatment recommendations. In the case of 30 patients (66.7%), the definitive histological result matched in 88.9%. During average follow-up of 30.3 months (range=0-115,5 months), 6 patients (14.8%) developed tumor recurrence after 9 and 29 months, respectively, two patients (3.7%) died of causes other than BOT.

**Conclusions.** Our study critically demonstrated that until a few years ago, BOTs were not usually treated according to international therapy recommendations chemotherapy and surgery. The rate of tumor recurrence was very low.

**Key words:** borderline ovarian tumors, treatment, oncogynecology.

## DEPARTMENT OF PNEUMOLOGY AND ALLERGOLOGY

### 98. THE ROLE OF STREPTOCOCCUS PNEUMONIAE IN ETIOLOGY OF COMMUNITY-ACQUIRED PNEUMONIA AMONG ADULTS

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**Introduction.** Streptococcus pneumonia (pneumococcus) remains the most common bacterial cause of community-acquired pneumonia (CAP), however significant challenges regarding the diagnosis, treatment, and prevention of this infection persist. Although pneumococcus is considered a common CAP etiological agent in children and in adults, the burden of this disease is considerably underestimated since the incidence data are derived largely from bacterial infections, though the most of pneumococcal infections are non-invasive.

**Aim of the study.** To evaluate the incidence of Streptococcus pneumoniae in etiology of CAP in adults in routine clinical practice.

**Materials and methods.** We have retrospectively evaluate all CAP patients admitted to a pneumology department in the Institute of Phtisiopneumology *Chiril Draganiuc*, during a one year period. The study cohort included 287 patients: 153 males and 134 females, with an average age of 60 (45-70) years. In order to determine the etiology of CAP microbiological analysis of sputum has been performed: sputum Gram-stain and sputum cultures in 238/287 patients with productive cough. Haemocultures and urinary pneumococcal antigen determination were performed in 49 patients with severe CAP (admitted in intensive care unit). Histological examination of the lungs was considered in 24 patients (fatal cases).

**Results.** The etiology of CAP was confirmed in 29% (83/287) patients. Streptococcus pneumonia was identified in 25% of cases (21/83 patients): by sputum culture in 6 patients, by urinary antigen determination in 5 patients. Evidence of typical morphological stages of pneumococcal pneumonia was found in 10 patients.

**Conclusion.** Etiological diagnosis of CAP in routine clinical practice is often difficult, with evidence of an etiological agent in about 1/3 cases. *Streptococcus pneumoniae* is a common pathogen in CAP etiology, but its identification is often difficult.

**Key words:** etiology, CAP, streptococcus, diagnosis

## 99. PREDICTORS OF LUNG FUNCTION IMPAIRMENT IN PATIENTS WITH NON-CYSTIC FIBROSIS BRONCHIECTASIS

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**Introduction.** In patients with non-cystic fibrosis bronchiectasis (NCFB), lung function is highly variable, from a normal spirometry to an airflow obstruction or restriction.

**Aim of the study.** To determine the factors associated with lung function impairment in NCFB patients.

**Materials and methods.** A cross-sectional study on 67 patients with NCFB admitted to a tertiary level hospital in Republic of Moldova was realized. Clinical, radiological - modified Reiff (mReiff) score and lung functional variables were analyzed. The data were presented as mean  $\pm$  standard deviation in the case of quantitative variables, and as the absolute value and percentage for qualitative variables. To identify variables independently related to FEV1, and their contribution and specific weight in accounting for the total variance of FEV1, a multiple linear regression analysis was performed.

**Results.** The cohort consisted of 67 consecutive patients with idiopathic (29 patients, 43%), COPD associated (23 patients, 34%) and post-tuberculous (15 cases, 23%) bronchiectasis. Mean age was  $58.19 \pm 12.05$  years, and 66% of them were mails. More than half of the patients (57%,

n=38) were current/previous smokers. A FEV1 more than 80% was registered in 27% (n=18) cases. A mild obstruction, with FEV1 between 50% and 80% was established in 19% (n=13) of patients, a moderate one with FEV1 ranging from 30% to 50% - in 36% of patients, and a severe obstruction with FEV1 less than 30% was characteristic for 18% of cases (n=12). Mean FEV1 was  $55.42 \pm 28.86\%$ . The majority of the patients (61%, n=41) had a mReiff score with less than 6 points. A worse mReiff score with more than 12 points was determined in 15% (n=10) of cases. When FEV1 was predicted, it was found that mReiff score (Beta = -0.721, p<0.001), smoking status (Beta = -0.499, p<0.001), subjects age (Beta = -0.404, p<0.001) and bronchiectasis etiology (Beta = -0.362, p=0.001) were significant predictors, globally explaining 55% of FEV1 variability (p<0,001). No significant correlation was recorded between FEV1 and presence of bacterial growth in sputum culture and daily use of respiratory treatment.

**Conclusions.** The mReiff score, smoking status, subjects age and bronchiectasis etiology are significant determinants of FEV1 in patients with non-cystic fibrosis bronchiectasis.

**Key words:** non-cystic fibrosis bronchiectasis, lung function

## 100. THE IMPACT OF THE TABAGISM ON THE ATTITUDE OF MEDICAL STUDENTS IN THE REPUBLIC OF MOLDOVA

Author: **Nicolae Demenciuc**

Scientific adviser: Alexandru Corlateanu, MD, PhD, Associate professor, Department of Pneumology and Allergology

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**Introduction.** Smoking is the most common exogenous cause of human's cancer. It is responsible for 90% of cases of lung cancer. About 1.1 billion people use tobacco worldwide. Smoking causes more than 6 million deaths annually, mainly due to cardiovascular disease, various cancers and chronic respiratory diseases. It is expected that by 2030, there will be 10 million deaths a year related to tobacco use.

**Aim of the study.** The aim of this survey was to assess whether smoking habits influenced students' attitudes towards tobacco control.

**Materials and methods.** The population of the cross section consisted of 342 respondents. All participants were 3rd year students, Faculty of Medicine no.1. A self-administered and anonymous questionnaire was distributed. The questionnaire and data analysis period was conducted during May 2017. After verifying of the questionnaires, 280 of these were validated (81.87%). Of the total population, 73.6% were women and 26.4% were men. The majority of respondents (97.8%) were aged between 20 and 26 years.

**Results.** Smoking students consider that the doctor is a model for his patient only in 64.6%, while non-smokers had said the same thing in 80.1% (OR 2.3, CI 95%, p≤0.05). Smoking respondents are likely to accept smoking in public places (OR 4.3, CI 95%, p ≤0.001%), bars, pubs (OR 3.9, CI 95%, p ≤0.001%) or even restaurants (OR 8.3; CI 95%; p <0.001%).

**Conclusions.** Following the analysis of the processed data, it was concluded that smoking students tend to neglect the physician's role in abandoning smoking by the patient.

**Key words:** smoking, lung cancer, students, attitudes.

## 101. ISONIAZID MONORESISTANCE - IMPACT ON TREATMENT OUTCOMES IN PATIENTS WITH PULMONARY TUBERCULOSIS

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<sup>2</sup> *Chiril Draganiuc* Pneumophthysiology Institute of the Republic of Moldova

**Introduction.** Isoniazid monoresistance is the most common type of single TB drug resistance worldwide. There is no strong evidence regarding the best treatment regimens in this group of patients.

**Aim of the study.** To assess the impact of HR tuberculosis(TB) on treatment outcomes and survival among pulmonary TB patients treated under TB control program in the Republic of Moldova.

**Materials and methods.** We have performed a comparative retrospective analysis of treatment outcomes in all pulmonary TB patients registered in the National Electronic TB data base (SIME TB) during 2012-2016. Only patients with positive culture and proven isoniazid monoresistance or pan-susceptibility to the first line drugs were included.

**Results.** During 2012-2016, 191 monoresistant and 1889 pan-susceptible pulmonary TB cases were registered in SIME TB. No differences in age, gender, previous history of TB and comorbidities between monoresistant and pan-susceptible patients have been identified. All study subjects were treated with first line TB drugs regimens recommended by National Treatment Guidelines. Contrary to the expectations no differences were identified between pan-susceptible and isoniazid monoresistant subjects regarding the rates of cure(84.2% vs 84.8%,  $p > 0.05$ ), treatment failure (3.54 vs 5.24%,  $p > 0.05$ ) and death (6.65% vs 5.76%,  $p > 0.05$ ). At the same time monoresistant subjects had a shorter treatment duration than those with pan-susceptibility (141 vs 224 days,  $p < 0.0001$ )

**Conclusion.** Our findings suggest that compared with pan-susceptible TB, patients in with isoniazid monoresistant TB treated under programmatic condition in Republic of Moldova have similar final TB treatment outcomes including all-cause mortality.

**Key words:** susceptible TB, treatment outcomes, treatment regimens

## DEPARTMENT OF PNEUMOPHTYSIOLOGY

### 102. RISK STRATIFICATION BY A SIMPLE CLINICAL SCORE (CRD-45) IN PATIENTS WITH TUBERCULOSIS

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**Introduction.** Tuberculosis is a leading cause of morbidity and mortality worldwide. According to the World Health Organization, 10.4 million people developed tuberculosis in 2016 and 1.7 million people died from this disease.

**Materials and methods.** We evaluated risk factors from in-hospital death in patients admitted with tuberculosis between January 2012 and March 2017 at a tuberculosis referral hospital in Borstel, Germany.

**Aim of the study.** Risk factors assessment in patients with tuberculosis as mortality predictors.

**Results.** Among 354 patients admitted to the Medical Clinic of the Research Center Borstel, Germany, 12 patients died in hospital. Median duration from admission to in-hospital death was 70 days (Interquartile range (IQR) 23 - 129). Four variables 1) >50 pack years of cigarette smoking, 2) renal insufficiency, 3) diabetes mellitus and 4) >45 years of age were predictors of mortality in patients with tuberculosis. When none of these variables were present the risk of in-hospital mortality was 1.0%. With 2, 3 and 4 of the variables present the risk of in-house mortality increased to 3.7%, 6.5%, 33% and 50%.

**Conclusions.** A simple score (CRD-45 TB-score) based on 4 clinical variables was highly predictive for the in-house mortality in patients with tuberculosis from this cohort. Generability of this score to predict in-house morbidity of patients with tuberculosis should be prospectively evaluated in a larger multicenter cohort.

**Key words:** tuberculosis, in-hospital death, risk evaluation, CRD-45 TB-score

### **103. COMPARISON OF MOLECULAR DRUG RESISTANCE TESTING AND PHENOTYPIC DRUGRESISTANCE TESTING IN MULTI- AND EXTENSIVELY DRUG-RESISTANT TUBERCULOSIS**

Author: **Hape Grobbel**

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International Health/Infectious Diseases, University of Lübeck, Germany

**Introduction.** For the treatment of MDR and XDR tuberculosis, it is important to select the most suitable drug regimen. The resistance testing procedure should be as fast and accurate as possible. Within the framework of personalized medicine, the most suitable therapy approach for the individual patient should be found. With the faster available information from a new form of susceptibility testing, the best regimen could be created in a shorter period of time and the appropriate therapy for the patient could be initiated.

**Aim of the study.** With our study we want to compare the genotypic drug resistance testing with phenotypic drug resistance testing. It will demonstrate to what extent the measured resistance results overlap and where there may be differences.

**Materials and methods.** We compared the utility of genotypic DST assays with phenotypic DST (pDST) using Bactec 960 MGIT or Löwenstein-Jensen to construct M/XDR-TB treatment regimens for a cohort of 25 consecutive M/XDR-TB patients and 15 possible anti-TB drugs. Genotypic DST results from Cepheid GeneXpert MTB/RIF (Xpert) and line probe assays (LPAs; Hain GenoType MTBDRplus 2.0 and MTBDRsl 2.0) and whole-genome sequencing (WGS) were translated into individual algorithm-derived treatment regimens for each patient. We further analyzed if discrepancies between the various methods were due to flaws in the genotypic or phenotypic test using MIC results.

**Results.** Compared with pDST, the average agreement in the number of drugs prescribed in genotypic regimens ranged from just 49% (95% confidence interval [CI], 39 to 59%) for Xpert and 63% (95% CI, 56 to 70%) for LPAs to 93% (95% CI, 88 to 98%) for WGS. Only the WGS regimens did not contain any drugs to which pDST showed resistance. Importantly, MIC testing revealed that pDST likely underestimated the true rate of resistance for key drugs (rifampin, levofloxacin, moxifloxacin, and kanamycin) because critical concentrations (CCs) were too high.

**Conclusions.** With the analysis of the genome, even in M/XDR strains with complex resistance patterns it is possible to characterize these resistances. The procedure is fast and the results are very similar to those of phenotypic testing. Only for some drugs, the susceptibility test has to be carried out phenotypically in order to compile the final regimes.

**Key words:** Mycobacterium tuberculosis; drug resistance testing; molecular genetics

### **104. ADDITIONAL SECOND LINE TB DRUG RESISTANCE IN HIGH BURDEN MDR TB SETTING**

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**Introduction.** Standard treatment regimen containing 4 second line tuberculosis drugs (SLD) is currently prescribed in multidrug resistant tuberculosis (MDR TB) patients while drug sensitivity test (DST) results are pending. However, potential additional resistance to SLD could lead to exposure of these patients to non-efficient toxic regimen during 2-4 weeks of pending period. Therefore, data on frequency of additional SLD resistance in MDR TB patients is crucial for programmatic decision on treatment policies in this group of patients.

**Aim of the study.** To assess the frequency and spectrum of additional SLD resistance in MDR TB patients in a high burden Eastern European setting.

**Materials and methods.** We have retrospectively analyzed routinely collected solid culture-based drug sensitivity test (DST) results from samples used for MDR TB diagnosis available in national electronic TB database (SIME TB) for year 2011 in the Republic of Moldova. A comparative analysis of additional SLD resistance in new and retreatment MDR TB patients was performed.

**Results.** 791 DST results from unique MDR TB cases were included in to the analysis (520 primary and 269 retreatments). The combine rate of additional resistance to fluoroquinolone alone, injectables alone or both was 14.2 %. In case of retreatment cases the rates of fluoroquinolones and combined fluoroquinolones + injectables resistance were significantly higher than those in primary patients (9.4% vs 4.4%; p=0.008 and 4% vs 1.3%; p=0.02 correspondingly). No significant differences were found in injectables resistance rate in retreatments compared with the primary cases (6.9 vs 5.6%; p=0.5). Additional resistance to other second line TB drugs (ethionamide, cycloserine, PAS) was registered in 24.9% of cases. Similarly, a higher resistance rate was found for these drugs in retreatments than in primary cases (29.7 vs 22.3; p=0.02). An important rate (69.3%) of ethambutol resistance was observed, with an unexpected higher rate in primary versus retreatment cases (72.1% vs 64.1%; p=0.02).

**Conclusions.** At least one fourth of MDR TB patients in the studied setting have additional resistance to at least one SLD that put them at risk to receive an inappropriate treatment when a standard MDR treatment regimen is started.

**Key words:** tuberculosis, DST, resistance, second line drug

## 105. PARTICULARITIES OF TB IN PREGNANT WOMEN

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**Introduction.** TB most commonly affects women during their reproductive years, being recognized as an important cause of morbidity and mortality in pregnancy.

**Aim of the study.** Studying the particularities of pulmonary TB evolution in pregnant women; identifying the TB risk factors; assessing the results of antituberculosis treatment and pregnancy in women suffering from TB.

**Materials and methods.** There have been examined the in-patient observation checklists and out-patient medical histories of 74 pregnant women aged from 17 to 39, recorded as having active TB identified in the territory of the RM, from 2012 to 2017.

**Results.** There has been stated that the majority of cases of TB were identified through the passive method - 60.8%. In 54% of cases, pregnancy occurred on the background of Bathe most frequent clinical forms were infiltrative pulmonary TB - 72.9% and exudative pleurisy - 8.1%. The process developed with complications in 20.2%, and the most widespread were hemoptysis and pleurisy, each constituting 40%. New cases of TB were recorded in 78.3%. Drug resistance was identified in 50%, 75.6% of which were the cases of MDRTB. The tuberculosis risk factors include: comorbidities - 63.5%, 8.1% of which is HIV/AIDS; contacts with TB patients - 48,6%; unsatisfactory life conditions - 43.2%; unhealthy habits - 33.7%. The rate of successful treatment

of drug-sensitive TB constituted 75.6%, the rate of success in case of MDRTB constituted 46.2%. 91.9% of the women included in this study decided to maintain their pregnancy (72.1% of them delivered children at term; 20.6% had preterm delivery and 7.3% had natural abortion). **Conclusions.** In a country with high TB incidence, such as the RM, the physicians shall manifest an increased vigilance to pregnant women showing the suggestive symptoms of TB.

**Key words:** tuberculosis, pregnancy

## DEPARTMENT OF INTERNAL MEDICINE, GASTROENTEROLOGY

### 106. ENDOTHELIAL DYSFUNCTION IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE WITH CONCOMITANT DIABETES MELLITUS TYPE 2

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**Introduction.** Endothelial dysfunction (ED) is a key moment in the development of some manifestations of diabetes mellitus (DM) and the main cause of concomitant vascular complications of the disease.

**Aim of the study.** To estimate the functional state of endothelium in gastroesophageal reflux disease (GERD) in patients with concomitant DM type 2.

**Materials and methods.** We have examined 42 patients: those suffering from erosive form of GERD (EGERD) and DM type 2 were included into the first experimental group (14 patients), those with non-erosive form of GERD (NGERD) combined with DM type 2 formed the second group (13 patients); the third group consisted of patients with isolated EGERD (7 patients) and the fourth group comprised 8 patients with NGERD. The control group consisted of seven practically healthy individuals (PHI). The functional state of the endothelium was studied using a color duplex scanning of the brachial artery, by the number of endothelin-1 in plasma and by the content of stable metabolites of nitrogen monoxide (NO).

**Results.** It was established that during the tests with reactive hyperemia and nitroglycerin, all patients, except those from the fourth group, showed significant impairment of vasomotor endothelial function, which was reliably different from the data in PHI ( $p < 0.05$ ). The reliable reduction of NO metabolites in blood was found in patients from the 1st and the 2nd groups, namely by 63.4% ( $p < 0.05$ ) and 40.8% ( $p < 0.05$ ) whereas the level of NO metabolites 3 in the third and the fourth groups increased compared to PHI by 54.8% ( $p < 0.05$ ) and by 18.4% ( $p < 0.05$ ) respectively. We observed an increase in endothelin-1 content in the blood serum of patients from the first group by 10.9 times compared to PHI ( $p < 0.05$ ), patients in group 2 - by 5.4 times ( $p < 0.05$ ) of those in the 3rd group by 5.9 times ( $p < 0.05$ ), while the patients from the 4th group - only by 2.3 times ( $p < 0.05$ ).

**Conclusions.** Thus, our studies indicate the presence of ED in patients with GERD, which was more pronounced in the patients with EGERD and NGERD combined with DM type 2, which induces the necessity of new approaches to their treatment.

**Key words:** gastroesophageal reflux disease, diabetes mellitus type 2, endothelial dysfunction

### 107. GASTROESOPHAGEAL REFLUX DISEASE ASSOCIATION WITH VIRAL HEPATITIS B

Author: **Liuba Bordei**

Scientific advisors: V-T Dumbrava, MD, PhD, Professor; Julianna Lupasco, MD, PhD, Department of Internal Medicine, Gastroenterology



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**Introduction.** Gastro-esophageal reflux disease (GERD) is a common health problem nowadays. GERD strongly affects the quality of patients' life and increases the risk for esophageal adenocarcinoma, affects the public health and leads to a permanent increase of economic burden. At the same time, all over the world, a huge number of people are infected with viral hepatitis B, and nearly 400 million are chronic carriers of this virus. Thus, viral hepatitis B is still a serious danger regarding public health.

**Aim of the study.** To discover the relationship and possible interactions between this two entities.

**Materials and methods.** Our study has evaluated a group of 321 outpatients, 93 (28,9%) were diagnosed with GERD. From 197 with viral hepatitis 56 (28,4%) have associated GERD.

**Results.** Out of 131 patients with viral hepatitis B, 53 (40,46%) had GERD. This last group (patients with GERD and chronic viral hepatitis) were analyzed more detailed, in order to look for the possible risk factors (such as increased body mass index, infection with *Helicobacter pylori*, sex, and age), concomitant diseases or other factors which could elucidate how viral hepatitis B can lead to appearance or aggravation of GERD. Additional, we have studied a group of patients just with GERD, without any hepatic pathology, in order to see the difference between these two groups.

**Conclusions.** Our data suggest a significant association between chronic viral hepatitis and GERD.

**Key words:** hepatitis B, GERD, co-morbidity

## 108. LIVER PATHOLOGY IN THIRD TRIMESTER OF PREGNANCY

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**Introduction.** Liver disease can cause significant morbidity in both pregnant women and their infants. We discuss clinical conditions that are seen only in pregnant women and affect the liver: from Intrahepatic Cholestasis of Pregnancy (0.5% - 1.5% prevalence), to the more frequent condition of preeclampsia (10% prevalence) and its severe form; haemolysis, elevated liver enzymes, and a low platelet count syndrome (12% of pregnancies with preeclampsia) - HELLP syndrome. The pathogenesis is not completely known, there are theories. Anyway all of them suggest the changes in the maternal body due to the change of pregnancy hormones. These conditions affect not only the mother but also the baby. It is important to make an early diagnosis and prevent the outcomes with simple medication.

**Aim of study.** The study of clinical and paraclinical features in women with different types of hepatic pathology in the third trimester of pregnancy.

**Material and methods.** The study is retrospective, based on the results of the medical records; year 2016-2017; Therapy Department, Obstetrical Emergency Department, Intensive Care Department; Public Health Institution, Mother and Child Institution. The study group consists of 43 pregnant patients: 12 patients with preeclampsia, 12 patients with HELLP syndrome, 19 patients with intrahepatic cholestasis of pregnancy. The control group consist of 10 patients with gestational hypertension.

**Results.** Basic clinical symptoms were found: headache, edema, visual disorders, epigastric pain, HTA characteristic for preeclampsia and HELLP syndrome; pruritus characteristic for intrahepatic cholestasis of pregnancy. A significant statistical difference was observed between urinary protein and lactate dehydrogenase ( $r=0.64$ ;  $p<0.05$ ) in HELLP syndrome. Pruritus

disappeared in 50% cases and diminished substantially in 50% cases of intrahepatic cholestasis of pregnancy postpartum.

**Conclusions.** The clinical picture of females in their third trimester of pregnancy, with different types of hepatic lesions denotes a notorious polymorphism.

**Key words:** HELLP, pregnancy, third trimester, arterial hypertension

## **DEPARTMENT OF INTERNAL MEDICINE, INTERNAL MEDICINE AND SEMEIOTICS**

### **109. PEPTIC ULCER AND HELICOBACTER PYLORI INFECTION**

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**Introduction.** *Helicobacter pylori* is one of the most widespread bacterial infection worldwide. It is a ubiquitous organism that is present in more than 50% of the global population and involves a high-cost treatment for being eradicated. With the discovery of *Helicobacter pylori* infection, the causes, pathogenesis, and treatment of peptic ulcer disease have been rewritten. We focus on this revolution of understanding and management of peptic ulcer disease over the past 25 years. In spite of consistent advances, peptic ulcer remains a major clinical problem, largely because of the tremendous increase in use of non-steroidal anti-inflammatory drugs.

**Aim of the study.** To assess the relationship between peptic ulcer and *Helicobacter pylori* infection.

**Materials and methods.** A retrospective study was carried out at Central Railway Hospital of the the Republic of Moldova, based on medical records of 130 patients who were diagnosed with peptic ulcer and who underwent treatment during the period of 2012-2017.

**Results.** From 130 patients, 38 (29%) were females and 92 (71%) were males. Active *Helicobacter pylori* infection was documented in 83% of gastric ulcer patients and in 69% patients with duodenal ulcer. According to the duration of the disease 14 patients were primarily diagnosed. In 34 cases the duration was < 5 years, 16 patients with peptic ulcer were at 5-10 years duration, 58 were classified in the group over 10 years and 8 patients were diagnosed for over 20 years.

**Conclusions.** Several socioeconomic factors have been associated with *Helicobacter pylori* infection. Subjects with a low socioeconomic status, also regular smokers and drinkers were at higher risk.

**Key words:** *Helicobacter pylori* infection, peptic ulcer

### **110. PARTICULARITIES OF DIAGNOSIS IN TRICUSPID INSUFFICIENCY**

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Scientific adviser: Valeriu Istrati, MD, PhD, Professor, Head of Department of Internal Medicine and Semeiotics

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**Introduction.** According to several authors, tricuspid valve pathologies is diagnosed in 19-40% of cases. As rule, primary tricuspid insufficiency is accompanied by congenital anomalies of heart or other valvular anatomical defects. Most often these diseases manifests, as a consequence of pulmonary hypertension, congestive and right ventricular dilation, rheumatic or infectious

diseases, heart trauma or involvement in the tumoral process. In the Republic of Moldova, rheumatic origin of valvulopathy, remain with a significant share and are the leading cause of surgical intervention in patients with valvulopathy. Tricuspid insufficiency appeared as a result of rheumatic damage in 15-30% of cases. Prevail tricuspid damage associated with mitral or aortic diseases.

**Aim of the study.** Study of morbidity, evolution of the disease, methods of diagnosis of tricuspid insufficiency in adults. Evaluation of clinical manifestations of tricuspid insufficiency;

**Materials and methods.** The study included a sample of 123 patients 57 men and 66 women, aged from 24 to 95 years, during the 2014-2017 period, with tricuspid insufficiency with diverse degrees, pure and associated with other valvulopathy. Patients were presented with clinical signs of Heart Failure, hypertension. All patients were investigated by Doppler echocardiography and were discovered organic as well as functional valvular disorders with unique tricuspid insufficiency, and with tricuspid insufficiency associated with other valvulopathy.

**Results.** The morbidity analysis by in relation to the affected patients gender, we found that women make the disease 53.65%, compared with men, accounting for only 46.34%. According to etiology, with rheumatic valvular lesions etiology were 30.08%, bacterial endocarditis 8.13%, pulmonary valvular heart disease 9.75%, ischemic cause 22.76%, hypertension cause 10.56%, hypertrophic cause 1.62%, heart dilation cause 3.25%, and 13.82% of multiple associated causes. Patients with clinical signs of Heart Failure: functional class II NYHA-20.32%, III-76.42%, IV-2.43%. Tricuspid insufficiency associated by rhythm and conduction disturbances are: chronic atrial fibrillation - 66.66%, atrial flutter - 6.5% and LBBB- 6.5%, RBBB- 4.06%. Echocardiographic Doppler investigation, show 9.75% with single tricuspid insufficiency and 90.24% with multiple valvular diseases.

**Conclusions.** Tricuspid valve insufficiency is caused direct by alterations of valves, and indirectly secondary to left heart failure or both of them associated with diverse degrees.

**Key words:** valve, insufficiency, heart failure, fibrillation

## 111. RISK FACTORS IN PATIENTS WITH ISCHEMIC HEART DISEASES

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**Introduction.** Myocardial ischemia is a leader in the structure of cardiovascular morbidity and mortality. The results of the study of the prevalence of cardiovascular risk factors and the influence of modifiable risk factors could decrease the mortality caused by this disease. Metabolic disorders such as hyperglycemia, dyslipidemia and insulin resistance affect arterial function and increase their susceptibility to atherosclerosis, manifesting including increased frequency of cardiovascular complications, both acute and chronic.

**Aim of the study.** To explore the risk factors in patients with ischemic heart diseases.

**Materials and methods.** Biochemical blood analysis was performed, i.e. blood glucose determination, total cholesterol level, HDL-cholesterol, LDL-cholesterol, triglycerides, arterial pressure was monitored, patients' body mass index was calculated, the lifestyle of patients was studied, including smoking/tobacco habits.

**Results.** The study included 60 patients with ischemic heart disease, 30 (50 %) men and 30 (50 %) women with a mean age of approximately ( $53.4 \pm 0.3$  years), mean age of occurrence of the disease being – 47.5 years. All patients, when checking in, accused anginal pain – retrosternal, constrictive type, manifesting irradiation in arms when little and medium effort was involved, and decreasing when no effort was present or nitroglycerin was administered. 48 patients (80 %) accused exercitional dyspnea when medium effort was induced (36 patients), while at a lest level

of effort pain was accused by 12 patients. Risk factors were studied: 42 (70 %) of patients were overweight or were obese (BMI > 25 kg/m<sup>2</sup>), dyslipidemia was determined in 48 patients (80 %) of cases. Of type 2 diabetes suffered 26 (43 %) patients, 57 % the other non-diabetic, smokers were 33(55 %) patients. Different types of essential hypertension being the most common risk factor and found in 60 (100 %) patients, of which 90 % had blood pressure greater the 160/95 mmHg, and tachycardia predominating in 60 % of patients.

**Conclusions.** Patients with ischemia and metabolic disorders assessed in the survey were of working age (53.4 ± 0.3 years). Diabetes mellitus and hypertension was common pathologies associated with ischemia. Most patients have more than three cardiovascular risk factors, and influencing the modifiable risk factors by promoting a healthy lifestyle may reduce mortality from this disease.

**Key words:** myocardial ischemia, risk factors

## 112. THE RATE OF OBESITY AND DYSLIPIDAEMIA AMONG YOUNG MOLDOVAN WOMEN

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**Introduction.** Dyslipidemia and obesity are recognized modifiable cardiovascular risk factors, major health problems with increasing prevalence. Youth obesity and lipid abnormalities are not enough documented. Asymptomatic young people tend not to appeal to health services, but they may be at cardiovascular risk.

**Aim of the study.** To estimate the rate of obesity and dyslipidemia in the cohort of female population in the Republic of Moldova.

**Materials and methods.** The cross-sectional study was performed, including 302 women (17 - 29 years old), apparently healthy, enrolled at Nicolae Testemitanu State University of Medicine and Pharmacy in 2011. Venous blood samples were drawn after an overnight fasting and were subjected to following biochemical lipid parameters determination: *HDL cholesterol*, *total cholesterol (TC)*, *triglycerides*. *non-HDL cholesterol* and *LDL cholesterol* were calculated. *The following anthropometric parameters have been measured: body mass index (BMI), waist circumference (WC).*

**Results.** Our data showed that over 53% (160 subjects) from the studied young population had at least one lipid abnormality. The rate of hypertriglyceridemia, hypercholesterolemia, high non-HDL cholesterol and low HDL cholesterol was 13.6%, 14.2%, 7% and 34.1%, respectively. 131 female patients (43.4%) were centrally obese and 14.2% were overweight/obese (WHO criteria).

**Conclusions.** Young females in Moldova have alarming rate of the asymptomatic dyslipidemia and obesity. Our findings support the need of early preventive measures in this age group.

**Key-words:** obesity, dyslipidemia, risk factor, young.

## 113. CLINICAL AND IMMUNOLOGICAL CHARACTERISTICS OF SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS FROM THE REPUBLIC OF MOLDOVA

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**Introduction.** Epidemiological studies of systemic lupus erythematosus have been reported in the literature in many countries and ethnic groups.

**Aim of the study.** To describe the clinical features, particularly disease activity, damage index and immunological features of 87 systemic lupus erythematosus subjects.

**Materials and methods.** Adult patients ( $\geq 18$  years) followed in Rheumatology department of PMSI Institute of Cardiology who fulfilled Systemic Lupus International Collaborating Clinics (SLICC) criteria were included. Data was collected by detailed clinical interview, physical examination and laboratory investigations. Hence demographics, SLICC criteria, immunological profile, systemic lupus erythematosus disease activity index 2000 (SLEDAI-2K) and SLICC/American College of Rheumatology (ACR) damage index (SDI) were documented.

**Results.** Of the 87 patients, 84 (96.5%) were females and three (3.4%) - males. The mean age at lupus onset was  $36.7 \pm 15.6$  years. Mean disease duration was  $80.6 \pm 112.8$  month. The most prevalent clinical SLICC criteria were musculoskeletal, with 74 (94%) of subjects experiencing arthralgia/arthritis, followed by mucocutaneous manifestations of subacute cutaneous lupus in 65 (74.7%) and alopecia 60 (68.9%) cases. Lupus nephritis (not proven by biopsy) occurred in 32 (36.7%) subjects.

The most common laboratory SLICC criteria were positive anti-dsDNA antibodies in 80 (91.9%) cases, followed by antinuclear antibodies 66 (75.8%) and low complement (C3, C4 or CH50) levels - 50 (57.4%) patients. Mean SLEDAI score was  $6.5 \pm 4.3$  with a range of 2-18 points. Organ damage occurred in 38 (43.6%) patients; mean SDI was  $0.7 \pm 1.3$ , with a 0-5 range.

**Conclusions.** The results of the study, general for our country, can be used in the diagnosis and monitoring of SLE, that represents a big challenge for any clinician and justifies the need for this type of study to better characterize the disease, especially in the first years of the disease.

**Key words:** systemic lupus erythematosus, clinical features, disease activity, damage index, immunological features

#### **114. APPLICABILITY OF EULAR/ACR CLASSIFICATION CRITERIA FOR IDIOPATHIC INFLAMMATORY MYOPATHIES**

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**Introduction.** Till recently, the most widely used criteria for the diagnosis of idiopathic inflammatory myopathies (IIM)-autoimmune diseases characterised by muscle weakness and muscle inflammation was done the Bohan and Peter criteria, which has a high sensitivity (94,3%), but low specificity (29,4%). The International Myositis of Assessment and Clinical Studies Group (IMACS) created a new criteria set that shows better performance than the existing ones.

**Aim of the study.** To evaluate the performance of new criteria in patients with idiopathic inflammatory myopathies.

**Materials and methods.** A cross-sectional study was done on patients with idiopathic inflammatory myopathies, during May 2016-december 2017. Clinical and demographic data was collected based on a special questionnaire made by us and according to international recommendation on IIM. The ACR/EULAR criteria set has 16 variables from 6 categories, each has an assigned weight (score) based on its influence to discriminate IIM from non-IIM. The sum of all scores provides a corresponding probability of having IIM, the level 55-90 % is for probable IIM and  $\geq 90\%$  is for definite disease. The study was accepted by the Bioethical Committee of SUMPh "Nicolae Testemitanu" from 23 may 2016.

**Results.** The study group consisted of 65 patients, the majority of them were Caucasian females, W:M ratio was 3.3:1. The median age at the examination was  $52.9 \pm 13.1$  (range 25-78) years versus  $48.5 \pm 11.1$  at the onset of the disease. Regarding the mean duration of the disease, we

determined it was  $113.8 \pm 68.8$  (iv 6-324) months. Applying the new set of criteria we determined that the mean number of criteria was  $7.21 \pm 1.46$ , varying from 5 to 11 criteria, equivalent to  $91.4 \pm 14.5$  percent, which represents a defined diagnosis. Age at onset of first symptom  $\geq 18$  and  $< 40$  years was determined in 35.4 % and more than 40 years had 64.6 % of study patients, specific for these diseases. Weakness of proximal upper extremities, usually progressive over time was appreciated in 98.5 % and of lower extremities-95.4 percent. Skin manifestation were represented by heliotrope rash observed in 33 (50.7%) patients and Gottron's papules-24 (36.9%) cases. The presence of dysphagia was detected in 11 (16.9%) patients and anti-Jo-1 antibodies were found in 5 (7.7%) cases. It should be noted that the elevation of muscle enzymes were present in all patients. Muscle biopsy, optional in the new criteria, was done by 22 (33.8 %) patients and characteristic features were observed, the most frequent was endomysial infiltration of mononuclear cells surrounding, but not invading myofibres in 16 (24.6 %) cases.

**Conclusions.** The new criteria set for the diagnosis and classification of idiopathic inflammatory myopathies is easy to apply and interpret, being useful in examining these patients.

**Key words:** idiopathic inflammatory myopathies, diagnosis, clasification

## 115. MELANOMA'S SENTINEL NODE BIOPSY: COMPARISON BETWEEN TWO CLINICAL HOSPITALS OVER 5 YEARS

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**Introduction.** Sentinel lymph node (SLN) is defined as the first lymph node localized on the direct lymphatic drainage pathway from a primary tumor. The sentinel lymph node biopsy (SLNB) is largely used in breast cancer and melanoma but it may also be useful in other epithelial skin cancers as well as in tumors located in the upper or lower gastrointestinal tract, lungs, thyroid, cervix and vulva. SLNB in melanoma is essential for an accurate staging, to estimate the risk of extension to other lymph nodes or organs and to evaluate the prognosis. Melanoma, even if it is not as common as the basal cell carcinoma or squamous cell carcinoma among the skin tumors, presents an increasing incidence and a higher mortality.

**Aim of the study.** To present an objective image of the SLNB practice in two county clinical hospitals: Azienda Ospedaliero-Universitaria di Parma (AOUP), Italy and Spitalul Clinic Judetean Mures (SCJM), Romania, as well as the outcomes of the microscopic analysis.

**Materials and methods.** Our study analyses the case-book records of the Pathology Department in two county clinical hospitals from 2012 to 2016. Tissue fragments obtained as a result of surgical excisions were processed using standard histological methods: fixing in formalin for 12-24 hours, embedding in paraffin, multiple sectioning, staining with hematoxyline-eosine and performing immunohistochemistry using MelanA, S100, HMB45.

**Results.** During our study, 1594 tumors were analyzed. After eliminating insitu, acral-lentiginous and mucosal melanomas, we included in the statistical analysis 660 lesions diagnosed at AOUP and 67 at SCJM. The SLNB technique was performed in approximately 30% of the patients at AOUP and 49% at SCJM. The study shows a relative equal distribution between the two centers regarding the positivity or negativity of the SLN, respectively 85% versus 15%. Despite the slight difference between the number of cases without a SLNB performed which may also be explained by the larger number of patients at the AOUP, we obtained overlapping ratios for the positive and negative SLN. We have defined positive SLN as the lymph node presenting tumor invasion and negative SLN as the node without malignant cells in its structure. A positive SLN, identified in 15% of cases in both departments, may change the medical and surgical approach and allows the adjustment of the survival prognostic.

**Conclusions.** The status of the SLN, defined as the first lymph node to be involved in the metastatic spread, may change the medical or surgical approach, the follow-up and allows a precise staging, the calculation of the survival rates. The procedure should be executed for more cases in order to obtain a faithful result.

**Key words:** melanoma, SLNB

## DEPARTMENT OF INTERNAL MEDICINE RHEUMATOLOGY AND NEPHROLOGY

### 116. NERVOUS SYSTEM INVOLVEMENT IN PATIENTS WITH RHEUMATOID ARTHRITIS

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**Introduction.** Rheumatoid arthritis (RA) is a pathology that leads to functional impairment with functional deficits, affects the patient's normal activity and reduces its productivity. From an economic and social point of view, it has a negative impact on both his family and society, greatly reducing the quality of life of the patient. According to the WHO data, RA prevalence in the general population is 0.6 - 1.3% and annual incidence - 0.02%. RA is an inflammatory, autoimmune disease of unknown etiology, which has a chronic and progressive evolution, affects the joints by symmetrical erosive arthritis and can be associated with extraarticular and systemic manifestations.

**Aim of the study.** To study the affection of the nervous system in patients with RA, to improve their quality of life. We have proposed to find effective ways to prevent infirmity through RA.

**Materials and methods.** We studied files of 50 patients who were suffering from RA and analyzed the results. Also, we studied specialized information and international publications with impact on the study. Of the 50 patients, 24 had oversegmental vegetative dysfunction with astenovegetative syndrome, 10 patients had paraesthesias, 4 patients had both. Of the 13 patients who had visceral RA, 10 of them had nerve damage.

**Results.** have shown that the duration of the RA disease and the nervous disorder are not correlated. Patients with RA history less than 5 years are more likely to develop nerve complications. 10% of the RA patients had illness for less than 5 years, but they had already nerve damage, while 100% of patients without nervous disorder had RA more than 5 years. Autonomic dysfunction in RA patients is associated with disease activity. 77,4% of those with nervous disorder had DAS > 5,1, i.e. high disease activity. RA may induce neuropsychiatric disorders, affecting nervous system functions. Early detection of these disorders can prevent debilitating changes in the nervous system and improve the quality of life in patients with RA.

**Conclusions.** The duration of the RA disease and the nerve damage are not correlated. Patients with RA history less than 5 years are more likely to develop nerve complications. Autonomic dysfunction in RA patients is associated with disease activity. Early detection of neuropsychiatric disorders allows prevention of debilitating changes in the nervous system.

**Key words:** rheumatoid arthritis, nervous system, autonomic dysfunction

### 117. CLINICAL AND TREATMENT SPECIFICITIES IN GOUT

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**Introduction.** Gout is a complex disease characterized by hereditary or acquired disorder of purine metabolism and uric acid excretion. It is characterized by hyperuricemia, recurrent arthritis attacks in which the synovial fluid contains monosodium urate crystals and formation of tofy (monosodic urethane monohydrate deposits), especially around the extremities of joints.

**Aim of the study.** Determining the lesion of key organs in gout; correlation analysis of clinical and biochemical indices in patients with gout.

**Materials and methods.** A retrospective study was carried out on patients hospitalized in the rheumatology and arthrology department of the Public Health Care Institution of the Republican Clinical Hospital in the period 2016-2017 diagnosed with gout according to ACR criteria. In the number of 45 patients all were male. The study was performed by laboratory analysis (uric acid in the blood, lipidogram, uric acid in the urine, glycemia) and by instrumental method (radiological examination).

**Results.** It was found that the first symptoms of gout appeared after the age of 45, in the presence of risk factors like hypertension, obesity, diuretic use. The presence of renal impairment (68% nephrolithiasis), cardiovascular disorder (88% arterial hypertension) and the presence of endocrine pathology (DZ 75%) was determined in the case of internal pathologies. As a basic treatment it was found that 71% of patients are currently taking allopurinol and 29% of patients are treated with adenuric.

**Conclusions.** Lesion of key organs was determined in gout. After correlation analysis of clinical and biochemical indices in patients I have found correlation between the level of uric acid and triglycerides, the level of uric acid and ABP values, uric acid and degree of obesity, uric acid and glycemia.

**Key words:** gout, kidney, risk factors, treatment

## 118. STUDYING PECULIARITIES OF CHRONIC KIDNEY DISEASE IN PATIENTS WITH CONCOMITANT OBESITY

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Scientific advisors: Akentiev S. O., Berezova M. S.

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**Introduction.** Recently, much attention is paid to the study of obesity and overweight influence on the forecast of chronic kidney disease. The negative impact of overweight on renal function is still poorly understood.

**Aim of the study.** To explore the features of the course of chronic kidney disease in patients with and without concomitant obesity.

**Materials and methods.** The study involved 48 patients with stage 2 chronic kidney disease (CKD), who were hospitalized in the Nephrology department of Chernivtsi regional clinical hospital. The average age of the patients was  $43.5 \pm 1.5$  years (from 34 to 62 years). CKD was caused by: chronic pyelonephritis in 19 patients (39.5%), chronic glomerulonephritis in 12 patients (25%), diabetic nephropathy in 17 patients (35.5%). CKD duration ranged from 1 to 17 years (on average  $8,9 \pm 1,5$  years). All patients were divided into three groups.

**Results.** An analysis of renal function in the evaluation of patients with the second degree CKD and without concomitant obesity as compared with the healthy subjects showed the presence of proteinuria and deterioration of glomerular filtration rate ( $p < 0.05$ ) While studying the blood lipid spectrum indices, we identified impaired lipid serum metabolism as a reliable increase in levels of TC, triglycerides and LDL cholesterol due to lower HDL-C in patients with CKD and without obesity compared with healthy individuals ( $p < 0.05$ )

**Conclusions.** The analysis of clinical and laboratory parameters revealed the presence of an imbalance in fat metabolism in obese and non-obese patients with chronic kidney disease.



However, the changes in patients with II degree obesity were more significant. In this same group the patients showed a more pronounced impairment of renal function, indicating a more severe course of disease in obese patients. It means that this variant of the disease is more unfavorable.

**Key words:** chronic kidney disease, obesity, hyperlipidemia, lipids

### **119. LIPID PROFILE CHARACTERISTIC IN PATIENTS WITH DIABETIC NEPHROPATHY III-IV STAGES ACCORDING TO AGE AND SEX**

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**Introduction.** Diabetic nephropathy (DN) is one of the most serious microvascular complications of diabetes mellitus (DM).

**Aim of the study.** To examine age and gender characteristics of lipid imbalance in blood of patients with DN III-IV stage.

**Material and methods.** 34 patients with diabetes type 2 diabetes aged 40 to 65 years, with disease duration of 10 - 15 years, were under observation under. All the patients divided into two groups: 13 patients with DN III st. were included to group 1. 11 patients with DN IV st.- in 2 groups. The control group were 15 healthy individuals. Patients in all groups were divided regarding to their age and gender. All the patients under study were tested for total cholesterol, triglycerides, HDL cholesterol, LDL cholesterol.

**Results.** Analysis of clinical and laboratory parameters of patients studied showed lipid metabolism serum as a probable increase in levels of total cholesterol, triglycerides and LDL cholesterol against decrease in HDL-C compared with results of healthy individuals ( $p < 0.05$ ). Moreover, the most pronounced imbalance of lipid metabolism was found in patients who had stage IV DN ( $p < 0.05$ ). Gender distribution in the groups of patients showed that more pronounced lipid imbalance was in women than in men. It should be noted that the significant increase in LDL cholesterol was observed in both men and women of DN IV st. ( $P < 0.05$ ). Thus, a significant imbalance of lipids in patients with DN III - IVst. was present in all patients with probable gender difference, especially with DN IV st. According to the age group studied patients were divided into two age groups: group I - patients adulthood (45-65 years) and group II, patients with DN elderly over 65 years. Analysis of the data revealed that lipid metabolism most significantly deviated in persons of mature age compared with older patients ( $p < 0.05$ ) and depended on the stage of DN.

**Conclusions.** There were significant gender differences in lipid imbalance in patients with DN III-IV stages of its predominant in women. Lipid imbalance is most pronounced in adulthood patients with DN III-IV st., manifested by a significant increase in the level of LDL ( $p < 0.05$ ). Detected probable increasing triglycerides in older patients with DN stage IV compared with those of patients of mature age ( $p < 0.05$ ).

**Key words:** chronic kidney disease, obesity, hyperlipidemia, lipids

### **120. CHARACTERISTIC OF THE LIPID PROFILE IN PATIENTS WITH DIABETIC NEPHROPATHY III-IV STAGES**

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**Introduction.** Diabetic nephropathy is one of the most common causes of end-stage chronic kidney disease. Hyperglycemia and insulin resistance may lead to dyslipidemia. Dyslipidemia is one of the risk factors for the development of diabetic nephropathy.

**Aim of the study.** To determine possible correlations between indicators of lipid profile parameters and violation renal function in patients with diabetic nephropathy.

**Material and methods.** The study was performed on 67 patients who received medical treatment and care at the Chernivtsi Regional Clinical Hospital for a 3-month period. Women - 39 (58.21%) and men - 28 (41.79%), mean age  $62.8 \pm 9.3$  (40-65) years with diabetes duration of 10 - 15 years. The study groups included 36 patients with diabetic nephropathy III stage (group 1) and 31 patients with diabetic nephropathy IV stage (2 group). The control group were 17 healthy individuals. The levels of total cholesterol, triglycerides, high-density lipoproteins cholesterol, low-density lipoproteins cholesterol was determined in all subjects.

**Results.** The levels of total cholesterol, triglycerides and low-density lipoproteins cholesterol were significantly higher in the case of patients with diabetic nephropathy compared with results of healthy individuals ( $p < 0.05$ ). The most significant imbalance of indicators of lipid metabolism was found in patients who had diabetic nephropathy IV stage ( $p < 0.05$ ).

**Conclusions.** The level of lipid imbalance was most pronounced in patients with diabetic nephropathy IV stage. Diabetic dyslipidemia correlates with the progression of diabetic nephropathy. Correlation is moderate. To prevent deterioration of renal function is necessary timely diagnosis and the appointment of adequate treatment.

**Key words:** chronic kidney disease, diabetic nephropathy, hyperlipidemia, lipids.

## 121. FACTORS THAT INFLUENCE THE ACTIVITY OF SYSTEMIC LUPUS ERYTHEMATOSUS

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**Introduction.** Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by a diffuse chronic inflammatory process that can affect any organ or system and is associated with the overproduction of autoantibodies, the most representative of which are antinuclear antibodies. Globally, Lupus affects 40-100 people in every 100 000. Lupus strikes mostly women of childbearing age. However, men, children, and teenagers develop lupus, too. Most people with lupus develop the disease between the ages of 15-44.

**Aim of the study.** The disabling nature of SLE, the absence of curative treatment and the difficulties in diagnosing require the highlighting of the factors that induce or influence SLE activity.

**Materials and methods.** The retrospective study of a group of 30 people who were treated or monitored in the Republican Clinical Hospital in Chisinau in 2017.

**Results.** During the study, were identified the factors to which the patients have been exposed. 37% of patients had long contact with pesticides and other chemical substances, in 7% SLE was drug-induced, in 3% SLE was induced by the Epstein-Barr virus, in the remaining 54% the cause of the disease has not been identified. After analyzing the distribution of Lupus patients, it was noticed that the districts with the biggest number of patients with Lupus are those districts where the level of soil and air pollution exceeds the limits or the norm.

**Conclusions.** The influence of chemical substances remains the most important factor that induces SLE in the Republic of Moldova. SLE presents great difficulty in establishing the diagnosis and the factors that have induced this disease.

**Key words:** SLE, chemical substances, consequences of pollution, factors

## 122. PARTICULARITIES IN THE EVOLUTION OF PSORIATIC ARTHRITIS WITHOUT SKIN PSORIASIS

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**Introduction.** Psoriatic arthritis (APs) is a chronic seronegative inflammatory arthropathy, associated with skin psoriasis. Sometimes it can precede the skin psoriatic lesions. Etiology and pathogenesis remain unknown, but the genetic predisposition, the influence of the immune system and the environment are important in the development of the disease. APs is an invalidating disease with a different presentation in time, at one time it predominates as skin disease, and another time as articular disease, with erosive and destructive joint changes, which is found in about 40-60% of patients. Thus, a complex approach of the clinical features of the disease is needed, in order to make a correct and timely diagnosis of the disease.

**Aim of the study.** investigation of the evolution of psoriatic arthritis in patients without skin psoriasis

**Materials and methods.** the study group contains 40 patients diagnosed with psoriatic arthritis established in accordance with the CASPAR (2006) diagnostic criteria, admitted to the rheumatology and arthrology department of IMSP SCR *Timofei Mosneaga* during the period 2015-2017. In order to highlight the evolutionary particularities, the patients were grouped into 2 groups: I group (30 patients) psoriatic arthritis with skin psoriasis, II group (10 patients) psoriatic arthritis without skin psoriasis. Then group I and II were separated into 5 subgroups depending on the clinical variant of the disease. The description of each group was made by gender, mean age and the average age of joint affection.

**Results.** The study performed on a group of 40 patients revealed the clinical particularities of the evolutionary variants of psoriatic arthritis, characterized by a wide variety of manifestations of the articular syndrome, expressed by 5 clinical types: polyarticular (31 %), axial (25.5%), oligoarticular (17.4%), distal interphalangeal (14.5%) and mutilating (11.6%), as well as peculiarities of extraarticular disorders.

**Conclusions.** Severity of joint damage was assessed in relation to the presence or absence of skin manifestations of psoriasis. It has been established that the association of cutaneous psoriasis aggravates the clinical evolution of vertebral column lesions, especially in the polyarticular variant and less in the axial and mutilating variant.

**Key words:** psoriatic arthritis, immune-genetic status

### DEPARTMENT OF INTERNAL MEDICINE, CLINICAL SYNTHESIS.

## 123. THERAPY WITH CLOPIDOGREL BASED ON CYP2C19 GENOTYPE

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**Introduction.** Combined therapy, clopidogrel plus aspirin, prevents secondary thrombotic in acute coronary syndromes (ACS), after percutaneous coronary interventions (PCI) with placement of a coronary artery stent. Clopidogrel is activated in the liver by cytochrome P450 enzymes. CYP2C19 is the principal enzyme. The most common loss-of-function variant is

CYP2C19\*2. This contributes to the decrease in the active metabolite of clopidogrel in the blood and reduce the effectiveness of clopidogrel therapy.

**Aim of the study.** The importance of CYP2C19 genotyping and knowing the patient's phenotype.

**Materials and methods.** Exploring the bibliographic sources in the years 2010-2017 in the databases: PubMed, Google Scholar, Cochrane

**Results.** Numerous meta-analyzes have shown that the presence of CYP2C19\*2 polymorphism in patients administering clopidogrel, increases the risk of cardiovascular (CV) complications such as: myocardial infarction (MI), ischemic stroke and stent thrombosis. In March 2010, Food and Drug Administration (FDA) recommended genetic testing to determine non-functioning CYP2C19 alleles. This test is useful to identify a patient's CYP2C19 genotype and determines the therapeutic course of action. Individualized antiplatelet treatment allows us to anticipate potential efficacy, maximize benefits by reducing the risk of recurrent CV events. Studies have shown that genotype-guided therapy has economic benefits due to the prevention of adverse cardiac events. American College of Cardiology/American Heart Association (2012) recommended genetic tests for clopidogrel resistance in patients with recurrent CV events despite antiplatelet treatment. The Clinical Pharmacogenetics Implementation Consortium (CPIC) (2013) recommend to use genotype-guided antiplatelet therapy for patients with ACS who are undergoing PCI and use alternative antiplatelet agent (ticagrelor, prasugrel) for intermediate metabolizer (\*1/\*2; \*1/\*3; \*2/\*17) and poor metabolizer (\*2/\*2; \*2/\*3; \*3/\*3), if no contraindication.

**Conclusions.** CYP2C19 genotyping is useful to identify intermediate and poor metabolizer, prescribing an antiplatelet therapy based on CYP2C19 genotype that would reduce thrombotic complications. The criteria for personalized therapy have so far not been established that would guarantee the efficacy and individual safety of patients that administer clopidogrel.

**Key words:** CYP2C19 genotype, clopidogrel.

## DEPARTMENT OF OTORHINOLARYNGOLOGY

### 124. PROSPECTS OF CELL THERAPY IN THE TREATMENT OF RECURRENT AND CHRONIC RHINOSINUSITIS IN CHILDREN

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**Introduction.** Chronic rhinosinusitis is an important public health issue, the incidence and prevalence of which has been constantly growing in both the developing and the developed countries, having a negative impact on the quality of life and bringing about significant costs for the diagnosis and treatment. The management of recurrent and chronic rhinosinusitis represents a major concern for the otorhinolaryngology service. Traditionally, the treatment of recurrent and chronic rhinosinusitis has been performed by administering antibiotics, nasal irrigation with saline solution, decongestant nasal sprays, topical and systemic corticosteroids, antihistamines, antileukotrienes, and surgery as needed. Unfortunately, these methods are not free of risks and adverse effects. At the same time, the efficiency of standard treatment is lower than expected.

**Aim of the study.** To review the specialized literature and conduct a clinical and immunologic research whose aim is treatment of recurrent and chronic rhinosinusitis in children optimization using cell therapy.

**Materials and methods.** This article summarizes the information from specialized literature about the importance of cell therapy in the treatment of a number of pathologies, particularly its

importance in the treatment of rhinosinusal inflammatory pathology. The bibliographic used databases were the following: Cochrane, PubMed, and Medline.

**Results.** A placebo-controlled randomized trial of bone marrow-derived mesenchymal cells (MSC) [Prochymal; Osiris Therapeutics Inc] in patients with moderate to severe chronic obstructive broncho-pneumopathy (COBP) in the United States has proved safe and with no acute infusion-related toxicity and no attributed mortality or serious adverse reactions during a two-year monitoring period. Another randomised controlled study on 24 patients has shown that the administration of marrow-derived mononuclear stem cells is feasible and safe in ischemic stroke. Cell therapy combined with physiotherapy has led to improvement of the clinical scores and the functional imaging (fMRI) after 8 weeks, as compared to only physiotherapy, and changes have lasted up to 24 weeks. Stem cells perform a "Trojan Horse" type of action in the affected nervous tissue, by stimulating the repair mechanisms, which leads to behavioural recovery after a stroke. A laboratory research has shown that adipose tissue-derived stem cells (ADSCs) may provide a clinical option for the repair of vocal folds mucous injuries. Danilov L. (2016) proposed a new method for local immunocorrection (with autologous mononuclear cells) in the conservative complex treatment of compensated chronic tonsillitis in children, which proved to be very efficient through its positive clinical effect, the normalisation of body's pre-immune resistance; the obvious drop-down of the high index of allergic reactions, and of the levels of specific cell sensitivity to the antigens of streptococcus, pneumococcus; the increase of the total content of lymphocytes, as well as the level and functional activity of T and B lymphocytes; increase in the efficiency of the cytokine profile and reduction of pro-inflammatory cytokines (TNF- $\alpha$ , IL-8, IL-1 $\beta$ ), as well as and the increase of the serum concentrations of anti-inflammatory cytokines (IL-4).

**Conclusion.** The researches presented in this review strongly support the further investigation of the cell therapy methods for the treatment of chronic otorhinolaryngology pathologies.

**Key words:** recurrent and chronic rhinosinusitis, cell therapy, immunologic marker

## 125. NASAL PERMEABILITY IN CHILDREN WITH CHRONIC HYPERTROPHIC RHINITIS

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**Introduction.** Chronic hypertrophic rhinitis represents a current and a major problem in otorhinolaryngology, with a frequency of 16-25% of the population in different countries, with a growing prevalence and accounting for about half of the pathology of patients, which is addressed to the Otorhinolaryngologist. Among the methods of diagnosis of chronic hypertrophic rhinitis one of the most representative is acoustic rhinometry. Acoustic rhinometry is a very effective and easy method to determine the degree of nasal obstruction. This method was described by Jackson in 1977 and was first applied by Hilberg (1986) and provides for the writing of nasal fossil geometry. Acoustic rhinometry allows non-invasive evaluation of nasal permeability to be applied to children. Therefore we considered it appropriate to conduct a literature review on the methods of diagnosis of chronic hypertrophic rhinitis.

**Aim of the study.** To perform a detailed analysis of the contemporary literature data for the diagnosis of acoustic rhinometry in chronic hypertrophic rhinitis.

**Materials and methods.** We have carried out a successive analysis of the bibliographic data of recent years presented in the specialized periodical literature on the Internet and Medline. We have selected scientific papers published in our country and abroad, which refer best to the issues that we approached in this study. As a method of study we used the analysis of the theoretical

principles of the rhinomanometry method and the appreciation of its practical effectiveness in patients with nasal obstruction in chronic hypertrophic rhinitis.

**Results.** Acoustic rhinometry is a sound-based technique used to measure the surface and volume of the nasal cavity. It was validated by computerized tomography and magnetic resonance imaging. Acoustic rhinometry requires minimal patient co-operation and can be used in adults, children and infants. It is used by practitioners to diagnose and evaluate therapeutic responses in conditions such as rhinitis and to measure nasal dimensions during allergen challenge testing. Acoustic rhinometry also provides a visual reflection of the nasal response to therapy, which may be useful in enhancing prescription medication.

**Conclusions.** Following studies, acoustic rhinometry has been shown to be an objective method of Exploring nasal permeability that allows for: differentiation of anatomical defects and it is beneficial and useful to be applied for the assessment of the minimum cross sectional area and volume in patients with pre- and post-treatment hypertrophic chronic rhinitis.

**Key words:** chronic hypertrophic rhinitis, acoustic rhinometry

## SURGERY SECTION I

### DEPARTMENT OF SURGERY no.1 *NICOLAE ANESTIADI*

#### 126. BILIO-DIGESTIVE FISTULA – A SEVERE EVOLUTIVE COMPLICATION OF BILIARY LITHIASIS

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**Introduction.** Bilio-digestive fistula is referring to mechanical complications of cholelithiasis, representing abnormal communication between biliary and gastrointestinal tracts.

**Aim of the study.** Analyzing the experience in diagnosis and treatment of patients with bilio-digestive fistula as evolutive complication of biliary lithiasis.

**Materials and methods.** Retrospective study included 12 patients with bilio-digestive fistula, aged between 63 years and 78 years, diagnosed and treated in Municipal Hospital "Sf. Arhanghel Mihail" (Chisinau) from 1997 till 2017.

**Results.** Referred complication was more common in female patients – 8 (66.66%). There were four cases of incomplete fistula and 6 cases of complete fistula with signs of acute intestinal obstruction (Bouveret syndrome). Depending on anatomical criteria there were 8 cases of cholecysto-duodenal fistula, and 2 cases of cholecysto-gastric fistula. The duration of gallstone disease history varied from 9 years to 15 years. Diagnostic tools included the abdominal X-ray exam, which revealed the presence of air in bile ducts – in 5 cases, and Kloiber sign – in 4 cases. Transabdominal ultrasound exam was performed in all patients, highlighting the presence of stones in the gallbladder in 4 cases, all with incomplete fistula. Surgical treatment was different for complete and incomplete fistula. Postoperative morbidity rate reached 16.66% (complications occurred in 2 cases).

**Conclusions.** Abdominal X-ray exam remains the most informative in the diagnosis of complete bilio-digestive fistula. Incomplete fistula requires a differential diagnosis with bilio-biliary fistula. The treatment should be differentiated, adapted to the peculiarities of the case.

**Key words:** bilio-digestive fistula, biliary lithiasis, surgery.

#### 127. TREATMENT OPTIONS IN SLIDING INGUINAL HERNIA.

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**Introduction.** The prolaps of a retroperitoneal viscus can cause a sliding hernia. From 2% to 5% of all inguinal hernias are of sliding variety.

**Aim of the study.** Analysis of the treatment experience of patients with sliding inguinal hernia.

**Materials and methods.** The retrospective study of a group of patients aged between 42 and 78, diagnosed and treated in SCM "St. Archangel Michael "during the years 2015-2017.

**Results.** This pathology is more common for men 95% (32 cases), women 5% (2 cases). Direct hernia was found in 15% (6 cases), the oblique in 85% (28 cases). Anatomically was appreciated 30% of bladder slippage - 10 patients, 52% of sigmoid colon slippage - 18 patients and 18% of cases with caecum slippage - 6 patients, 2 of whom were associated with acute phlegmonous appendicitis. Strangulated hernia was detected in one case, incarcerated in 82% - 28 patients and simple hernia was founded in 15% - 5 cases. In 41% of cases (14), the diagnosis was established preoperatively, using EUS, R-abdomen, and irigography. In 59% of cases (20) the diagnosis was established during the surgery. Surgical treatment has been differentiated depending on the clinical form of hernia and the present complications. The reconstruction of the hernia defect was performed in: 16 cases with Liechtenstein technique, 2 cases the technique of Shouldice, 8 cases the technique of Postemski, 2 cases the technique of Kimbarovski in, one case the hernioplasty after Fabritus.

**Conclusions.** The proportion of sliding hernias is even higher in the elderly. Hernias of this kind are found almost exclusively in males and usually on the left side. The cleavage hernias occur more frequently at patients that suffer of obesity and inguinal hernia for many years. Surgical reconstruction is differentiated and adapted to the clinical particularities of each case.

**Key words:** sliding hernia, surgery, plastics

## **128. CLINICAL EVOLUTION AND PROGNOSIS OF BLEEDING FROM GASTRIC VERSUS ESOPHAGEAL VARICES: COMPARATIVE STUDY**

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Scientific adviser: Ioan Cristian Nedelcu, University assistant

*Carol Davila* University of Medicine and Pharmacy, Bucharest, Romania

**Introduction.** Gastrointestinal bleeding is by far the most severe and life-threatening complication of portal hypertension in cirrhotic patients. The location of the varices is tightly bound to the management of the patient, especially as regards to the endoscopic haemostasis; hence the gastric varices have a more difficult approach than the esophageal one. Consequently the gastric variceal bleeding might have a more reserved prognosis.

**Aim of the study.** The comparison of evolution and prognosis of patients after an episode of upper gastrointestinal bleeding through a variceal outburst according to the site of bleeding (gastric varices *versus* esophageal varices).

**Materials and methods.** We conducted a retrospective study which included 214 patients and comprised 310 variceal bleeding episodes through the year 2017 (patients who were admitted to the emergency room of Bucharest Clinical Emergency Hospital "Floreasca"). For 61/310 (19.7%) observations the etiology was represented by gastric varices.

**Results.** Regarding the management of patients, the therapeutic mean chosen in majority of cases was the endoscopic haemostasis through ligation (89% out of 310 episodes); whilst for a smaller percentage – cyanoacrylate injections and Sengstaken-Blakemore tube were chosen. Amongst the patients with gastric varices we recorded a higher mortality in comparison with

patients with oesophageal variceal bleeding (15.8% vs. 8%). Likewise, there was a difference suggesting a slightly higher severity of gastric varices bleeding considering the mean value of hemoglobin at admission (7.3 g% vs. 8.31 g%) and duration of hospitalization (4.8 vs. 3.8 days).

**Conclusion.** Despite similar modalities of management for the two types of variceal outburst, gastrointestinal bleeding from gastric varices is strained by a lugubrious prognosis and evolution. Therefore these patients should undergo a more thorough and specific management and follow-up.

**Key words:** haemorrhage, gastric varices, esophageal varices, clinical evolution, prognosis

## 129. TREATMENT OF PANCREATODUODENAL TRAUMA

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**Introduction.** Pancreatoduodenal trauma is one of the most serious and severe abdominal traumas, which comprises 1-10% of all abdominal injuries. As a result of the difficulties in diagnosis and treatment, the rate of complications and mortality are quite high.

**Aim of the study.** Analysis of treatment outcomes in patients with concomitant traumatic lesions of the pancreas and duodenum in dependence to the degree of pancreatic trauma.

**Materials and methods.** During the 1998-2007 at the Department of Surgery n.1 "Nicolae Anestiadi" 30 patients with pancreatoduodenal trauma were operated. First and II grade of the pancreatic lesion were diagnosed in 23 (76.7%) cases. Only in 4 (13.3%) patients were observed lesions of grade III and IV. Lesions of grade V were detected only in 3 (10%) patients. Segment D1 of duodenum was affected in 16.7% cases, D2 – in 50%, D3 – in 16.7% and D4 – in 6.7%. Injuries of more than 2 segments were seen in 3 patients.

**Results.** The duodenum was excluded from the passage in 30% of cases due to duodenal wall lesions and the presence of acute posttraumatic pancreatitis (AFTP). In 21 (70%) patients the anatomic passage was maintained for duodenum. The draining of the omental bursa (OB) was performed in 23 (76.7%) patients, and the bursoomentostomy (BOS) - in 7 (23.3%). The AFTP rate was 75% and 100%, respectively, both for the preservation and exclusion of the duodenum from the passage. Note that in all of these cases (7 pts) BOS has been applied in traumatic lesions of the pancreas grade III – V. The rate of AFTP and mortality were 83.3% and 33.3%, respectively for lesions of grade III-V compared to the 82.3% and 23.5% in lesions grade I and II. In the first 48 hours, 7 (23.3 %) patients died due to hypovolemic shock and retroperitoneal phlegmon. The high frequency of mortality (25%) in the group of patients in whom primary duodenum suture was performed without its exclusion from the passage with the application of BOS is due to late hospitalization (> 48 hours) and the presence of AFTP. Relaparotomy for pancreatic necrosis was required in 6 (20%) patients with necrectomy and application of BOS, with a mortality of 50% in the postoperative period. Causes of mortality were post-traumatic pancreatic necrosis, persistence of high-grade duodenal fistula, as well as MODS.

**Conclusion.** In the pancreatoduodenal trauma with lesions of the pancreas of grade I-II optimal treatment is the suturing of duodenal injury with closed drainage of OB, whereas in severe lesions it is recommended to exclude the duodenum from the passage with BOS application.

**Key words:** pancreatic trauma, duodenal trauma, post-traumatic pancreatitis, surgery

## 130. HERNIOALOPLASTY IN VENTRAL HERNIAS

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**Introduction.** Lately, abdominal surgery has seen a particular development in frequency and magnitude of surgical interventions, followed by a major incidence of incisional hernias. Rehabilitation surgery has progressed over time, and so did the abdominal wall reconstruction techniques, along with the widespread use of synthetic allografts (polyamide, polypropylene, polyester, polytetrafluoroethylene, etc.).

**Aim of the study.** Analysis of the treatment results of patients with incisional hernia, resolved by hernioaloplasty of the anterior abdominal wall.

**Materials and methods.** Retrospective analysis of the treatment results of 98 patients with incisional hernia resolved by anterior abdominal wall hernioaloplasty in the Surgery Clinic (Institute of Emergency Medicine, Chisinau) during 2016-2017 was performed. The M:F ratio was 1:2.92, mean age - 58.63±1.07 years. Demographic data, time of surgery, type of hernioplasty, postoperative evolution and length of hospital stay were analyzed.

**Results.** There were 9(9.18%) patients who underwent emergency surgery, and elective - 89(90.82%) (p <0.001). The alloprosthesis was placed in several ways: anterior position - 6(6.12%), Stoppa-Shumpelick method - 25(25.5%), preperitoneal - 48(48.98%), intraperitoneal - 19(19.4%); the deep positions of prosthesis placement dominated (p<0.001). The postoperative period has evolved through complications in 11(11.22%) patients: pneumonia - 3(3.06%), wound infection - 8(8.16%). Among the factors that influenced the development of complications were: comorbidities in 7(7.14%) patients: diabetes mellitus (2), obesity (7), cardiac pathology (5); multiple abdominal operations 6(6.12%); duration of operation over 2 hours; unexplained drainage in 5(5.1%) patients. The hospital stay was significantly lower in patients without complications compared to those with postoperative complications - 6.98±0.32 vs 17.27±2.02 days, respectively (p<0.001).

**Conclusions.** Hernioaloplasty is a method of choice in abdominal wall repair surgery. Methods of prosthesis placement, compensation of comorbidities, thorough haemostasis and wound drainage can reduce the rate of postoperative complications and the hospital stay.

**Key words:** incisional hernia, hernioaloplasty, postoperative evolution

### 131. POSTTRAUMATIC EVISCERATION IN ABDOMINAL INJURIES

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**Introduction.** Penetrating abdominal trauma (PAT) is still a serious problem all over the world. Routine laparotomies has been preferred in patients with PAT with evisceration for a long time. New treatment algorithms have been sought due to the high rates of unnecessary laparotomies which make up to ½ cases, complication rates that range between 2.5-41% and high morbidity rates reported in various studies.

**Aim of the study.** To compare the efficiency of laparotomy and Selective Nonoperative Management (SNM) in this kind of trauma in the Republic of Moldova.

**Materials and methods.** In our study 61 patients with PAT with evisceration treated at the Emergency Medicine Institute during 2006-2011 were analyzed. We collected data from the patients' medical records regarding: sex, age, geographic distribution of the patients, mechanism, rate of non-therapeutic laparotomies, complications.

**Results.** 47.54% of the patients were over 30 years. 95.08% of the patients were men. 65.57% of the patients live in Chisinau (urban medium). Most traumatic injuries were produced by stab wounds (95.08%). 65.57% of patients had omental evisceration, small intestine in 29.52%, colon in 4.91%. Haemodynamically unstable patients with peritonitis (64.0%) prevailed over the stable ones (36.0%). 9 patients (14.75) of those who were stable were treated with SNM, including 4(6.55%) cases of failed approach, 5(8.19%) patients were successfully managed and other 13(21.31%) patients underwent laparotomy with complication in 7 cases (11.47%). Twenty-nine patients (47.54%) hadn't any major intra-abdominal injury. Patients successfully managed by SNM (5 cases) had significantly shorter hospital stay than those who underwent non-therapeutic laparotomy (13 patients). Average hospital stay for patients treated by SNM are in 80% was less than 3 days and for patients with laparotomy in 69.23% less than 9days.

**Conclusions.** This study has demonstrated better efficiency of SNM for the stable patients that a significantly less complication rate than patients treated operatively and a shorter hospital stay. SNM is necessary to minimize preventable morbidity and mortality for the stable patients. Although the rate of nontherapeutic laparotomies after penetrating wounds to the abdomen should be minimized, this should never be at the expense of a delay in the diagnosis and treatment of injury.

**Key words:** penetrating abdominal trauma, evisceration, laparotomy, selective nonoperative management, complication

### **132. PROTOTYPE OF THE PROSTHESIS FOR RESTORATION OF THE TRACHEA INTEGRITY AFTER ITS RESECTION**

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**Introduction.** An optimal way to restore the integrity of the trachea after its resection is an "end to end" anastomosis. But, with the removal of large fragments of the trachea, and especially restenosis correction, there are difficulties that can be eliminated by prosthetics. However, the issue of material selection for tracheal prosthesis remains unresolved and relevant.

**Aim of the study.** To develop a model of alloprosthesis of the fragment of a trachea and to test it on a living organism; during the intraoperative adaptation to identify possible structural deficiencies and correct them.

**Materials and methods.** Linear vascular prosthesis 10 mm in diameter, tracheobronchial stent "Ultraflex", suture material, a set of surgical instruments, preparations for intravenous anesthesia, dressing material. Accounting documents and statistical indicators of the activities of the Department of Thoracic Surgery Vinnytsia Regional Clinical Hospital named by M.I. Pyrogov for 2004-2018. Applied methods of scientific subject modeling, analytical and comparative analysis. An in vivo prosthesis trial was performed on a not thoroughbred rabbit weighing 4100 grams. The intervention consisted of sewing the prosthesis in the trachea of the animal after its intersection with the imposition of two "end-to-end" anastomosis.

**Results.** In the period between 2004 – 2018 seven circular trachea resections (4 - cervical and 3 - mediastinal divisions) were carried out, all - concerning posttraheostomy stenoses. The length of the resected segment was from 2 to 5 rings. The connection of the ends at the removal of 4 or more rings caused some technical difficulties, although the observation ended with the recovery of patients. The expediency of replacing the fragment of the trachea in such cases led to an attempt to develop a prosthetic of its own design. Testing this model of a denture in a living organism has highlighted some of its structural deficiencies, which influenced the course of

intervention and the early postoperative period. In particular, during the intervention there was a problem of adaptation of the ends of the prosthesis to the ends of the trachea. And after the operation there was a partial occlusion of the prosthetic lumen due to adhesion of the blood clots to its internal surface. Taking into account the experience gained, we have made changes in the design of the implant. The new model of tracheal dentures seems rather promising for use.

**Conclusions.** The prototype of the prosthesis manufactured by us meets most of the modern requirements and our goals. In the future, the use of the implant of the proposed type can simplify the course of the resection of large tracheal fragments and contribute to avoiding a number of perioperative complications.

**Key words:** trachea, prosthesis, integrity restoration, resection

### 133. THE EVOLUTION OF METABOLIC SYNDROME AFTER GASTRIC BY-PASS

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**Introduction.** Metabolic syndrome in the past decade knows an alarming growth worldwide. Each year 3.2 million people around the world die from complications of the metabolic syndrome. The Oman Family Study reported a prevalence of metabolic syndrome in the world of 23%. In the Republic of Moldova, based on the International Diabetic Federation (2009), prevalence is estimated at 23,7%. The treatment of metabolic syndrome is often symptomatic and patients have to take medications for each disorder. Disadvantage of these medications is that they don't treat the pathology, but only relieve symptoms and help to maintain the values of analyzes in normal limits. An alternative solution of this problem can serve gastric bypass surgery.

**Aim of the study.** To assess the efficiency of gastric bypass in evolution of the metabolic syndrome in the context of morbid obesity.

**Materials and methods.** The study was performed on a group of 226 people who underwent gastric bypass surgery between 2009-2018, including 63 men and 163 women. The average of the weight before surgery was 123.22 kg, average of body mass index was 44.03kg/m<sup>2</sup>. Metabolic syndrome was diagnosed in 106 patients, (47%), including: patients with hypertension - 62 (55%), with diabetes mellitus - 58 patients (51%), with hyperlipidemia - 87 patients (82%).

**Results.** One year after surgery we have noticed a positive evolution of the metabolic syndrome with the following parameters: weight average – 82.95 kg, average of body mass index – 29.53kg/m<sup>2</sup>. In 89% of patients remission of hypertension was registered, remission of diabetes mellitus - in 95% of patients, and remission of hyperlipidemia - in 96.55% of patients.

**Conclusions.** Gastric bypass surgery represents an effective method of treatment of the metabolic syndrome and its comorbidities. Obesity surgery improves health among adults with severe obesity. Gastric bypass is indicated to treat morbid obesity, type 2 diabetes, hypertension, and other comorbid conditions. After interventions patients lose up to 64.06% of their excess weight within 1 year, blood pressure normalizes, blood sugar gets normal, and hyperlipidemia returns to normal limits.

**Key words:** metabolic syndrome, gastric bypass surgery

### 134. VIDEO-ASSISTED THORACOSCOPY - THE OPPORTUNITY IN THE MANAGEMENT OF THE COMPLICATED THORACIC TRAUMA

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**Introduction.** Retained haemothorax and pleural empyema are the most common complications of thoracic trauma (TT). TT is a major cause of morbidity and mortality in specialized surgery trauma centers. With the increased potential of the mini-invasive surgery, video assisted thoracoscopy (VATS) has become an elective method of treatment for these patients.

**Aim of the study.** To evaluate the usefulness of video assisted thoracoscopy in the management of the patients with complicated thoracic trauma.

**Materials and methods.** A prospective analysis of the treatment results for the patients with thoracic trauma injuries associated with pleuro-pulmonary complications was carried out during the period 2016-2017 at the Institute of Emergency Medicine from Chisinau, Rep. of Moldova. 522 patients were included in the study. The ratio M:F - 2:1. Mean age -  $\pm 54.64$  years. 126 (24.3%) patients had pleuropulmonary complications: 68 (13%) - hemothorax, 58 (11.1%) - posttraumatic pneumothorax. All patients with baseline pleuropulmonary complications were subjected to pleural drainage.

**Results.** 4 (0.76%) patients underwent VATS to manage pleuropulmonary complications over 24 hours from hospitalization. 2 patients were identified with retained hemothorax. One patient suffering from pneumothorax as a result of pulmonary parenchymal lesion and another one with pleural effusion. No patient in the study group was subjected to conversion to open thoracotomy. The hospitalization period of patients after VATS was  $5.0 \pm 0.4$  days, compared to  $5.92 \pm 5.7$  days in patients with pleural drainage ( $p > 0.05$ ).

**Conclusions.** VATS is a method of choice in patients with complicated thoracic trauma, unresolved by pleural drainage and performed over 24 hours from hospitalization. This tactic greatly reduces the rate of late complications and the period of hospitalization for patients.

**Key words:** VATS, thoracic trauma, pleural drainage

### 135. SURGICAL TACTICS IN COLORECTAL CANCER

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**Introduction.** Colonic cancer is a public health problem with a significant negative impact on morbidity and mortality. Currently, colorectal cancer is placed on the third place after lung and breast cancer. Although in the case of occlusive neoplasm located on the right colon resection with primary anastomosis is considered as a way of completing the surgical intervention, except for extremely severe patients, this claim cannot be applied to all patients with neoplasms located on the left colon.

**Aim of the study.** Analysis of surgical treatment results of patients with colorectal cancer.

**Materials and methods.** A retrospective - descriptive study was carried out with the analysis of the observation files and the operative protocols of 152 colorectal cancer patients operated at PMSI IEM during 2015-2017. The age of the patients, the postoperative evolution according to the time of the operation, the type of finishing of the operation were analyzed.

**Results.** The analysis showed the following: men were 81 (53.29%) and women - 71 (46.71%), ratio M:F = 1.14:1. The mean age was  $64.7 \pm 0.99$  years. According to the tumor site, the patients were distributed as follows: right hemicolon - 50 (32.89%), left hemicolon - 102 (67.11%), ( $p < 0.001$ ). From the total group, 97 (63.72%) patients had obstructive syndrome ( $p < 0.001$ ); 7 (4.61%) - partial obstruction; 18 (11.84%) - digestive haemorrhage and 30 (19.73%) - no acute

complications. A number of 98 (64.47%) patients were subjected to emergency surgery and 54 (35.53%) cases - elective surgery ( $p < 0.001$ ). The operations were completed with the application of primary anastomosis in 104 (68.42%) cases, and in 48 (31.58%) with the application of external derivations, 25 (52.08%) of the patients having metastases. Thus, 14 (29.17%) transversostomies, 12 (25%) sigmостomies, 11 (22.92%) descendostomies, 1 (2.08%) cecostomy and 10 (20.83%) ileostomies were applied. Of the total number of anastomosis performed, 7 (6.25%) were complicated by leakage and 14 (29.16%) patients with stoma developed different postoperative complications (pneumonia, sepsis, DIC syndrome, etc.). The mean hospitalization time was  $15.9 \pm 1.9$  days in patients with stomas and  $19.41 \pm 1.45$  in patients with primary anastomosis. Postoperative mortality was 16.45% ( $n=25$ ), of which 12 (7.89%) with primary anastomosis and 13 (8.55%) with stomas.

**Conclusions.** The extent of surgery in colorectal cancer depends on the location of the tumor and the clinical manifestations at hospitalization. The obtained results revealed that colon cancer localization rate is significantly higher on the left hemicolon ( $p < 0.001$ ). High proportion of the patients showed signs of obstruction at hospitalization ( $p < 0.001$ ), arguing the significantly higher rate of emergency surgery. Despite no significant differences, the rate of postoperative complications and mortality was higher in the group of patients operated in emergency and with external intestinal derivations.

**Key words:** colorectal cancer, surgical treatment, primary anastomosis, external intestinal derivations

### 136. MANAGEMENT OF PATIENTS WITH ABDOMINAL WOUNDS

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**Introduction.** Modern management of abdominal wounds remains controversial and undergoes continuous re-evaluation. Abdominal wound management varies according to the following factors: mechanism, site, haemodynamics and neurological status, associated injuries and institutional resources.

**Aim of the study.** Analysis of treatment outcomes in patients with abdominal wounds.

**Materials and methods.** A retrospective and prospective study was performed on a group of 89 patients with abdominal wounds treated at the PMSI Institute of Emergency Medicine for the period 01.01.2015 - 31.12.2017. Clinical features and evolution, paraclinical investigations and surgical protocols in patients with abdominal wounds were analyzed.

**Results.** Data analysis revealed: M:F ratio - 7.9:1; mean age -  $36.34 \pm 1.3$  years; patients with non-penetrating wounds - 44 (49.4%) and penetrating wounds - 45 (50.6%). Patients with non-penetrating wounds ( $n = 44$ ) were subject to revision of the wound canal and subsequent primary surgical wound debridement. Haemodynamically stable patients with penetrating wounds without peritoneal signs ( $n = 18$ ) had the following diagnostic algorithm: abdominal X-ray (17), FAST (17), laparoscopy (4), they underwent primary surgical wound debridement and were admitted for monitoring. Haemodynamically unstable patients with penetrating wounds and with peritoneal or hemorrhagic syndrome ( $n = 27$ ) followed: abdominal X-ray (14), FAST (15), diagnostic laparoscopy (5), subsequently undergoing emergency exploratory laparotomy, in all cases injuries of intra- and extra-abdominal viscera (32) and blood vessels (3) were detected. Nine (33.33%) patients developed complications after laparotomy in the postoperative period: pneumonia (7), evisceration (1), wound sepsis (1). The duration of hospital stay of patients with non-penetrating wounds was on average  $3.45 \pm 0.3$  days, of nonoperatively treated penetrating wounds -  $2.42 \pm 0.52$ , compared with cases of lesions of the abdominal viscera treated with

curative laparotomy -  $8.2 \pm 1.2$ , ( $p < 0.001$ ). One patient died before laparotomy. Of patients which underwent laparotomy, 3 died (11.11%).

**Conclusions.** Abdominal wound management is of major concern and includes patient selection for different treatment tactics. Haemodynamically stable patients without peritoneal signs require clinical examination and dynamic monitoring, and those haemodynamically unstable with hemorrhagic and peritoneal syndrome - emergency exploratory laparotomy. Differentiated therapeutic attitude leads to avoidance of non-therapeutic laparotomies, decrease of the postoperative complications rate, hospital stay and medical costs.

**Key words:** abdominal wounds, diagnosis, treatment

### 137. MANUAL VS. MECHANICAL ANASTOMOSIS IN COLON RESECTIONS – ARE THERE ANY RISK FACTORS?

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**Introduction.** Colonic resections with intestinal anastomosis are laborious interventions that require advanced technical skills. Modern technologies provide new equipment and mechanical devices for anastomosis which come to simplify the surgery.

**Aim of the study.** Analysis of the risk factors in colon resections according to the type of anastomosis.

**Materials and methods.** A retrospective study was made with the analysis of the patient's medical history and the operative protocols of 130 patients with colorectal resections completed with anastomosis in the PMSI IEM during 2015-2017. The postoperative evolution of patients with anastomosis was analyzed according to the time of surgery, type of anastomosis (mechanical / manual), type of continuity, location of anastomosis, duration of surgery, age of patients.

**Results.** The results of the analysis were as follows: ratio M:F - 4:5; average age -  $61.45 \pm 1.3$  years. 84 (64.62%) patients underwent resections with manual anastomosis and 46 (35.38%) - mechanical anastomosis ( $p < 0.001$ ). 74 (56.92%) patients underwent an emergency surgery, 56 (43.07%) had elective interventions, there was no significant difference between these groups. The postoperative period has evolved with anastomotic leakage in 6 (4.62%) cases: 3 (3.57%) with manual anastomosis and 3 (6.52%) with mechanical ( $p > 0.05$ ). There were 5 (5.95%) leakage cases in the left colon resections - no significant difference compared to their incidence in the right hemicolectomy - 1 (2.22%). There were no significant differences in the location of anastomosis: of the rectum region 3 (7.69%), colo-colic 2 (4.28%), with ileum 1 (2%). According to the continuity of the anastomosis, two cases of leakage were observed: 6.67% in the termino-lateral anastomosis, 5.56% in the lateral-lateral and 3.13% in the termino-terminal, ( $p > 0.05$ ). Age did not manifest itself as a risk factor for anastomotic fistula,  $69.33 \pm 4.4$  years in patients with anastomotic leakage compared to  $60.48 \pm 1.36$  in survivors ( $p > 0.05$ ). Although the duration of the surgery with mechanical anastomosis was less ( $154.9 \pm 9.14$ min) compared to manual anastomosis ( $173.47 \pm 8.49$ min), no significant differences were observed, similar to the duration of the operation with favorable evolution compared to the cases of anastomosis dehiscence, respectively  $168.53 \pm 1.36$ min versus  $140.33 \pm 8.8$ min. 12 (9.2%) patients died.

**Conclusions.** Although the rate of manual anastomosis significantly outweighs the mechanical ones in colon resections ( $p < 0.001$ ), there were no risk factors with significant difference regarding the incidence of anastomotic leakage according to the parameters analyzed.

**Key words:** Colon resections, manual and mechanical anastomosis, anastomotic leakage

## DEPARTMENT OF SURGERY no.2

### 138. THE CLINICAL AND ENDOSCOPIC PROFILE OF OPERATED PATIENTS WITH LIVER CIRRHOSIS

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Scientific advisers: Cazacov Vladimir, MD, PhD, Vladimir Hotineanu, MD, PhD, Professor, Academician, Department of Surgery no.2

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**Introduction.** The diagnosis and treatment of postsurgical complications with the deduction of therapeutical algorithm are major requirements of portal hypertension surgery.

**Aim of the study.** To analyze the postsurgical evolution of chronic liver disease in operated patients having liver cirrhosis.

**Materials and methods.** A retrospective analyze has been performed on 39 patients with this disease, which previously had surgical treatment: azygoportal devascularization + open splenectomy (29 patients) and assisted laparoscopic surgery (10 patients). All patients, among which 24 women (21.5%) and 15 men (38.4%) with average age of 34.1 years, with various viral etiology: hepatitis viral B (33.3%), hepatitis viral B + hepatitis viral D (46.1 %), hepatitis viral C (20.5%); after the surgery followed syndromal hepatotropic treatment.

**Results.** Monitorization and investigation of the study lot according to the proposed clinical protocol have allowed the early diagnosis of belated complications, as follows: esophageal varices of II-nd and III-rd degree (20.5%), variceal digestive haemorrhage (7.6%), ascites (7.6%), thrombosis of the portal vein (15.3%), abscess in the spleen loge (2.5%). Over half of these patients needed frequent hospitalizations, postsurgical monitoring and endoscopic or surgical treatment (2.5%), when required, which reduced the risk of unwanted clinical outcome, marked by hepatic decompensation.

**Conclusions.** 1. In the evolution of liver cirrhosis after azygoportal devascularization and splenectomy appeared particular features, which require evaluation, complex investigations and prophylactic/ curative treatment in order to avoid undesirable complications. 2. The development of the reoccurring esophageal varices with hemorrhagic risk enforce “banding” and endoscopic monitorization. 3. The presence of thrombosis of the spleno-portal venous spindle involves a complex antiplatelet treatment, mixt imagery monitoring (computer tomography, portal doppler ultrasonography).

**Key words:** cirrhosis, portal hypertension, azygoportal devascularization

### 139. DIABETIC FOOT: DIAGNOSIS AND CONTEMPORARY TREATMENT

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**Introduction.** Diabetic foot (DF) is one of the most serious consequences of diabetes mellitus that can occur during lifetime in these patients. The burden of DF is very high nowadays and is expected to increase more in the future. The incidence of DF is still rising due to the high prevalence of predisposing factors. Most of the DF amputations are preceded by foot ulceration. Diabetic peripheral neuropathy (DPN) is a major risk factor for foot ulceration. DPN leads to loss of protective sensation resulting in continuous unconscious traumas. Patient education and detection of “high risk foot” are essential for the prevention of foot ulceration and amputation. Management is based on revascularization procedures, wound debridement, treatment of infection and ulcer offloading.

**Aim of the study.** The complex evaluation of patients with DF including clinical differentiation of the neurophatic and neuroischaemic forms, monitoring of the disease evolution and development of complications as well as determination of the optimal non-surgical and surgical treatment.

**Materials and methods.** The retrospective study has been performed in the General Surgery Department of the Republican Clinical Hospital “Timofei Mosneaga” (Chisinau) during the year 2017. The study group included 99 patients with complicated diabetes mellitus. The clinical data of the patients was collected from their medical records.

**Results.** According to the study 62% of the patients were male and 38% female, the majority in the age between 61 and 70 years. Most of patients have suffered diabetes mellitus type II (96%). In 78% of patients neuroischaemic form of DF was diagnosed and only in 22% - neuropathic form. Complications occurred in patients who have diabetes mellitus for at least 5 years. Most of the patients suffered with grade III or IV DF, according to the Wagner classification. Surgical treatment included the following procedures: necrectomy, amputations, opening and draining of the phlegmon, percutaneous transluminal angioplasty.

**Conclusion.** DF ulceration is generally preventable. The first step in ulcer prevention is the careful screening for foot problems and detection of patients at high risk. More research is still required to improve the diagnosis of conditions leading to foot ulceration. Multi-disciplinary team approach is required to effectively manage the different aspects of DF syndrome.

**Key words:** diabetes mellitus, diabetic foot, ulcers, neuropathy, ischemia

#### **140. CROHN'S DISEASE: CLINICAL FORMS, EVOLUTION AND SURGICAL TREATMENT IN REPUBLIC OF MOLDOVA**

Author: **Vitalie Turcan**

Scientific adviser: Tudor Timis, MD, PhD, Associate Professor, Department of surgery no. 2, *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** Essential increase of Crohn's disease (CD) incidence and changes of disease evolution were marked in some countries of Eastern Europe. Studies in the Republic of Moldova are insufficient.

**Aim of the study.** To analyze the clinical features, evolution and surgical treatment of CD in Moldova in the last 3 years.

**Material and methods.** The demographic, clinical and biological parameters were analyzed in retrospective study in patients with CD from surgical department of Republican Clinical Hospital in 2015-2017. Diagnosis of CD was confirmed by endoscopy, histology, radiology or entero-MRI.

**Results.** The study included 44 patients aged 17-75 years, mean age - 45,1±14,7. The predominance of male (59.1%), patients from urban areas (54.5%) and non-smokers (77.4%) were observed. The age at diagnosis between 17 and 40 years was in the majority of cases (54.5%), more than 40 years – 36.4% and less than 17 years – 9%. Disease location according to the Montreal classification was: 63.6% - ileocolon; 31.8% - colon; 4.6% - terminal ileum. Disease behavior of B1 type (non-stricturing non-penetrating) was detected in 4.6% cases; of type B2 (stricturing) - in 36.4% cases; of type B3 (penetrating) - in 40.9% and 18.1% of patients had stricturing and penetrating course. The urgent surgical intervention was done in 52.3% of cases, and the elective surgery in 47.7%. The main indication for urgent surgery were intestinal occlusion, acute hemorrhage and local septic complication; for elective surgery – fistula, sub compensated stenosis and ineffectiveness of medical treatment. The percentage of post-surgical replaces and repeated surgical intervention had a direct correlation with the disease duration: in case of CD duration less than 5 years 29.4% underwent repeated surgery, in case of disease evolution longer than 10 years – 58.3%. The most often type of surgical intervention was the



hemicolectomy with ileotransverse anastomosis (38.6%), and subtotal colectomy with ileorecto anastomosis (25%). Fistula excision, abscess treatment with or without segmental resection of intestine was done in 25% of patients. Subtotal colectomy with ileostoma was necessary in 11.4%.

**Conclusions.** The major part of patients with CD from surgical department had progressive structuring and / or penetrating disease evolution (95.4%). The most often type of surgical intervention was the hemicolectomy with ileotransverse anastomosis (38.6%). The percentage of post-surgical replaces and repeated surgical intervention had a direct correlation with the disease duration.

**Key words:** Crohn's disease, evolution, clinical forms, surgical interventions

#### 141. DIAGNOSIS AND TREATMENT OF CEPHALOPANCREATIC CANCER

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**Introduction.** Pancreatic cancer is a devastating disease, although it represents only 2-3% of all malignant tumors, it is the 5th cause of cancer mortality and the 3rd cause of lethality among digestive neoplasms. In the Republic of Moldova in the last 10-15 years the incidence significantly increased to 3.8-4.0%.

**Aim of the study.** Analysis of clinical and paraclinical methods of diagnosis and surgical treatment of patients with cephalopancreatic cancer.

**Materials and methods.** The study consisted of the medical records of 131 patients admitted to SCR, the Hepatopancreatic Surgery Unit, between January 1, 2016 and December 31, 2017, aged between 20 and 87, including 56 women and 75 men.

**Results.** Following the retrospective study, we found: the diagnosis of cephalopancreatic tumor was clinically and paraclinically established using the diagnostic methods: USG (100%), standard abdominal CT (71%) and angiographic regimen (24%); Retrograde endoscopic cholangiopancreatography (96%). The rate of resectability in patients included in the study was 21%; the others 79% supporting palliative treatment surgeries. Radical surgeries have been carried out in volume by cephalic duodenopanreatectomy: Child procedure - 43%, and Whipple procedure - 57%. 62 patients had palliative surgical interventions with the internal or external biliodigestive bypass; 41 patients benefited only from endoscopic drainage of the biliary tree due to their advanced age and severe comorbidities. The postoperative mortality did not exceed 5%, the rate of post-operative complications was below 23%, an acceptable value and equivalent to the world data.

**Conclusions.** 1. The gold standard in the diagnosis of cephalopancreatic tumor is abdominal CT angiographic regimen. 2. The rate of resectability can be assessed preoperatively by assessing the abdominal CT data angiographic regimen and endoscopic retrograde cholangiopancreatography; intraoperatively using the posterior approach. 3. Surgical treatment of cephalopancreatic cancer can be radical, aiming at increasing the survival, but also palliative in order to combat symptoms and to increase the quality of life.

**Key words:** Cephalopancreatic cancer, diagnosis

#### 142. THE ROLE OF PRF IN THE TREATMENT OF TROPHIC ULCERS OF LOWER LIMBS

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**Introduction.** Tissue regeneration remains a current multidisciplinary issue. Up to 48% of patients with trophic ulcers are at age of maximum productivity. 67% of patients with trophic ulcers become disabled, and at 81% the quality of life considerably decreases. PRF (Platelet-Rich Fibrin) membranes are a new perspective in tissue regeneration.

**Aim of the study.** To evaluate the effect of fibrin-enriched thrombocytes in tissue regeneration of the patients with trophic ulcers.

**Materials and methods.** This prospective study, started in January 2017 and included 26 patients, divided into 2 groups: with small and medium-sized lower extremities trophic ulcers with duration of 6-24 months without epithelial dynamics. I group 12 patients have used PRF membranes, including 7 (58.3%) patients with chronic venous insufficiency, 3 (25%) with neuropathic ulcers and 2 patients (16.6%) with arterial ulcers. Out of the 14 patients of the control group, 6 (43%) had venous ulcers, 5 (35.7%) ulcers of neuropathic origin and 3 (21%) ulcers of arterial origin. All patients received general and local basic treatment. The microbiological examination in dynamics was performed at all patients. PRF membranes were obtained by centrifugation of peripheral venous blood under special conditions.

**Results.** Complete epithelization at 10 months of treatment combined with PRF was achieved in 66.6% (8) patients. In the control group at 10 months of treatment complete epithelization was obtained in 50% (7) patients. The histological comparison between groups demonstrated neovascularization and PMN in I group compared to group II poor in granulation tissue.

**Conclusions.** PRF is simple and accessible method to use. PRF membranes initiate and accelerate granulation tissue and angiogenesis. At PRF-treated patients, full epithelization of ulcers occurs more rapidly.

**Key words:** trophic ulcer, platelets, regeneration, PRF

## SURGICAL ONCOLOGY

### 143. THE NEUROGENIC RETROPERITONEAL PRIMITIVE TUMORS

Authors: **Victor Schiopu**

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**Introduction.** The histological ambiguity of the retroperitoneal space is the cause of the large specter of primitive tumors. Primitive tumors are classified in those with a mesodermal origin, neurogenic, vestigial, retroperitoneal cysts and various tumors. The neurogenic tumors may have different origins: ganglion cell (ganglioneuromas, ganglioneuroblastomas, neuroblastomas), paraganglionic system (paragangliomas, pheochromocytomas) and nerve sheath (schwannomas, neurofibromas, malignant schwannomas). The neurogenic primitives tumors usually present late symptoms or become palpable once they have reached a significant size (>10cm). The medical imaging (USG, CT, IRM) does not distinguish benign and malign tumors, and it does not reveal the histological origin. The biopsy and the histological examination of the removed tumor remain the main diagnostic methods.

**Materials and methods.** The retrospective study includes 188 cases with primitive retroperitoneal tumors (PRT) from the Gastrology Clinic of IMSP IO Chisinau, between 2005-2017.

**Results.** Neurogenic primitive tumors have been identified in 23 cases (12.23%), 9 (39.13%) - women and 14 (60.86%) - men. The age of the patients ranged from 21 years to 73 years, with the average age being 47.91 years. The histological profile of neurogenic tumors consisted of neurinoma - 6 cases, neurosarcoma - 6 cases, paraganglioma - 2 cases, ganglioneuroma - 2 cases,

neuroblastoma - 1 case, and neurofibroma - 5 cases, schwannoma – 1 case. The radical surgical removal of the tumor was possible in 22 cases, in one case the removal of the tumor was impossible due to an invasion of the spine and the abdominal aorta. In 18 cases (78.26%) the tumor was safely removed, in 4 cases (17.39%) – a combined operation was performed for the removal of the tumor. The recurrence of pathology occurred in 4 patients (17.39%).

**Conclusions.** The neurogenic retroperitoneal primitive tumors are rare pathologies with nonspecific symptomatology, the diagnosis of certainty being the histopathological and the basic treatment being the surgical one.

**Key words:** Primary Retroperitoneal Tumor (PRT), retroperitoneal space (RS), neurogenic tumor

#### **144. PRIMARY RETROPERITONEAL LIPOSARCOMA**

Authors: **Valentin Butnari, Victor Schiopu**

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**Introduction.** Liposarcoma is a common type of soft tissue sarcoma, which occurs most commonly in the extremities (52%), followed by the retroperitoneum (19%). Retroperitoneal liposarcoma (RL) is usually asymptomatic until the liposarcoma is large enough to compress the surrounding organs. It is often misdiagnosed due to its rarity and absence of symptoms. The symptoms of the tumor would not arise until the tumor grows to a certain dimension. Presence of a palpable abdominal mass is the main symptom at diagnosis. The management is surgical intervention. Even with complete removal of the liposarcoma, prognosis remains poor.

**Aim of the study.** To find the distribution of various histopathological types and grade of retroperitoneal liposarcoma and to evaluate the diagnosis, management, postoperative complications and prognosis of retroperitoneal liposarcoma.

**Materials and methods.** Current study presented 188 cases with primitive retroperitoneal tumors (PRT) from the Gastrology Clinic of MSPI Institute of Oncology, observed between 2005-2017.

**Results.** We identified 19 cases (10,10%) with histologically proven retroperitoneal liposarcoma (6 males – 31.57 % and 13 females – 68.42%). The mean age of the 19 patients at presentation was 55.26 years (range 19 - 69 years). No cases were diagnosed using preoperative biopsy. Out of the 19 cases with reported histological subtype, 17 (89.47%) were well-differentiated, 2 (10.52%) were dedifferentiated. All the patients underwent complete resection, of whom 8 (42.10%) received additional visceral organ resection (6 nephrectomy, 1 stomach resection, and 1 right hemicolectomy). However, no patients received chemotherapy or radiotherapy.

**Conclusions.** Retroperitoneal liposarcoma is a rare disease with a high rate of recurrence. Complete resection is the benchmark for treatment, however the combined resection of adjacent organs is occasionally necessary.

**Key words:** Primary Retroperitoneal Tumor (PRT), retroperitoneal space (RS), Retroperitoneal liposarcoma (RL).

#### **145. ONCOLOGICAL MORBIDITY AND MORTALITY AMONG HEALTH CARE PROFESSIONALS IN THE REPUBLIC OF MOLDOVA**

Author: **Veronica Svet**

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**Introduction.** Medical staff, both nurses and physicians, are subject to various carcinogens daily, leading to the development of both benign and malignant tumors, especially in certain specialties. Both the ineffective annual medical checkup and their negligence towards the early symptoms of cancer and the phobia for this disease, the self-medicating treatments have led to an increase in the mortality rate among health care professionals. It is important to study this disease among physicians and nurses as it is insufficiently studied and because health professionals and the health system are responsible for the health of the population.

**Aim of the study.** To study the cancer phenomenon among health care workers.

**Materials and methods.** Medical records of 2034 patients, medical workers registered within the Cancer Registry of the Republic of Moldova during the 2000-2016 were analyzed.

**Results.** Oncological morbidity in the Republic of Moldova increased from 158.5% 00 per 100,000 population in 2000 to 279.4% 00 in 2016, and from medical workers from 238.3 to 348.3 in 2016. Mortality due to malignant tumors among general population increased from 124.9 case per 100,000 population in 2000 to 173.4 cases per 100,000 of population in 2016. Among health care professionals the mortality increased from 143.4 in 2000 to 172.8 in 2016. The five-year survival rate in cancer patients declined from 50.3% in 2000 to 44.1% in 2016, and among health care professionals from 51.6% in 2000 to 45.6% in 2016. The scientific forecast shows that by 2020 the incidence of cancer among health care professionals will increase to 368.1 and the fiveyears survival rate will be 44.1%.

**Conclusions.** The early oncological withdrawal rate among health care professionals in the Republic of Moldova was 9.3% in 2000 and increased to 15.2% in 2016, with the fourth clinical group declining from 28.7% in 2000 to 22.7% in 2016. The proportion of malignant tumors is higher among rural health care workers (55.4%) in comparison with urban ones (44.6%). The most affected is the age group 60-69 year, with 36.2% of cases. The screening for worksite related risk factors among health professionals should be strengthen.

**Key words:** oncological morbidity, oncological mortality, health care professionals

#### **146. FEASIBILITY OF 3D LAPAROSCOPY FOR SURGICAL TREATMENT OF PELVIC UROLOGIC MALIGNANCIES**

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**Introduction.** Radical cystectomy and radical prostatectomy are challenging and demanding procedures with a great impact on the patients. In order to reduce the repercussions on quality of life, and to facilitate the social reintegration, for these complex surgeries the laparoscopic approach could be the solution.

**Aim of the study.** To evaluate the feasibility of 3D laparoscopy as an approach for the surgical treatment of pelvic urologic malignancies: prostate cancer (intermediate and high risk patients) and muscle invasive bladder cancer

**Materials and methods.** Between June 2017 and March 2018 we performed 16 laparoscopic 3D radical prostatectomies for intermediate and high risk prostate cancer (11 extraperitoneal and 5 transperitoneal). The median (range) patient age was 66 years; body mass index 32 kg/m<sup>2</sup> ; PSA level >10 ng/mL and biopsy Gleason  $\geq$ 7. All patients had a pelvic lymphadenectomy, which was performed using an extended template. A partial nerve-sparing technique was used in all the patients. In the same period, 4 men and 2 women with bladder cancer underwent laparoscopic radical cystectomy with direct cutaneous ureterostomy. For performing this procedure we used a 5-port technique, a 3D laparoscopic video system and for haemostasis 5mm bipolar vessel sealing device and polymer clips (5 and 10mm) for larger vessels.

**Results.** Laparoscopic radical prostatectomy: the mean operating time 155 (110-270 min) blood loss 340 (100-950) mL; postoperative hospitalization 6. (4-9) nights; catheterization time 21 days; lymph node (LN) count 12. According to the pathology report most of the cases were pT2c 50%, pT3b 33% and pT3a 17% and a prostate cancer Gleason 7: 54%, Gleason 9:33%, Gleason 8:13% pT3b. Positive surgical margin (PSM) rate 25%. In the extraperitoneal group the hospitalization was shorter due to earlier bowel recovery and drain removal. Laparoscopic radical cystectomy: The mean time to perform the laparoscopic radical cystectomy, including the lymph node dissection, was 265 minutes (range 240–300). Mean estimated blood loss was 300 ml (range 100–600ml). Mean hospital stay was 7 days (range 5–9). In female patients the specimen was extracted by vaginal route using an endobag. All cases were pT3bN0Mx with negative surgical margins and a mean number of 14 lymph nodes. In 2 cases a synchronous prostate cancer was diagnosed after the pathology report (PSA<4ng/ml). No cases required conversion to open surgery and no major complication are noted during or after surgery.

**Conclusions.** 3D laparoscopy in feasible for surgical treatment of pelvic urologic malignancies.

**Key words:** 3D laparoscopy, treatment, cystectomy, prostatectomy

## 147. CLINICAL PRESENTATIONS OF COLORECTAL CANCER

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**Introduction.** Colorectal cancer is the third leading cause of cancer death for men and women combined. Its incidence and mortality are higher in individuals older than 50 years. Early detection is lifesaving.

**Aim of the study.** Although effective, the colorectal cancer screening is not yet widely practiced. A careful history and physical examination are still the usual methods for suspecting colorectal cancer and ordering appropriate investigation. Therefore, we studied the symptoms and clues to location of colorectal cancer.

**Materials and methods.** We reviewed both hospital and office records for 84 consecutive patients with colorectal cancer, first diagnosed after symptoms appeared, at one regional referral center from 2013-2015. We abstracted data on demographic characteristics, presence of symptoms and characteristics of the tumors.

**Results.** The most common symptoms in patients with colorectal cancer accompanied with bleeding were: rectal bleeding (58%), change in bowel habits (51%), the majority had anemia (57%) and occult bleeding (77%). In patients with intestinal obstruction due to cancer common symptoms were abdominal pain (100%), fecal mass and gas retention (89%), general weakness (95%). In case of peripheral inflammation - fever (77,8%) and weight loss (83,3%).

**Conclusions.** Until the early diagnosis of colorectal cancer becomes more common, we must continue to rely on clinical findings for cancer detection. Our results will remind physicians to keep colorectal cancer on the differential diagnosis list of "chronic" gastrointestinal symptoms.

**Key words:** colorectal cancer, symptoms

## DEPARTMENT OF NEUROSURGERY

### 148. THE LUMBAR INTERBODY FUSION USING CORTICAL BONE TRAJECTORY PEDICLE SCREWS: CLINICAL RESULTS OF THE LUMBAR DEGENERATIVE SPONDYLOSIS SURGICAL TREATMENT

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**Introduction.** The Midline lumbar interbody fusion (MIDLIF) uses the cortical bone trajectory (CBT) pedicle screws instead of the traditional pedicle screws. The CBT screw follows a medial to lateral path in the transverse plane and is tilted caudally in the sagittal plane. This technique is minimally invasive, reinforces the screw pullout strength and reduces the approach-related morbidity.

**Aim of the study.** To explore the outcomes of MIDLIF technique application.

**Materials and methods.** Between December 2015 and December 2017, 36 patients (14 men and 22 women) underwent MIDLIF for degenerative spondylosis of the lumbar spine. The procedure included bilateral total facetectomy, bilateral intervertebral cage insertion and CBT pedicle screw fixation of the spine. The instrumented levels included L3 to S1, the L4-L5 being the most frequently fused level. For S1 screws, we used the penetrating endplate technique. The mean follow-up of the patients was 6 months after surgery.

**Results.** We noticed considerable postoperative improvement in both back and leg pain. The most frequently encountered complication was the pedicle fracture at the screw insertion site (6 cases). The mean blood loss, operation time and postoperative morbidity were significantly lower than in the conventional PLIF. We observed considerable improvement in VAS, SF-12 and ODI scores comparing to traditional techniques.

**Conclusions.** The MIDLIF procedure is comparable to the more traditional PLIF in terms of successful fusion rates and clinical outcomes, but with the additional benefits of less muscle damage, less blood loss and earlier return to daily activities.

**Key words:** cortical bone trajectory, lumbar interbody fusion

## 149. NEURONAVIGATION IN SPINAL SURGERY

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**Introduction.** In an era of information, it is of major importance to a modern neurosurgeon to understand and master the interpretation of various imaging and radiology techniques, in such a way implementing the neuronavigation in neurosurgery.

**Aims of the study.** Reviewing the literature the main goal is: the study, the characteristic and the particularities of the use of neuronavigation in spinal neurosurgery and not only.

**Materials and methods.** review of specialized literature.

**Results.** Studies have confirmed that spinal neuronavigation has considerably diminished the number of cases with incorrect instrument use and placement, while noting the benefit of reducing the radiation exposure of the surgical team, patient, and shortening the operating act by eliminating the need for repeat fluoroscopy (x-ray). As a result, the morbidity, time and costs of the procedure are reduced.

**Conclusions.** The presence of neuronavigation in a neurosurgical intervention facilitates intraoperative orientation and provides more precision and lesser trauma. Thanks to the exact location of the bolts, the reduction of potential risks, the application of a lower radiation dose and a better pre- and intraoperative planning, are the main arguments for the systematic use of this innovation in neurosurgery.

**Key words:** neuroinvagination, spinal surgery.

## DEPARTMENT OF UROLOGY AND SURGICAL NEPHROLOGY

### 150. ACUTE PYELONEPHRITIS IN DIABETES MELLITUS

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**Introduction.** Diabetes mellitus(DM) is the most common chronic disease after cardiovascular and oncological diseases. The number of patients with DM increases annually. Because of homeostasis changes, diabetic patients have predisposition to infectious diseases, especially for urinary tract infections. Infections of urinary tract affect this group of patients 4 times more often than general population. There are some predisposing factors for apparition of urinary infections, such as high level of glucose in urine, which creates optimal conditions for colonization and reproduction of microorganisms, diabetic neuropathy, which affects the innervation of urinary tract and leads to vesicoureteral reflux and decreased activity of immune system.

**Aim of the study.** Determination of DM's importance and its evolution's duration in the pathogenesis of acute pyelonephritis. Research and visualization of clinical manifestations, evolution, diagnosis and treatment of acute pyelonephritis in patients with DM.

**Materials and methods.** For my research I've examined patients with acute pyelonephritis from the sections of Urology, Nephrology and Endocrinology from the Sf. Treimea Hospital. The research was based on the prospective and retrospective analysis of the investigation and treatment results of 60 cases of acute pyelonephritis, of which 43 patients with pyelonephritis developed after preexistent diabetes and 17 patients with acute pyelonephritis, but no diabetes. The examined patients were hospitalized in treatment facilities between 2015 and 2017.

**Results.** 86.04% (37 patients) of patients with acute pyelonephritis and DM were in advanced age, 51-60 years and over 60 years. The possibility of developing acute pyelonephritis in this category of patients was closely correlated with the duration and evolutionary form of DM. Patients with DM had poorly expressed clinical forms of acute pyelonephritis, 21 patients (48,8%) presented no fever, 10 (23.2%) had subfebrility, 37 (86.04%)- with moderate intensity pain in lumbar area. Blood analysis showed signs of immunosuppression with normal values of leukocytes at 25 patients (58.13%). The results of the paraclinical investigations revealed the presence of neuropathy in 26 patients (60.4%) with acute pyelonephritis and DM. Results of nephrography and scintigraphy - revealed the presence of nephropathy in 26 patients (60.4%) and proteinuria at 19(44.18%). At 30 patients (69.76%) infection has developed bilaterally.

**Conclusions.** The possibility of apparition of acute pyelonephritis increases with duration of DMs evolution. Patients with 5 years and more duration of DM had greater predisposition for pyelonephritis due to chronic changes in organism. Patients with DM had poorly expressed clinical manifestations of acute urinary tract infections. Patients with diabetes develop more often bilateral infectious process.

**Key words:** diabetes mellitus, acute pyelonephritis

## **151. THE EFFECTIVENESS OF THE GENERAL METAPHYLAXIS IN PATIENTS WITH UROLITHIASIS**

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**Introduction.** Urolithiasis is defined as the presence of stones in the urinary tract. The Global prevalence of the urolithiasis is about 10% of the general population. Its incidence is higher in

men aged between 20-55 years. In first 5 years after the stone event, the risk of recurrence ranges between 25 and 50%, that may lead to decreasing of renal function and increasing of morbidity.

**Aim of the study.** The objective of the research was to assess the effectiveness of general metaphylactic measurements in patients with the urinary stone disease.

**Materials and methods.** In this research retrospectively were included 60 patients with urolithiasis that were treated in Department of Urology between 2016 and 2018. The patients with urolithiasis were selected into two study groups. The first group (30 persons) received general metaphylactic treatment; the second group (30 persons) did not implement the metaphylactic recommendations and served as a control group. The general metaphylactic recommendations included: 1) increased hydration up to 2.5-3 L/24h with neutral pH liquids and achieving of diuresis about 2-2.5 L/24h, 2) a diet rich in vegetables and fibers, 3) normal consumption of calcium (Ca) 1-1.2 g/day, 4) decreased consumption of salt - up to 4-5g/day, 5) limited dietary protein intake – up to 0.8-1g/kg/day, 5) change of lifestyle to decrease risk factors (BMI < 25, moderate physical activity etc.). The received data was processed with EpiInfo™ statistical software. The P values <0,05 were considered statistically significant.

**Results.** According to the obtained research data, in the first group the recurrence of urolithiasis happened in 8 (26.7%) patients; in the control group the recurrence rate was 46.7% (14 patients). The metaphylactic measures decreased the rate of recurrence with 20% (absolute risk reduction). The relative risk reduction was 0.429. The Relative Risk of stone recurrence in first group was 0.571, with a 95% Confidence Interval of 0.282-1.158 (p=0,17).

**Conclusions.** According to the research results, the general metaphylactic measures reduce the risk of stone recurrence twice. The results of the treatment of urolithiasis are determined not only by the stone removal but also using general metaphylaxis for certain patients.

**Key words:** general metaphylactic measures, effectiveness, urolithiasis

## 152. CONTEMPORARY MANAGEMENT IN PATIENTS WITH CHRONIC CALCULOUS PYELONEPHRITIS

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**Introduction.** Urolithiasis takes an important place in the structure of urological pathology, thanks to its high incidence, its recurrence frequency and the complications it might cause. There are many scientific publications dedicated to the study of urinary infection as an etiological factor of urolithiasis. Chronic pyelonephritis has the important etiologic and pathogenic role in the development of urolithiasis, but stone formation as a complication is possible in chronic inflammation of the upper and lower urinary tract. In some cases, urinary infection precedes the development of urolithiasis and may serve as a trigger for kidney stones formation. In other cases, it associated with urolithiasis, arising from other infectious causes. The association of metabolic factors and the infection usually forms chemically mixed renal stones containing phosphates, which in most cases are recurrent. In general, urinary tract infection is detected in 80% of cases of urolithiasis.

**Aim of the study.** To improve the results of postoperative treatment of patients with chronic calculous pyelonephritis (CCP).

**Materials and methods.** The study was performed on a group of patients with renal lithiasis treated in the Surgical Urology and Nephrology Clinic of the USMF "N. Testemitsanu", Republican Clinical Hospital between 2016 and 2017. In the study group were included 120 patients (men - 58, women - 62) aged between 23 and 70 years.



**Results.** According to the results obtained from the research group, the stones' solving methods were distributed in the following way: 55 patients (45.8%) - retrograde ureteroscopy, in 32 (26.7%) cases - pyelolithotomy; 19 (15.8%) cases - nephrolithotomy, in 8 (6.7%) patients received extracorporeal lithotripsy; and 6 patients (5.0%) - lithokinetic therapy with drug administration.

**Conclusions.** Based on this study results we consider that the implementation and application of the proposed treatment method in the CCP improves the activation of cellular immunity and the restoration of humoral immunity, the rheological properties of the blood and as a result, improves the blood circulation in the affected kidney. In this context, the obtained results confirm the priority of combined therapy in CCP with phytotherapy and spasmolytic therapy compared to traditional therapy. It is important to underline that antibacterial therapy is mandatory and is administered in accordance with the antibiotic susceptibility testing.

**Key words:** chronic calculous pyelonephritis, urolithiasis

### **153. THE ROLE OF THE LITHOKINETIC THERAPY IN THE TREATMENT OF DISTAL URETERAL STONES**

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**Introduction.** The problem of urethral stones nowadays is quite actual. The treatment is long and complex. There are a lot of methods of treating urethral stones, one of them being the drug therapy for the expulsion of urethral stones. There are many scientific researches about the effectiveness of  $\alpha$ -blockers in medical expulsion therapy of distal urethral stones, but the results of the studies are contradictory. In this research, scientific publications about medical expulsion therapy for the distal urethral stones will be examined to establish conclusions about the effectiveness of the treatment with the  $\alpha$ -blockers.

**Aim of the study.** To establish the efficacy of  $\alpha$ -blockers in medical expulsion therapy for distal urethral stones.

**Materials and methods.** The PubMed (MEDLINE) database was used for the scientific research, where medical articles about the topic "Medical expulsion therapy" published in the last 5 years were searched and accessed. We found 213 publications, out of which 163 were excluded due to the non-coincidence with the required topic and only 50 were included in the research. Out of these 50 publications included in the study, 34 publications were full text and 16 were abstract publications.

**Results.** Based on the research carried out, from the publications included in the research - 39 (78%) publications were for the application of the  $\alpha$ -blockers in treatment therapy. Most of them were blinded or double-blinded, randomized controlled multicenter trials, which confirmed the decrease of the colic attacks, of the pain severity, analgesics administration, time till stone elimination and the increase of stone expulsion probability in groups that used  $\alpha$ -blockers. Six (12%) publications were against the application of  $\alpha$ -blockers (with conclusions about the absence of difference between standard and with the administration the  $\alpha$ -blockers groups), 5 (10%) publications suggested that further complementary studies for the  $\alpha$ -blockers effectiveness in medical expulsion therapy for urethral stones are to be performed.

**Conclusions.** Following the research results we can confirm the efficacy of medical expulsion therapy for urethral stones with the application of  $\alpha$ -blockers. It is necessary to introduce this group of medicines into the initial medical expulsion therapy for treatment of distal urethral stones.

**Key words:**  $\alpha$ -blockers, medical expulsion therapy, urolithiasis, ureteric stones

## 154. CHEMICAL COMPOSITION OF THE RENAL CALCULI

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**Introduction.** Nephrolithiasis is a multifactorial pathology that ranks first among the urinary tract pathologies. The increased incidence of the urolithiasis is determined by multiple factors such as lifestyle, diet, migration of population from cooler rural areas to warmer urban areas. The method of surgical treatment of urolithiasis, previously applied, can also influence the risk of this disease, moreover the patients with reserved fragments of calculi in the kidneys have a higher risk of recurrence. Although the incidence of the pathology is very high, some patients can produce only a single stone in their lifetime. It's an important thing to know the regional peculiarities of the chemical composition of kidney stones to select the correct therapeutic strategy. The impact of the disease can be reduced by administering prophylactic treatment to patients with recurrent urolithiasis. Meanwhile in Republic of Moldova, there is no information about the peculiarities of the chemical composition of urinary calculi.

**Aim of the study.** The research of the chemical composition of calculi at the patients with recurrent urolithiasis in the Republic of Moldova.

**Materials and methods.** In this prevalence descriptive study 180 kidney calculi were analyzed by using the chemical modified method according to Hodgkinson and infrared Spectroscopy with Fourier transformant.

**Results.** Phosphate stones (calculi) have been identified in 37(20.55%) cases (calcium phosphate - 17(9.44%), struvites - 18(10%), brushitis - 2(1.11%) cases). Calcium oxalate calculi were found in 68(37.78%) cases; (whewellites - 44(24.44%); weddelites - 24(13.33%) were determined, being followed in frequency of uric acid - 48(26.67%). In 27(15%) cases calculi of mixed composition (whewellites+apatite carbonate - 8(4.44%), whitlockites+protein - 8(4.44%), whitlockites+weddelites - 4(2.22%) whewellites+uric acid - 7(3.9%) patients) were detected. Other calculi types were rarely found (2,8%).

**Conclusions.** Kidney calculi of calcium oxalate, uric acid and calcium oxalate and uric acid mixed calculi are the most frequently found in Moldova. The relative high incidence of infected calculi (30.8%) justifies the necessity of appropriate antibacterial therapy in the pre- and postoperative period. Correction of the lifestyle and the instruction of the patients using this information can substantially improve the results of the measures for primary prophylaxis and prevent the recurrence of urolithiasis. The obtained information about chemical composition of kidney stones, with the identification of specific risk factors for Moldova would be helpful for the healthcare professionals to plan preventive measures for reduce the high incidence of this disease.

**Key words:** chemical composition, recurrent urolithiasis, infrared Spectroscopy

## 155. CONTEMPORARY DIAGNOSTIC METHODS OF NEPHROLITHIASIS

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**Introduction.** Nephrolithiasis is ranked third in the urological diseases, since 2005 it has occupied the first place. A wide range of diagnostic methods available for renal lithiasis

evaluation create a well-founded basis for a positive and differential diagnosis of different forms of renal lithiasis. At the same time, the optimal application of the existing imaging arsenal, particularly under the conditions of achieving the maximum cost-benefit ratio, requires to specify the indications for the application of different diagnostic methods. Of particular importance is the determination of the factors causing diagnostic errors as well as the influence of the results of the imaging study on the selection of the concrete treatment method.

**Aim of the study.** To study the contemporary methods of diagnosis of patients with reno-ureteral calculi, their sensitivity, their indications and contraindications.

**Materials and methods.** The study was conducted in the Department of Urology and Surgical Nephrology, *Nicolae Testemitanu* State University of Medicine and Pharmacy, the Republican Clinical Hospital, on a group of 1719 patients with various forms of renal-ureteral lithiasis during 2016-2017.

**Results.** The results obtained show that KUB X-ray was performed in 1700 (98.89%) cases, intravenous urography - 1650 (95.98%), ultrasonography - 1719 (100%), computed tomography - 140 (8.14%) retrograde pyelography - 28 (1.62%), renography - 42 (2.44%), scintigraphy - 24 (1.39%). Unilateral calculi were found in 1420 (82.6%), out of which: in 673 patients (47.3%) they were located on the right side, while in 747 patients (52.7%) they were on the left side. Of 1719 patients enrolled in the study, 787 (45.78%) were males and 932 (54.22%) women. The study group included 367 (21.3%) patients aged 21-39 years, 1002 (58.3%) patients aged 40-59 years and 350 patients (20.4%) over 60 years.

**Conclusions.** The frequency of the disease, the clinical particularities, the possibility of complications, the difficulties that arise in the process of diagnosis and treatment emphasize the need to continuously study the problems related to urolithiasis. Also, imaging methods allow the visualization of calculi and nephrolithiasis complications. This contributes to the improvement of the practical implementation of the conduct algorithm in each individual case, effectively ensuring the medical act customization. The efficacy of each diagnostic method can be evaluated in terms of unanimously accepted sensitivity and specificity, being associated with concrete imaging signs specifically selected for the evaluation of renal lithiasis.

**Key words:** nephrolithiasis, contemporary diagnostic methods, ultrasonography

## 156. THE ROLE OF TAMSULOSIN ADMINISTRATION IN EVOLUTION OF STONE CLEARANCE AFTER SHOCK WAVE LITHOTRIPSY FOR URETERAL STONES

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**Introduction.** Management of symptomatic ureteric stones still represents the most common condition in urological practice. ESWL, a noninvasive technology, has become one of the main active interventions for ureteral stones; its success depends on stone size and location, and the type of lithotripter. Expulsion therapy of the stone requires ureteric peristalsis, tamsulosin must be the first as an adjunctive medical therapy after ESWL, is more effective for the treatment of patients with ureteral stones.

**Aim of the study.** To determine whether the administration of tamsulosin, as a medical therapy, increases the stone clearance after extracorporeal shock wave lithotripsy (ESWL).

**Materials and methods.** A total of 250 patients underwent a single ESWL session to treat ureteral stone up to 15 mm in diameter. After ESWL patients were randomized in two groups. Group A (control) – 125 patients were administered non-steroidal anti-inflammatory drugs. In group B, 125 patients additionally were prescribed tamsulosin 400 mg daily. Follow-up visits

were performed once per week for 4 weeks after ESWL. Evaluation included a KUB plain film and an ultrasound examination. Efficacy was evaluated in terms of success rate, stone-free rate, expulsion time of the fragments and use of tamsulosin.

**Results.** The success rate was for the control group was 65 % and the tamsulosin group was 80 %, respectively. The mean expulsion time of the fragments was 10.2 days for group A and 8 days for group B. The stone-free rate in group A was 67 % and in group B – 87%.

**Conclusions.** The results of our study have demonstrated that tamsulosin therapy, as an adjuvant medical therapy after ESWL, is more effective for the treatment of patients with ureteral stone up to 15 mm.

**Key words:** lithiasis, shock wave lithotripsy, tamsulosin, ureteral stones

## 157. URETHRAL OBLITERATIONS: DIAGNOSIS AND TREATMENT

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**Introduction.** Urethral obliteration is a progressive narrowing of the urethral lumen, being a typical urology disorder manifested by symptoms of strangulation and dizziness and always has a spreading tendency. The priority option in the treatment of urethral obliterations is optical internal urethrotomy (UIO) with a 85% success rate, but the rate of postoperative recurrences is 15%.

**Aim of the study.** The comparative determination of the results of surgical interventions (urethral plastic and endoscopic urethrotomy), determination of the role of open therapy in urethral obliterations and identification of different ways and possibilities of using endoscopic methods integration in the respective urethral obliteration treatment stages.

**Materials and methods.** In order to fulfill these tasks and achieve the aforementioned aim an analysis of the results of conservative and surgical treatment in 110 patients with urethral obliterations in the "Urology and Surgical Nephrology" clinic during the period 2015-2017 was made. The first batch includes 70 patients with urethral obliteration of posttraumatic etiology. The second group included 40 patients with urethral obliteration of post-inflammatory etiology.

**Results.** Urethral obliteration is diagnosed by cystoscopic examination, retrograde urethrography, urinalysis, uroflowmetry, urine culture, contrast cistourethrography. As a result of urethral obliterations treatment through UIO (optical internal urethrotomy), the urethra permeability was restored in the shortest possible time, the duration of the hospitalization was shortened (7 days vs 17 days after Holtov Marion and 25 days after Solovov-Badenoc), having a great acceptance from the patients.

**Conclusions.** It has been shown that the intervention of choice in the treatment of urethral obliterations is endoscopic. The results of surgical and conservative treatment performed in patients with urethral obliterations have determined the role and dependence of its efficacy, significantly increasing its therapeutic value.

**Key words:** urethral obliteration, diagnosis, treatment

## 158. TRANSURETHRAL EN BLOC RESECTION OF URINARY BLADDER TUMORS VS CONVENTIONAL TRANSURETHRAL RESECTION OF BLADDER TUMORS. EARLY POSTOPERATIVE OUTCOMES

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**Introduction.** Treatment of urinary bladder tumors (UBT) remains an important problem in oncology. Currently, transurethral resection of urinary bladder (TUR-V) remains the gold standard in the endourologic treatment of UBT. In the last decade many alternative endourologic techniques have been proposed for the treatment of UBT.

**Aim of the study.** Comparative assessment of the efficacy of transurethral En Bloc resection of urinary bladder tumors.

**Materials and methods.** In the period between 08.2017 – 12.2017, 25 patients with average age of 57 years underwent endourological treatment of UBT at the Department of Urology and Surgical Nephrology, *Nicolae Testemitanu* State University of Medicine and Pharmacy. Patients were divided into two treatment groups: first group - transurethral En Bloc resection of UBT (8 patients), second group – TUR-V of UBT (17 patients). All patients were evaluated after 3 months by cystoscopy with narrow band imaging (NBI).

**Results.** Average duration of intervention: 39 min vs 33 min. The rate of transitional haematuria and postoperative infections was similar. During NBI cystoscopy tumor recurrence was determined in 3 cases in TUR-V group, and no recurrences in En Bloc resection group. In the En Bloc resection group additional tumors with different localization were found during NBI cystoscopy.

**Conclusions.** Transurethral En Bloc resection of UBT is an effective method in the treatment of UBT. Results of treatment using En Bloc resection are better than conventional TUR-V of bladder tumor. Another advantage of transurethral En Bloc resection of UBT is a better staging of tumor process due to the resection of all urinary bladder wall layers which is very important to determine postoperative tactics.

**Key words:** en-bloc resection, urinary bladder tumors

## **159. TRANSURETHRAL THULIUM LASER RESECTION OF PROSTATE VS MONOPOLAR TRANSURETHRAL RESECTION – EVALUATION OF POSTOPERATIVE OUTCOMES**

Authors: **Alexei Plesacov, Ivan Vladanov, Andrei Josan**

Scientific adviser: Vitalii Ghicavii, MD, PhD, Associate Professor, Department of Urology and Surgical Nephrology

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**Introduction.** Treatment of benign prostatic hyperplasia (BPH) remains one of the actual problems in endourology. Currently, monopolar TUR-P remains the gold standard in the surgical treatment of BPH. Nowadays laser technologies offer safe and efficient alternatives in BPH endourologic treatment.

**Aim of the study.** Comparative assessment of the efficacy of transurethral Thulium laser resection of prostate.

**Materials and methods.** In the period of 08.2017 – 02.2018, 52 patients with average age of 62 years underwent endourologic treatment of BPH at the Department of Urology and Surgical Nephrology, *Nicolae Testemitanu* State University of Medicine and Pharmacy. Patients were divided into two treatment groups: transurethral Thulium resection of prostate (24 patients) and monopolar TUR-P (28 patients), and evaluated postoperatively after 1 month. Preoperative patients were investigated: PSA, IPSS, QoL, TRUS-P with PVR and Qmax. Patients inclusion criteria: prostate volume 40 - 70cm<sup>3</sup>, IPSS ≥16 and PVR ≥ 50ml, PSA ≤4ng / ml, QoL > 4, Qmax <8ml/s.

**Results.** Average duration of intervention: 63 min vs 47 min. The prostate volume decreased postoperatively on average from 58.4 cm<sup>3</sup> to 26.1 cm<sup>3</sup>, vs 61.1 cm<sup>3</sup> to 24.6 cm<sup>3</sup>, there was an

increase of average Qmax from 7.3 to 20.7 ml/s vs 7,5 to 21.2 ml/s, a decrease in mean IPSS from 20.3 to 4.3 vs 21 to 4.5, and a PVR decrease from 65.2 ml to 15.5 ml vs 68.6 to 16.8 ml, respectively. The period of transitional macrohaematuria was 1.2 days vs 2.3 days respectively. The duration of catheterization was 1.5 days in the first group and 2.6 days in the second group. The complication rate was similar.

**Conclusions.** Transurethral Thulium laser resection of prostate is an effective alternative method in the treatment of BPH. Immediate postoperative results of Thulium laser prostate resection are similar to the results of the “gold standard” – monopolar TUR-P group. The high safety profile characteristic for Thulium laser resection of prostate is also to be mentioned.

**Key words:** laser, resection, prostate.

## 160. THE VALUE OF COMPUTED TOMOGRAPHY FOR THE DETECTION OF CROSSING VESSELS IN PATIENTS WITH URETEROPELVIC JUNCTION OBSTRUCTION

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**Introduction.** Ureteropelvic junction obstruction (UPJO) is defined as a blockage or obstruction of urine flow from the kidney into the proximal upper ureter that can lead to an increase in backpressure on the kidney, hydronephrosis, and progressive damage of the kidney function. The incidence of crossing vessels in patients with UPJO varies in the literature from 11% to 87%. Knowing about this anatomical situation preoperatively is important in the choice of therapeutic strategy and surgical technique. Preoperative diagnosis of the crossing vessels could determine the option for endoscopy, laparoscopy, or open surgery so as to have better control of the abnormal vessel.

**Aim of the study.** The goal of this study was to assess the use of Computed Tomography (CT) for the detection of crossing vessels in patients with UPJO.

**Materials and methods.** We analyzed prospectively 35 patients with UPJO diagnosed by CT, and treated by Hynes-Anderson pyeloplasty or nephrectomy in the Department of Urology, Dialysis and Renal Transplantation of the Republican Clinical Hospital between 2010 and 2014. Contrast-enhanced CT was performed by using arterial, venous, and excretory phases. The results obtained by imaging examination were compared with intraoperative aspects.

**Results.** From 35 patients, crossing vessels were identified in 15 (42.85%) cases. There were 10 males and 5 females with mean age 36.86 years (range 23 – 62). II degree of hydronephrosis was identified in 4 (26.6%) patients, III degree in 10 (66,7%) patients and IV degree in 1 (6,7%) patient. After comparing the intraoperative and imaging results, we obtained that contrast-enhanced CT has proven to be 100% sensitive for detecting crossing vessels. By using CT, we were able to identify the position, type and number of vessels.

**Conclusions.** CT is a valuable and accurate single-imaging method for preoperative diagnosis of crossing vessels associated with UPJO. It has the advantage of providing images that are easily understood and shows additional findings.

**Key words:** ureteropelvic junction obstruction, crossing vessels, computed tomography

## 161. ACTUALITIES IN UROLITHIASIS. THE RELEVANCE OF RANDALL'S PLAQUES

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**Introduction.** Renal calculi have been plaguing humanity since the advent of civilization. The majority of kidney stones consist of calcium oxalate, followed by calcium phosphate, uric acid, cysteine, and struvite stones. Many factors influence the development of a stone including diet, genetics, environment, and comorbid conditions.

**Aim of the study.** To describe a hypothesis for the initial events leading to urinary stones. A biomechanical perspective on Randall's plaque formation through form and function relationships is applied to functional units within the kidney, we have termed the 'medullo-papillary complex' - a dynamic relationship between intratubular and interstitial mineral aggregates.

**Materials and methods.** A complete research was performed to examine the existing literature on the anatomical and physiological relationships in the renal medulla and papilla. Sectioned human renal medulla with papilla from radical nephrectomy specimens were imaged using a high resolution micro X-ray computed tomography. The location, distribution, and density of mineral aggregates within the medullo-papillary complex were identified.

**Results.** Mineral aggregates were seen proximally in all specimens within the outer medulla of the medullary complex and were intratubular. Distal interstitial mineralization at the papillary tip corresponding to Randall's plaque was not seen until a threshold of proximal mineralization was observed. Mineral density measurements suggest varied chemical compositions between the proximal intratubular ( $330 \text{ mg/cm}^3$ ) and distal interstitial ( $270 \text{ mg/cm}^3$ ) deposits. A review of the literature revealed distinct anatomical compartments and gradients across the medullo-papillary complex that supports the empirical observations that proximal mineralization triggers distal Randall's plaque formation.

**Conclusions.** Randall's plaques may not be the entire explanation for lithogenic phenomena, they do play an important role in a subset of patients with calcium oxalate stones, whose incidence has been increasing in recent decades. The early stone event is initiated by intratubular mineralization of the renal medullary tissue leading to the interstitial mineralization that is observed as Randall's plaque. We base this novel hypothesis on a multiscale biomechanics perspective involving form and function relationships, and empirical observations. Additional studies are needed to validate this hypothesis.

**Key words:** calcification; kidney; physiological; urinary tract physiology; urolithiasis

## 162. ACUTE RENAL INJURY INDUCED BY SEPTIC PROCESSES

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**Introduction.** AKI is a common complication of sepsis and carries an ominous prognosis. Mortality was reported higher in patients with septic AKI (74.5%) than in those whose renal failure did not result from sepsis (45.2%). AKI risk factors include age, severity of the disease, the presence of other chronic pathologies.

**Aim of the study.** Analysis of cases of acute kidney damage caused by septic processes during 2016 in the following sections: septic surgery, general surgery, general therapy, urology, haemodialysis of the Republican Clinical Hospital.

**Materials and methods.** 147 patients were included in the study, fulfilling the following inclusion criteria: indicators of the presence of septic and AKI processes.

**Results.** The study group included 81 (55.1%) men, and 66 (44.9%) women, their average age being  $60.1 \pm 13.2$  years. The average values of AKI indicators were the following: urea -  $23.5 \pm 12.5$  mmol/l, creatinine -  $343.9 \pm 371.2$  mmol/l. Deregulation of diuresis: anuria - 10.8%, oliguria - 6.1%, polyuria - 14.2%, lack of data or norm - 68.7%. In 24.48% of deceased patients during the morphopathological examination acute renal tubular necrosis was found, although some of them had creatinine volumes ranging from 86-147 mmol/l, these still being increased compared to the previous values. Localization of the primary septic outbreak was the following: 38.77% of the gastrointestinal system (pancreonerosis, thin and thick intestine necrosis, intraabdominal abscesses, purulent angiocolitis, cholecystitis, liver abscesses, massive liver necrosis, suppressed hydatid cyst, acute gangrenous appendicitis), urogenital system - 31.97% (pioneer, acute pyelonephritis, renal abscesses, acute purulent nephritis, cystitis, urethritis, prostatitis), skin and soft tissue damage - 12.24% (phlegm, abscess), respiratory system - 7.4% (bronchopneumonia), osteoarticular system - 6.8% (gangrene with bone and soft tissue damage, purulent coxarthrosis, osteomyelitis), cardiovascular system - 2.72% (pericarditis, endocarditis), septic pneumonia - 54.42% of the studied group. The respiratory system was affected as a secondary stage in sepsis. CID syndrome was present in 23.8% of the studied group, development and severity of CID correlating with mortality rates and MODS development in sepsis. Methods of treatment (detoxification): plasmapheresis - 11.56%, haemodialysis - 14.28%, haemofiltration - 3.4%, conservative treatment - 70.74%. Lethality rates were of 46%.

**Conclusions.** Despite progress in pathophysiology, diagnostic procedures, and appropriate therapeutic interventions, sepsis-induced AKI still registers high mortality rates, the lethality being 46% of the patients included in the study. Creatinine is not capable of detecting precocious AKI induced by sepsis. A major obstacle for the effective treatment of sepsis-induced AKI is lack of early and effective diagnostic tools.

**Key words:** acute kidney injury, sepsis, lethality

### **163. THE ROLE OF ULTRASONOGRAPHY-GUIDED BIOPSY IN THE DIAGNOSIS OF PROSTATE CANCER**

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**Introduction.** Currently, the appropriate number of fragments obtained during a prostate biopsy in order to detect early histological changes in the prostate tissue is constantly debated.

**Aim of the study.** To reveal the correlation between the PSA value and the number of biopsies required to be performed for the detection of prostate cancer.

**Materials and methods.** The study was conducted on the basis of 52 ultrasonography-guided prostate biopsies performed between May 2016 - March 2017. The case-control, retrospective study involved evaluating the results of the 52 biopsies, of which 13: 6-core and 39: 12-core. The Transrectal Ultrasound-guided Prostate Biopsy (TRUS) was performed according to the National Clinic Protocol with the main indication being the level of PSA higher than 4 ng/ml and taking into consideration the contraindications and possible complications that may occur. For statistical data processing SPSS program was used, applying descriptive and comparative statistical analysis.

**Results.** Patients that underwent the biopsy aged between 52 and 88 years, and PSA varied between 2.81 and 177.00 ng/ml with an average of 89.90 ng/ml. In 22 patients (42.30%) of the group of subjects who underwent the biopsy, the morphological clinical picture of adenocarcinoma was found, and in 30 patients (57.69%) – benign prostatic hyperplasia. In none of the patients any major complications have occurred. In patients with 6-core biopsy were



detected 8 Benign Prostatic Hyperplasia (BPH) with the average PSA value – 34.98 ng/ml, the minimum being 7.74 ng/ml and maximum – 10.0ng/ml. Those with 6-core biopsy and adenocarcinoma (5) had an average PSA of 69.04 ng/ml, the minimum being 14.0 ng/ml and maximum – 177.0 ng/ml. In patients with 12-core biopsy were detected 22 BPH with the average PSA value of 14.19 ng/ml, the minimum being 2.81 ng/ml and maximum – 44.0 ng/ml. Those with 12-core biopsy and adenocarcinoma (17) had an average PSA of 46.0 ng/ml, the minimum being 9.59 ng/ml and maximum – 140.0ng/ml. Thus, there is a direct interrelation between the increase of PSA levels in serum and the detection of adenocarcinoma. Even though, this marker is not totally effective in detecting the PC, which implies the need to use ultrasound-guided biopsy, it has a direct influence on electing the number of the samples essential for the detection of the PC.

**Conclusions.** Although the main method of diagnosis is considered to be 12-core biopsy, it loses its purpose in cases with PSA higher than 44 ng/ml when the 6-core biopsy has the same revelatory properties and is less invasive.

**Key words:** prostate cancer, ultrasonography-guided biopsy, PSA

## 164. PERCUTANEOUS NEPHROLITHOTOMY IN THE TREATMENT OF LITHIASIS

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**Introduction.** Urolithiasis is described by the presence of stones in uropoetic system and is a major health problem. In Moldova urolithiasis prevails in about 10% of the total population. Contemporary therapy consists of the non-invasive methods (extracorporeal shock wave lithotripsy - ESWL), minimal invasive methods, endoscopic (NLP) and open surgery. Percutaneous nephrolithotomy has been proven to be the most rational treatment method (NLP).

**Aim of the study.** The research of strategies in the treatment of urolithiasis, with a detailed study of NLP.

**Materials and methods.** This paper was created at the Department of Urology and Surgical Nephrology in accordance with the provisions of the National Clinical Protocol "Urolithiasis of adult", as well as guidelines of American Urological Association (AUA) and European Association of Urology (EAU). 116 bibliographic sources were studied.

**Results.** During the research we found that: the effectiveness of NLP does not depend on the number of nephrostomy tracts, NLP being the most efficient method in the treatment of: kidney lithiasis with the horseshoe form, polycystosis with renal lithiasis, coraliform lithiasis, single kidney lithiasis, coraliform lithiasis on the unique kidney, transplanted kidney lithiasis, lithiasis in patients with diabetes, elderly patients, patients with spine deformities. Positioning the patient on the abdomen offers the most access for the procedure. The success rate of NLP is independent of the patient's body weight, NLP provides better results than using classical surgical operations. The percentage of relapse after NLP is about 1.24%, with a follow-up average of 1 year. The probability of recurrence of coraliform stones in the first year is 10%, and in 5 years - 50%. Effectiveness of NLP treatment using NLP, complete elimination of stones in one stage is possible up to 70-75%, and after secondary nephroscopy or in combination with ESWL, up to 95-99%, with minimal trauma to classical surgery.

**Conclusions.** AUA and EAU recommend 3 methods of treatment of lithiasis: NLP, ESWL and surgery. NLP method has the minimal duration of hospitalization, morbidity, trauma and complications. It is extensively used and has the lowest incidence of complications. Preoperative

urological investigations, patient selection, correct application of the method, are key success factors.

**Key words:** lithiasis, percutaneous nephrolithotomy, urolithiasis

## **165. DISORDERS IN THE NUTRITIONAL STATUS OF PATIENTS WITH CHRONIC KIDNEY DISEASE WHO ARE ON DIALYSIS PROGRAM**

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**Introduction.** Today, studying the nutritional status in patients with end-stage chronic kidney disease gets a lot of attention. The optimal nutritional status makes it possible to provide a sufficient medical rehabilitation and survival of the patients. The development of protein-energy malnutrition in these patients worsens the prognosis of the disease course and affects the mortality rate significantly.

**Aim of the study.** To study features of the nutritional status in patients with chronic kidney disease who are being on dialysis treatment program.

**Materials and methods.** There were 32 patients with stage V chronic kidney disease under supervision, who are on haemodialysis treatment program in the department of chronic haemodialysis of RCI "Chernivtsi regional clinical hospital." The control group consisted of 20 healthy individuals. Patients in all groups were divided according to their age and sex. The duration of the treatment with a substitution therapy was  $2,5 \pm 1,2$  years. The average age of patients was  $42,1 \pm 3,4$  years (from 37 to 49 years). The nutritional status assessment was conducted in accordance with the protocol for diagnosis and correction of malnutrition in patients with stage V D CKD. The assessment of the residual renal function was carried out by the glomerular filtration rate. All the patients were measured their body mass index, a standard body weight percentage, and that of a normal body weight. All the patients had their total cholesterol, TG, HDL cholesterol, LDL cholesterol and albumins checked.

**Results.** Analysis of clinical and laboratory parameters in the examined patients showed some disorders in the nutritional status in 31% of patients, while 4% of patients had a pronounced change in their nutritional status. Disorders in lipid metabolism and serum albumin were observed in almost all the patients compared to practically healthy individuals ( $p < 0.05$ ).

**Conclusions.** It has been found that the change in the nutritional status of the patients with stage D V chronic kidney disease was observed in about a third of them. Disorders in the nutritional status affect the level of medical rehabilitation and the course of the disease.

**Key words:** nutritional status, end-stage chronic kidney disease, malnutrition

## **166. COMPUTERIZED TOMOGRAPHY IN THE DIAGNOSIS OF LUMBAR INCISIONAL HERNIA**

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**Introduction.** Incisional lumbar hernia is still a diagnosis problem of the first magnitude. The diagnosis of incisional hernias outside the midline remains a challenging procedure. Lumbar hernias occur in the region of the flank bounded by the 12th rib, the iliac crest, and the erector spinae and external oblique muscles. CT portrays shows the anatomic relationships in this region

so well and it may be the only radiographic procedure necessary to make the diagnosis of a lumbar incisional hernia.

**Aim of the study.** Objective evaluation of the alterations in body image and configuration of patients who underwent urological surgery via a flank incision.

**Materials and methods.** Eligible for study were 7 patients who underwent urological surgery via lumbar incision for renal diseases. Preoperative and postoperative abdominal computerized tomography were used for evaluation. We evaluated the objective results using computerized tomography.

**Results.** Over a 12-month period, lumbar hernias were detected with CT in seven patients, all had flank incisions, six of them with detectable flank bulge and one without. In 3 patients diffuse and large hernias were found, in two patients superiorly located hernias, which are immediately palpable below the 12th rib and subsequently thought to originate from the superior lumbar triangle, and in two patients inferiorly located hernias palpable just above the iliac crest and subsequently thought to originate from the inferior lumbar triangle. The mean age was 58 years (range 30-76); five women and two men. Of these, two were asymptomatic and five were symptomatic. All seven lumbar hernias detected on CT were on the left side. Two of them contained extraperitoneal fat and five contained bowel (descending colon or sigmoid colon). Six of the postincisional hernias showed disruption of normal muscle layers. In one case only the external oblique muscles were intact. In a high postincisional hernia there was a disruption of the intercostal muscles.

**Conclusions.** CT can be helpful in the assessment of symptomatic patients after flank incision, to differentiate postincisional muscular weakness and intercostal neuralgia from a lumbar hernia and is able to delineate muscular and fascial layers, a defect in one or more of these layers, and the presence of herniated fat and/or viscera. Computerized tomography is the diagnostic method of choice and is recommended in all patients with a bulge after a flank incision.

**Key words:** lumbar incisional hernia, CT, muscle layers

## DEPARTMENT OF OTORHINOLARYNGOLOGY

### 167. SURGICAL TECHNIQUES OF COCHLEAR IMPLANTATION

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**Introduction.** The surgical operation of cochlear implantation is carried out in accordance with a well-determined algorithm, which remained unchanged over the course of 30 years. However, in recent years, many scientists and surgeons believe cochlear implantation surgery should be reviewed, as it requires additional studies.

**Aim of the study.** Analysis of surgical techniques used in cochlear implantation.

**Materials and methods.** The study group includes 14 patients diagnosed with deep congenital bilateral sensorineural hearing loss, operated at the Republican Clinical Hospital, from 2014 through 2017; quotient m:f-1.33:1, aged from one year and a half to 17. Paraclinic preoperative examination: 100% of patients underwent computerized tomography and magnetic resonance imaging, as a result of which one patient was diagnosed with bilateral cochlear hypoplasia (Mondini syndrome); the rest of the patients had no anatomical changes in the inner ear. Surgery for 100% of patients was performed through mastoidotomy and posterior tympanotomy approach. For 3 patients (21.42%), an electrode was introduced into the scale tympani of cochlea through the round window, i.e. through the natural orifice of the cochlea; while for 11 patients (78.58%), it was introduced through an opening new hole milling formed near the round window (through the cochleostomy). In 11 cases we used the cochlear implant of the Med-EL Company,

and in 3 cases the cochlear implant of the Cochlear Company. Average surgery duration was one hour and 47 minutes. Average duration of post-operative in-hospital stay was 9.23 days.

**Results.** Out of the total number of patients (n=14), no one suffered of intraoperative complications, and the rate of early and late postoperative complications amounted to 0%.

**Conclusions.** After analyzing surgical techniques used in the cochlear implantation, as well as the rate of early and late postoperative complications, it has been established that this surgical technique continues to be an effective one and does not cause occurrence of complications, despite the fact that it is a classical technique.

**Key words:** cochlear implant, sensorineural hearing loss.

## SURGERY SECTION II

### DEPARTMENT OF GENERAL SURGERY AND SEMIOLOGY no.3

#### 168. VASCULAR DISORDERS RELATED TO INJECTING DRUG USE

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**Introduction.** Intravenous illicit drug abuse is a significant problem in modern societies, with continuously increasing frequency and a subsequently increasing incidence of vascular complications.

**Aim of the study.** Was to review the potential vascular complications that could occur in patients using recreational drugs and to evaluate possible treatment regimes.

**Materials and methods.** We conducted a retrospective study that included 30 intravenous drug addicts, hospitalized during a seven years period with vascular complications at Department of general surgery, Municipal Clinical Hospital no.1 (Chisinau).

**Results.** Twenty-two (73.4%) patients were younger than 30 years. Twenty-eight (93.4%) cases were diagnosed based on clinical examination and duplex ultrasound, while another 2 (6.6%) – using CT-angiography. The following types of vascular complications were found: in 12 (40%) cases – deep venous thrombosis; in 7 (23.4%) cases – femoral artery pseudoaneurysm, in 5 (16.7%) – postthrombotic syndrome, in 5 (16.7%) – venous inguinal sinus track with hemorrhage, and in 1 (3.3%) case – infected aneurysm of popliteal artery. The treatment was conservative in 14 (46.7%) cases, but 16 (53.3%) patients required emergent surgical intervention for life-threatening conditions. Surgical procedures performed in analyzed group were the following: vascular reconstruction of femoral artery using an autogenous vein graft, triple ligation of femoral artery, closing the inguinal sinus track with definitive hemostasis, and primary above the knee amputation of lower extremity.

**Conclusions.** Prevention of life-threatening clinical conditions should be the primary goal of the surgical treatment of vascular complications in intravenous drug addicts. The infected arterial pseudoaneurysm with profuse external hemorrhage is the most dangerous vascular complication, the optimal management being arterial ligation. Revascularization of affected limb should be reserved only for patients who do not tolerate resulting ischemia

**Key words:** drug abuse, pseudoaneurysm, arterial ligation

#### 169. EVALUATION OF RISK FACTORS FOR TROPHIC ULCERS DEVELOPMENT IN PATIENTS WITH NEUROPATHIC DIABETIC FOOT

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**Introduction.** Neuropathy is the most common long-term complication of diabetes, which affects about 50% of patients. The distal symmetric neuropathy that appears in 75% cases of diabetic neuropathy is one of the main risk factors for developing diabetic foot ulcer. Besides this, there are other important risk factors that could influence the development and the evolution of tistular lesion in a diabetic foot.

**Aim of the study.** Determination of the risk factors and the severity degree of distal neuropathy in patients with diabetic foot ulcers.

**Materials and methods.** Twenty-three patients with neuropathic form of the diabetic foot that had trophic ulcer were included. A number of potential risk factors like the duration of diabetes mellitus, use of insulin therapy, degree of distal neuropathy, poor glycemic control confirmed by HbA1C level, presence of foot deformities, arterial hypertension, and BMI were evaluated. The degree of distal neuropathy was assessed by clinical neuropathy scores: Neuropathy Symptoms Score (NSS) and Neuropathy Disability Score (NDS).

**Results.** The duration of diabetes was more than 5 years in all patients, and 19 patients used insulin. In 94.1% cases NSS was 7-9 points and NDS was 8-10 points that denotes severe neuropathic symptoms. A total of 82.3% patients had poor glycemic control with a level of HbA1C > 8%. 70.5% of patients had foot deformities and in 76.4% cases arterial hypertension was recorded. 94.1% had a BMI > 25 kg/m<sup>2</sup>, 35.3% were overweight and 58.8% had obesity.

**Conclusion.** Development and progression of trophic ulcers in patients with neuropathic diabetic foot are determined by the distal neuropathy severity degree and are associated with long term diabetes and requirement in insulin therapy. Poor glycemic control, foot deformities, arterial hypertension, overweight and obesity are the risk factors that should be corrected for prophylaxis and successful treatment of skin lesions in patients with diabetic foot.

**Key words:** diabetic foot, trophic ulcer, neuropathy score, obesity

## 170. VACUUM THERAPY IN THE TREATMENT OF PURULENT WOUNDS

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**Introduction.** Negative pressure wound treatment (NPWT) consists of applying a special dressing to the internal wound's environment, controlled by subatmospheric pressure. Sterile sponges with an impermeable membrane connected to a pump delivering subatmospheric pressure are applied to wound's edges. The sponges don't allow bacteria to multiply, and lead to reducing wound's size until healing occurs.

**Aim of the study.** To evaluate the NPWT benefits in purulent wounds treatment.

**Materials and methods.** The study was based on 19 cases presented with various purulent wounds of soft tissues treated at the Department of General Surgery, Municipal Clinical Hospital No.1 (Chisinau). There were 12 (63.15%) male and 7 (36.85%) female patients. Age of subjects varied between 32 and 76 years. The NPWT system was used if local signs of wound suppuration during its surgical secondary processing were noticed. Patients were treated under local or general intravenous anesthesia, in aseptic conditions. After the removing of sutures, hydrogen peroxide was used, necrotic masses – removed, and hemostasis – applied. Then a piece of sterile sponge was adjusted and installed into the wound channel. External tip of a tube, placed inside the sponge, exiting through a separate incision. The wound was partially sutured.

Wound's edges were treated with alcohol solution, and then dried. Hermetic film was then applied to cover the wound. The drain was connected to the NPWT system set at the pressure of -125 to -75 mm Hg. The dressings were changed once every 72 hours. During the application of another dressing, the sponge and the previously installed system was removed from the wound, examining the persistence of the necrotic masses. The state of the granulation tissue was also checked. The number of sessions depended on the above listed findings. In the absence of necrotic masses and pathological discharge secondary sutures were applied.

**Results.** In 3 (15.8%) cases dressings were changed only 2 times – enough for granulation tissue appearance. Twelve (63.15%) patients required 4 and another four (21%) – 6 sessions (exchanges of NPWT system) until sufficient proliferation of the granulation tissue.

**Conclusions.** We proved the usefulness of NPWT system that has been able to prepare the wounds to secondary sutures applying. Vacuum therapy in the treatment of purulent wounds is associated with shorter period of hospitalization and more effective pain management.

**Key words:** wounds, granulation tissue, negative pressure, vacuum therapy

## 171. DECISION FOR SURGERY IN ELDERLY PATIENTS WITH ACUTE APPENDICITIS

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**Introduction.** The diagnosis of acute appendicitis (AA) is difficult and remains one of the most challenging diagnostic issues in surgery in all age groups. Elderly patients have poor response, their symptoms and pathological changes are often inconsistent with abdominal pain, whereas the differential diagnoses are wide and difficult due to many other possible diseases, which may mimic AA.

**Aim of the study.** To evaluate the informative value of conventional clinical signs on presentation, as well as the role of imaging methods in diagnosis and decision for surgery in the elderly patients with AA.

**Materials and methods.** A total of 78 patients treated in the Department of General Surgery with histologically confirmed AA were included in the retrospective analysis (Jan-Oct 2017). Women were 52 (66.6%) and men - 26 (33.3%). Among study group 68 (87.2%) patients were under the age of 60 years, and 10 (12.8%) were over 60 years. The information regarding patient's demographic data, initial clinical presentation and assessment, laboratory tests, radiological studies with focus on abdominal ultrasonography (US) and computed tomography (CT) scan was collected.

**Results.** The duration of the preoperative hospitalization over 24 hours was considerably higher in the elder group: 30% vs. 8.8% in the younger group, but this finding was not statistically significant ( $p>0.05$ ). Only in two (20%) cases the diagnosis of AA in the elderly patients was based on clinical data only *versus* 44 (64.7%) - in younger population. In the remaining 8 elderly patients additional instrumental methods of diagnosis (abdominal US or CT scan) were required to confirm the appendicitis, to exclude alternative diagnoses of acute abdomen, and to make up the decision for surgical treatment (80% vs. 35.3% in the younger patients,  $p<0.05$ ).

**Conclusions.** The classic symptoms of AA are not indicative in elderly patients and cannot serve as a basis for reliable diagnosis, which requires more frequent use of imaging modalities, including USG and CT, and the decision for surgery is often taken on the basis of instrumental data.

**Key words:** acute appendicitis, elderly, imaging studies, surgery

## 172. TREATMENT OPTIONS FOR ACUTE COMPLICATIONS OF GASTRODUODENAL ULCER

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**Introduction.** The gastroduodenal ulcer holds the first place in the structure of the digestive tract morbidity. Diversification of anti-ulcer high end drugs with different action mechanism constituted the base for decrease of number of patients who suffered from gastroduodenal ulcer. This also has influenced the frequency of acute complications of gastroduodenal ulcer such as perforation and bleeding ulcer.

**Aim of the study.** To study the treatment options for gastroduodenal ulcer acute complications.

**Materials and methods.** A retrospective study based on patients treated for gastroduodenal ulcer who were hospitalized during the period 2016-2017 in CMH no.1 was performed.

**Results.** During a year in General Surgery Clinic of PMSI CMH no.1 there were treated 106 (94.6%) patients with upper digestive bleeding and 6 (5.4%) patients who were suffering of gastroduodenal perforation. From those 106 patients with bleeding who were treated in the clinic 41 (38.6%) had peptic ulcer as the origin of bleeding. All the patients with digestive bleeding underwent diagnostic endoscopy. In 41 patients with ulcer bleeding the primary emergency endoscopy revealed the following division of bleeding according to Forrest classification: Forrest IA-3 (7.3%) patients, IB in 8 (19.5%) cases, IIA-10 (24.3%) patients, IIB 15 (36.5%), IIC in 6 (14.6%) and Forrest III in 3 (2.6%) patients. In case of active bleedings and in patients with signs of stigmata of recent bleeding, the primary diagnostic endoscopy was also curative. In 36 (33.9%) patients the primary endoscopic haemostasis was successful and in 5 (4.7%) another endoscopy with repeated haemostasis was necessary. In 3 (2.8%) cases the repeated haemostasis failed and the patients underwent emergency surgery because of continuous bleeding. Thus, during a year, the patients who suffered from perforated ulcer and upper digestive bleeding underwent surgical treatment 10 patients - 6 (60%) for perforation and 4 (40%) for bleeding.

**Conclusions.** Currently, the surgical treatment is rarely used for the ulcer disease, mostly for cases of acute complications of ulcer which are the perforation and massive bleeding which is not possible to be treated by endoscopy.

**Key words:** gastroduodenal ulcer, bleeding, perforation

## 173. THE SURGICAL APPROACH OF THYROID NODULE(S)

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**Introduction.** Thyroid nodules are the most common finding in the thyroid gland and morphologically can denote the hypertrophic form of autoimmune thyroiditis, follicular adenoma, cysts and cancers of the thyroid gland. The foremost clinical importance of the thyroid nodules is given by their malignisation that requires surgical treatment in most cases.

**Aim of the study.** To evaluate the results of surgical treatment of the patients with thyroid nodule(s).

**Materials and methods.** The study included 75 patients with the age between 19 and 67 years, diagnosed with 1 or more thyroid nodule(s) that presented size greater than 1.0 cm, ultrasonographic malignancy criteria - irregular edges, hypoeogenity, intranodular vascularisation, microcalcifications, rigidity of tissues, scintigraphic criterion - "cold nodules"

which did not respond to conservative treatment. The volume of surgical interventions was established according to the results of extemporaneous histological examination of the thyroid tissue and consisted of: total thyroidectomies (9), subtotal thyroidectomies (2), unilateral thyroidectomies (52), enucleation of a nodule (2), isthmusectomy (1), hemithyroidectomy combined with contralateral nodule enucleation or hemithyroidectomy combined with contralateral partial lobe resection (9).

**Results.** Complications of intra- and postoperative period and the relapse of pathology were not identified. All the patients were discharged home in good conditions. Hormonal substituents were indicated after surgical treatment pursuant to the level of thyroid hormones.

**Conclusions.** Organ-preserving surgery is an effective method in the radical treatment of thyroid nodule(s).

**Key words:** thyroid nodule(s), extemporaneous histological examination, surgical treatment

#### **174. MECHANICAL JAUNDICE OF BENIGN ORIGIN – MEDICAL APPROACH**

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**Introduction.** The mechanical jaundice of benign origin (MJB) may be caused by a variety of affections: biliary lithiasis, benign strictures of bile ducts, gall bladder abnormalities, chronic pancreatitis, iatrogenic lesions, etc. The treatment of the cause that is at the origin of jaundice is the main objective.

**Aim of the study.** Evaluation of the scientific bibliographic sources referred to mechanical jaundice of benign origin.

**Materials and methods.** The study presents the magazine of literature (PubMed, School google, etc.)

**Results.** The diverse etiology of MJB requires a systematic and complex investigation to establish the diagnosis. Contemporary diagnosis includes clinical assessment, oriented imagistic diagnosis and topical imagistic diagnosis, which assures identification of etiology, level and degree of biliary tree affection. The endoscopic retrograde cholangiopancreatography or percutaneous transhepatic cholangiography represents the gold standard in contemporary diagnosis. The magnetic-nuclear resonance cholangiography is an expensive but advantageous method. The hepatobiliary sequence scintigraphy provides information on hepatic function in the presence of jaundice and is useful for highlighting the biliodigestive communications. MJB treatment is a surgical emergency, and the rate of postoperative complications and lethality is quite high, that's why it is required the preoperative decompression of biliary tree. Thus in the 1 stage, it is solved the jaundice and gallbladder infection by means of mini-invasive technologies, and in the 2 stage the intervention aiming at the disobstruction of the biliary tree and the prevention of relapses. In cholestatic lithiasis complicated with jaundice, the authors recommend sphincterotomy with litextraction and jaundice coupling, then in the stage 2 laparoscopic cholecystectomy. For benign strictures of the main biliary tract, iatrogenic lesions, are indicated the derivations on jejunal ansa excluded in Roux-en-Y.

**Conclusions.** MJB diagnosis is complex and will include several consecutive stages. The surgical treatment resides in the etiopathogenesis of MJ and it is frequently anticipated by a mini-invasive method of biliary decompression.

**Key words:** mechanical jaundice; choledocholithiasis



### **175. VALUES OF PLATELET TO LYMPHOCYTE RATIO AND NEUTROPHIL TO LYMPHOCYTE RATIO IN PATIENTS WITH SUPERFICIAL VENOUS THROMBOSIS OF LOWER LIMBS**

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**Introduction.** Recent studies demonstrated that increased neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR) are associated with a risk of development and progression of arterial and deep venous thrombosis, representing surrogate markers of endothelial injury, inflammation and prothrombotic state. However, until now the role of NLR and PLR in case of superficial venous thrombosis has not been determined.

**Aim of the study.** To evaluate the diagnostic value of the NLR and PLR in patients with varicose veins of lower limbs complicated by acute superficial venous thrombosis.

**Materials and methods.** Thirty patients with acute superficial venous thrombosis (SVT) confirmed by duplex ultrasound were prospectively included in study group. Thirty sex/age matched patients with varicose veins without thrombosis (VV) were used as controls. On the admission the NLR and PLR were calculated from full blood count in all patients. The values of D-dimer and C-reactive protein were determined in SVT group before treatment initiation.

**Results.** Median age of the patients was 60 (25%-75% IQR 55-66) years, 56% were female. In the study group thrombosis involved only varicose tributaries in 16 (53,3%) cases and the main saphenous trunk in the remaining. In SVT patients the median values of D-dimer and C-reactive were 635,0 ng/ml (25%-75% IQR 280-1208) and 9,5 mg/L (25%-75% IQR 2-45,2). The median values of PLR and NLR both were significantly higher in patients with SVT compared to VV group: 147,2 (25%-75% IQR 119-195) vs 113,5 (25%-75% IQR 91-141) and 3 (25%-75% IQR 2,3-3,7) vs 1,7 (25%-75% IQR 1,5-2,3), respectively ( $p < 0,01$ ). NLR showed moderate positive correlation with level of D-dimer in SVT group:  $r = 0,4$  ( $p < 0,05$ ). There were no correlations of PLR and NLR with the level of C-reactive protein. A trend to higher values of PLR and NLR in patients with main saphenous trunk involvement was observed ( $p > 0,05$ ). ROC-curve analysis demonstrated acceptable role of PLR (area under curve = 0,73) and NLR (area under curve = 0,78) for diagnosis of SVT. Using cut-off value of  $NLR > 2$ , thrombosis was predicted with sensibility of 87% and specificity of 70%.

**Conclusions.** NLR and PLR are not expensive and universally available laboratory tests that can serve as an adjunct for the diagnosis of superficial vein thrombosis in patients with varicose veins of lower limbs. Further studies are required to determine the utility of NLR and PLR for prediction of proximal extension and recurrence of superficial venous thrombosis.

**Key words:** acute superficial venous thrombosis, neutrophil-to-lymphocyte ratio, platelet-to-lymphocyte ratio

### **176. ABNORMAL PREOPERATIVE 24-HOUR PH SCORE – PREDICTOR OF FAVORABLE SURGICAL OUTCOMES**

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**Introduction.** Currently the laparoscopic correction of gastroesophageal reflux disease (GERD) has demonstrated its utility, being able to control symptoms of disease in well-selected patients.

Thus, were proposed several aspects of preoperative evaluation that predicts success, as typical symptoms of GERD and good response to acid suppression therapy. Preoperative 24-hour pH testing is controversial in patients who have typical symptomatic GERD, being reserved for patients with non-erosive GERD or with atypical symptoms.

**Aim of the study.** To compare the clinical outcomes of laparoscopic antireflux surgery (LARS) for symptomatic GERD between patients with normal and abnormal preoperative pH testing.

**Materials and methods.** Were selected 34 patients who underwent LARS for typical GERD between September 2016 and December 2017 at our hospital. All patients had preoperative pH testing and at least 3 months of post-operative follow-up. Two groups were formed: I - 18 patients with normal preoperative DeMeester score (DMS) (median 3.34, range 0.37 to 12.58) and II – 16 patients with abnormal preoperative DMS (median 28.70, range 16.96 to 96.13). Postoperative control of symptoms was evaluated using the Visick scale and HRQL-GERD questionnaire. Statistically significant difference was considered  $p < 0.05$ .

**Results.** Clinical outcomes were obtained from all patients at a median follow-up of 12 months (range 3 to 20 months) after surgery. Thirty from 34 patients (88.2%) were satisfied with surgery, having an excellent or good outcome (Visick scale). It's necessary to point that 3 from 18 (16%) patients of group I and only 1 from 16 (6.25%) from group II continued to have typical GERD symptoms ( $p < 0.05$ ). There was also statistically significant difference in postoperative Velanovich score (mean  $6.6 \pm 1.1$  vs.  $2.4 \pm 0.68$ ,  $p < 0.05$ ), group I patients having worse results.

**Conclusions.** Symptomatic GERD patients with abnormal preoperative DMS have better outcomes after LARS compared with those having normal one. So, to minimize poor symptomatic outcomes after LARS, a routine preoperative pH testing is advised.

**Key words:** GERD; laparoscopic antireflux surgery; pH testing; outcomes.

## DEPARTMENT OF PEDIATRIC SURGERY, ORTHOPEDICS AND ANESTHESIOLOGY

### 177. THE ACQUIRED CONGENITAL AND PATHOLOGICAL MALFORMATIONS OF THE ESOPHAGUS IN CHILDREN. OPTIMIZATION OF DIAGNOSIS AND MEDICAL-SURGICAL TREATMENT

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**Introduction.** The acquired congenital abnormalities and pathologies of the esophagus in children are an emergency with fatal potential, whose medical and surgical management and prognosis depend on the early assessment of the risk of the patient's life. Recent studies report that the etiology of these malformative and acquired diseases of the esophagus and multifactorial complications are extremely complex and the lack of early diagnosis and appropriate treatment leads to deaths in the associated complications.

**Aim of the study.** To present the curative vision surgical limits in the treatment of acquired anomalies and pathologies of the esophagus in newborn, infant and child, based on basic pathology and comorbidities in order to reduce complications and to improve the results of early and later medical-surgical treatment.

**Materials and methods.** The investigative protocol includes: clinical-paraclinic anamnestic data such as: radiography, ultrasound, EFGDS, Ph-metria, scintigraphy, CT, MRI and biochemical markers in patients aged from 0 to 18 years.

**Results.** The results of the study were distinguished by approaching a new vision of research in the field of esophagus anomalies and disorders in children, which allowed us to use these data in the diagnostic and medical-surgical treatment.

**Conclusions.** The theoretical importance of this work is the elucidation of etiopathogenesis and the evaluation of the anatomic-physiological, clinico-paraclinic features in the esophagus abnormalities and diseases in children. The results obtained will be used and will be presented as an informative basis in the process of developing the diagnostic algorithm and in estimating the risk factors for newborns, infants and children in esophageal abnormalities and diseases.

**Key words:** esophagus, diagnosis, complications, child, treatment

## 178. INTESTINAL MALROTATION IN CHILDREN

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**Introduction.** Surgery of congenital intestinal (duodenum) malrotation in children exists for almost 50 years, but only this decade it has been correctly codified as regards the intercurrent diagnoses, this possibility being strictly related to modern paraclinical assessment: ultrasounds, computed tomography scan, and other surgical technical possibilities.

**Aim of the study.** Estimating clinical and paraclinical features of both medical and surgical treatment peculiarities in intestinal malrotation in children.

**Materials and methods.** The paper was carried out in the clinic of the National Scientific and Practical Pediatric Surgery Centre N. Gheorghiu. The study includes the analysis of clinical and anamnestic data, prenatal and postnatal development data, environmental conditions, paraclinical tests, medical and surgical treatment in children with congenital malformations of small intestine, namely of duodenum.

**Results.** Following the surgical treatment, under endotracheal anesthesia, it has been managed to perform the adhesiolysis based on bont method and electrocoagulation. Evolution was simple. After the surgery, these children followed a conservative treatment. Having a good general condition, with primary cicatrization of wound, children have been discharged.

**Conclusions.** Presently, developing new criteria for congenital malrotation diagnosis remains an insufficiently studied issue in the pediatric surgery. Prenatal diagnosis in these duodenal malformative types has improved a lot of patients' forecasts. Management of surgical congenital disorders in children shows that currently duodenum anomalies in children continue to increase, due to little studied causes, with related complications that worsen both disease evolution and forecasts. Intestinal (duodenum) malrotation is a congenital anomaly due to disorder of rotation and fixing of duodenum, which interconnects the disorder of evacuomotor function of the duodenum and duodenostasis. The diagnostic algorithm of intestinal malrotation includes consecutive clinical manifestations, biological features, fibrogastroduodenoscopy, pH measurement, traditional lower gastrointestinal series and double-contrast barium enema, and three-dimensional duodenography by CT, peripheral ECG. Studies show that surgical treatment techniques in intestinal malrotation continue to be developed. The surgical treatment is adapted depending on the form of malformation, clinical and evolutionary stage of related complications.

**Key words:** malrotation, duodenum

## 179. THE ANALYSIS OF LATE POSTOPERATIVE COMPLICATIONS IN CHILDREN TREATED FOR HIRSCHSPRUNG DISEASE IN NEWBORN AND INFANT PERIODS

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**Introduction.** Children who have undergone surgery under Hirschsprung disease (MH) come to the attention of territory physicians with postoperative enterocolitis, persistence of colostasis, obstruction and enuresis, which affects their psycho-emotional status.

**Aim of the study.** Analysis of the rate of late postoperative complications in children treated for MH in dependence of the surgical-technical variant and the spreading of the non-ganglionic area.

**Material and methods.** The study group included 84 newborns and infants hospitalized and treated in the NSPCPS "N. Gheorghiu" of PMSI IM and C for MH during the years 2007-2017. Depending on the anatomical and topographical characteristics of the affected colon segment, we defined the following locations in the non-ganglionic area: ultra-short (11.9%); rectosigmoidal (77.3%); long (6.0%) and ultra-long (4.8%). Radical treatment was provided by applying the both classical surgical methods like Duhamel method (16.6%), Swenson-Pellerin (34.5%), Soave-Leoniushkin (35.8%), total colectomy with cecrectal or ileorectal anastomosis (4, 8%), and minimally-invasive methods like trans-rectal endoanal descent (8.3%). The postoperative patient assessment scheme was provided for their supervision at 1, 3, 6, 9 and 12 months, then every 6 months until the recovery treatment was completed. The postoperative evaluation period ranged from 1.8 to 7.2 years, averaging  $4.5 \pm 2.7$  years.

**Results.** The criteria for evaluation of the remote postoperative results were the frequency of the stool, continence, urinary control, physical development (weight, height). Patients with the classical MH form corrected by Duhamel, Soave-Leoniushkin, Swenson-Pellerin, 80.4% had intestinal excretion once a day, the others (19.6%) once every 2 days or 2 times a day, without pathological clinical manifestations. Patients operated for the classical MH form had adequate control over the continence, regardless of the applied technique. Fecal excretion was recorded in 28.6% cases with a frequency of 1-3 times a day, particularly at patients with intestinal evacuation every other day. 96.6% of patients did not experience urinary dysfunction and clinical signs of neurogenic bladder. In 3.4% of children was found nocturnal enuresis corrected by physiotherapists and medical treatment. Physical development, in 89.8% of cases had a normal physical development appropriate to the age. The rest (10.2%) children experienced growth retardation and moderate weight deviations.

**Conclusions.** Estimation of postoperative results indicates that the most vulnerable in this regard, were children operated for the ultra-long MH form, especially those who underwent colonectomy with resection of the ileocecal segment.

**Key words:** Hirschsprung disease, postoperative complication, newborn

## **180. ASPIRATION OF FOREIGN BODIES IN LOWER RESPIRATORY TRACT IN CHILDREN**

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**Introduction.** Injury due to foreign body aspiration (FBA) is a common and serious pediatric emergency, requiring prompt recognition and early treatment to minimize the potentially serious and sometimes fatal consequences. FBA continues to be a cause of childhood morbidity and mortality, usually in pre-school children.

**Aim of the study.** Case assesment of FBA in children based upon age, gender, locality and level of respiratory tract lesion.

**Materials and methods.** The cohort study included 106 patients hospitalized between 2011 - 2016 in Pneumology Department, Mother and Child's Institute of the Republic of Moldova, diagnosed with FBA, confirmed via bronchoscopy performed with general inhalative anesthesia. Foreign body extraction was carried out by means of rigid bronchoscopy after thorough aspiration and prevention of mucosal bleeding. Statistics were assessed using the EpiInfo-software.

**Results.** It was established that pediatric FBA in the respiratory tract is more frequent among girls 57.5%: 95CI, 47.6 – 67.1 cases (61 girls) and 42.5%: 95CI, 32.9 – 52.4 cases (45 boys). The average age (aa) was 1.9±0.17 years, varying between 0.6–14 years. The batch was divided into 3 groups according to childhood stages: 1) the most frequent FBA was estimated in toddlers – 88.9%: 95 CI, 81.1 – 94 cases, aa 1.57±0.06 years; 2) in children > 3y.o. – 8.5%: 95CI, 4 - 15.5 cases, aa 6.4±1.1 years; 3) and it was rarely found in infants – 2.8%: 95CI, 0.6 - 15.5 cases, aa 0.76±0.11 years (F statistic = 93.5; p<0,0001). There was a prevalence of accidental FBA in children from countryside – 67%: 95CI, 57.2 - 75.8 cases, less often this event occurred in children from urban areas – 24.5%: 95CI, 16.7 - 33.8 cases and episodically – in children from municipalities (8.5%: 95CI, 4 – 15,5 cases). The majority of foreign bodies were found in the bronchial tree 89.6%: 95CI, 82.2 – 94.7 cases; without designation – in 6 – 5.7%: 95CI, 2.1 – 11.9 cases; in trachea and larynx 2 and 3 cases (1.9%: 95CI, 0.2 - 6.6 and 2.8%: 95CI, 0.6 -8).

**Conclusions.** FBA prevails in girls – 57.5%: 95CI, 47.6 – 67.1 cases. The most vulnerable age is from 1 to 3 y.o. when children are more often exposed to habitual accidents (statistic factor = 93.5; p<0,0001). There is evidence of a critical situation in the rural areas, compared to the urban ones. By localization the most frequent lodgment of foreign bodies was in the bronchi.

**Key words:** pediatrics, pneumology, foreign body, aspiration, bronchoscopy

## **181. LAPAROSCOPIC TREATMENT OF BENIGN OVARIAN MASS IN CHILDREN AND ADOLESCENTS**

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**Introduction.** Laparoscopic treatment for benign ovarian mass in adult patients are widely used and are considered as a standard treatment. At the same time, the use of laparoscopic technologies in ovarian cysts and benign tumors in pediatric patients is limited and in the literature there are presented a small series of cases.

**Aim of the study.** To assess the imminent results of laparoscopic treatment of ovarian mass in pediatric patients.

**Materials and methods.** Database analysis (n=86) with cysts and ovarian tumors in pediatric patients, selected for surgical treatment using laparoscopic technologies from 2000 to 2017. For diagnostics were used ultrasonography, computed tomography and magnetic resonance imaging.

**Results.** The average age of patients was 15.9±0.2 years (95% CI:15.54-16.39), including 5(5.8%) - premenarha and primary amenorrhea (Mayer-Rokitansky-Küster-Hauser syndrome) - 1(1.2%). The Body Mass Index was 21.9±0.4 kg/m<sup>2</sup> (95% CI:21.21-22.68). Ovarian mass (n=91) were located: from the right - 42(48.8%), from the left - 39(45.4%) and from both sides - 5(5.8%). Based on radiological data, ovarian cyst/tumor were characterized: max. size - 8.3±0.4 cm, large (> 8 cm) - 38(44.2%) and giant (> 15 cm) - 4(4.7%); "morphological" index after Jeoung HY. - 3.6±0.2 (from 1 to 9). In 9(10.5%) cases laparoscopic interventions were performed for adnexal torsion. For laparoscopic treatment were used two variants: intracorporeal interventions (I gr., n=65) and extracorporeal cyst-(tumor-) ectomy (II gr., n=21). There were performed: cyst -(tumor-)ectomy with ovarian tissue preserving - 85(93.4%), anectomy -

4(4.4%), cyst -(tumor-)ectomy + tubectomy - 1(1.1%), ovariectomy 1(1.1%) and contralateral ovary diathermocoagulation - 10(11.8%). Mean operation time was 29.3±1.1 min (95% CI:27.07-31.48), in gr. I this index was slightly lower than in gr. II - 27.9±1.1 min. (95% CI:25.79-30.18) vs. 33.1±2.6 min (95% CI:27.15-39.04), the difference is not statistically significant (NS). Intraoperative hemorrhage was 62.5±2.9 ml (95% CI:56.48-68.41), in gr. I this index is lower compared to gr. II - 59.6±2.8 ml (95% CI:53.98-65.28) vs. 70.8±8.3 ml (95% CI:53.40-88.12), the difference is not significant (NS). The morphological examination revealed: ovarian cysts - 57(62.6%) and benign tumors - 34(37.4%). Complications in the postoperative period were not found, average hospitalization - 4.5±0.2 days.

**Conclusions.** The results of laparoscopic surgery in case of benign ovarian mass in children and adolescents are comparable to mini invasive interventions in adult patients. In the case of large and giant ovarian mass it is rational to combine laparoscopy with extracorporeal cyst-(tumor-)ectomy.

**Key words:** laparoscopy, ovary, pediatric patients

## DEPARTMENT OF TRAUMATOLOGY AND ORTHOPEDICS

### 182. SURGICAL EPISODE AND MANAGEMENT OF DEGLOVING SOFT TISSUE INJURIES OF THE LIMBS

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**Introduction.** Degloving soft tissue injuries are part of multiple and associated trauma, accompanied by haemorrhage and shock. In order to avoid flap necrosis and add a new skin donor area is important to recognize the problem and to manage properly those injuries.

**Aim of the study.** To study clinical presentation, management of soft tissue degloving injuries of the limbs, outcome and to propose a treatment protocol for varying degrees of severity.

**Materials and methods.** During the period of 2013-2017, 13 patients with different degrees of degloving injuries were examined and treated. The study group consisted of 4 males and 9 females. Average age was 58 years, with age limits 32-74 years. The injury was classified as pattern 1,2,3,4 (Arnez, Z.M. & Khan, U. 2010). In all cases the flap's viability was appreciated. All patients had treatment with washing, debridement; 5 patients with resection of avulsed flap and converting the flap to split-thickness graft (Krasovitov method), 2 cases - axial flaps, 2 cases - primary split-thickness graft, 3 cases flap was sutured to its original position.

**Results.** In study group were pattern 1 - 3 cases, pattern 2 - 2 cases, pattern 3 - 2 cases, pattern 4 - 5 cases. In 10 cases - stable patients with deemed unviable flaps who underwent primary plastic surgery. In 1 case - stable patient with non-viable flaps (late admission) who underwent resection of avulsed flap and negative pressure therapy followed by plastic surgery. In 1 case an unstable patient received staged surgical treatment.

**Conclusions.** In treatment and determination of surgery's timing the active surgical tactic with carrying out autodermoplasty in first 4-6 hours has priority.

**Key words:** degloving injures, Krasovitov, management

### 183. SURGICAL MANAGEMENT OF DUPUYTREN'S DISEASE

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**Introduction.** Dupuytren's disease (M 72.0) is a fibroproliferative disorder, a disease of the conjunctive system of unknown etiology, which often leads to shortening and thickening of the palmar and digital fascia, to a permanent and irreversible flexion of the fingers. Dupuytren's contracture mainly affects the ring finger and pinky, and occurs most often in older men of Northern European descent.

**Aim of the study.** The retrospective and prospective analysis of the surgical treatment results of MD through various surgical methods.

**Materials and methods.** During 2013-2017, in department of Hand Surgery with the application of microsurgical techniques in Clinical Hospital of Traumatology and Orthopedics, at 426 patients (361 (84.7%) men and 65 (15.2%) women) Dupuytren's disease was diagnosed and treated with different surgical techniques. The mean age for men was 57.3 years and for women 59.6 years, mean age for both - 58.5 years. Urban patients - 156 (36.7%), rural - 270 (63.3%). The number of patients that had their right hand operated was 246 (57.7%) and the left hand - 180 (42.3%). The most commonly affected finger was finger IV – 129 patients (51.19%); finger V - 92 patients (36.51%); III - 22 (8.73%); I - 8 (3.17%); II - 1 (0.4%). III degree of Dupuytren disease was found in 343 (81%) patients, II degree at 60 (14%) and IV degree in 23 (5.4%) patients. In most cases (289 patients) selective excision of palmar aponeurosis with Z-plasty was performed; in 37 cases percutaneous needle aponeurotomy (PNA) was performed; in 13 patients - the open palm technique (from Mc Cash 1964); in 12 patients - cross finger skin flap; in 3 cases - radial forearm flap and in 2 cases – the amputation of pinky finger

**Results.** In order to evaluate the patient's condition and the function of the pre- and post-operative upper limb the DASH subjective inquiry "Disability of the Arm, Shoulder and Hand Outcome Measure" was used.

**Conclusions.** Regardless of the successes in the treatment of orthopedic diseases and experience in the treatment of the serious forms of Dupuytren diseases, the issue of the treatment of these patients remains current. Surgical treatment can correct contractions, but the issue of recurrences and enlargements of the disease remains unresolved.

**Key words:** Dupuytren's contracture, Dupuytren's diseases, Dupuytren's diathesis

#### **184. THE VASCULARIZED ALLOTRANSPLANT– SUCCESSFUL ALTERNATIVE FOR MASSIVE BONE DEFECTS**

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**Introduction.** The massive bone defects after trauma, in congenital anomaly, tumors, infections or nonunions is a real dilemma for reconstructive surgery of the locomotor system. Contemporary methods that are usually used for reconstruction of the bone structure are: bone transplant, cryopreserved allografts, autograft or prosthesis, having high levels of morbidity and complication rates. Their common features are bad blood circulation and unviability, resulting in mechanical instability and poor bone consolidation (periprosthetic fractures, stress fractures, pseudoarthrosis, sepsis).

**Aim of the study.** To determine what are the different methods used in reconstruction of massive bone defects.

**Materials and methods.** Scientific papers and research results regarding bone defects reconstruction methods were reviewed.

**Review.** A vascularized bone graft, reclosed microsurgically in the circuit, has a good potential for regeneration, plasticity, and a post-graft mechanical stiffness. The vascular bone autograft, with all biological and mechanical characteristics is considered the "gold standard" in the treatment of small bone defects. However, it becomes insufficient in size, shape and cellular repair capacities in the case of massive bone defects due to the increased circulatory needs of the injured segment. Maintaining the osteoplastic properties of the vascularized autograft and combining them with the orthotopic characteristics of an allogene bone or bone segment would be a successful alternative for the reconstructive surgery of the locomotor. The dilemma imposed by vascularized composite allotransplantation (VCA), is immunosuppression (IS) and immunomodulation for life, which is not justified in case of vital organs (heart, liver, kidneys) transplants, because of adverse effects risk (systemic complications, sepsis, neoplasms). Without an IS, the immune cascade will cause vascular endothelial cell lysis, compromise microcirculation with necrosis of the graft. The last studies, describe the surgical neoangiogenesis typical of the host in VCA with a short-term IS - 14 days, as an effective one, with results that allow consolidation and mechanical stability. Studies are performed preclinically on rats, rabbits and pigs. Other studies present decelularization methods of the vessel while preserving vascular stiffness.

**Conclusions.** A perfect alternative in treatment of the massive bone defects is using a vascular allograft, without associated immunosuppression.

**Key words:** massive bone defects, reconstruction, allograft

## **185. INDICATIONS FOR USING PROPER TYPE OF PROSTHESIS IN ELDERLY PATIENTS WITH FEMORAL NECK FRACTURES**

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**Introduction.** Femoral neck fractures in the elderly are frequent due to the increase in life expectancy. These injuries represent a great health care problem and have a significant impact on health insurance costs. Hip replacement for this kind of fractures is a common and safe procedure, which will allow to mobilize patients shortly after surgery. Types of endoprosthesis used in elderly include unipolar, bipolar hemiarthroplasty, or total hip arthroplasty. Over  $\frac{3}{4}$  of cases occur after the age of 60, with the main predisposing factor being osteoporosis, so a minor trauma involving an accidental fall is sufficient to produce a fracture. In young people, to produce such a fracture, a much stronger impact is required.

**Aim of the study.** Summarizing of indications and contraindication of using a certain type of prosthesis for the treatment of the femoral neck fractures in elderly patients.

**Materials and methods.** For the study were used the materials collected in the 2nd Department of the PMSI Clinical Hospital for Orthopedics and Traumatology during the 2012-2017 period, that included data of 464 elderly patients with femoral neck fracture. The main focus was: the Garden classification of the fracture, age of the patient, their general condition, osteoporosis and osteoarthritis degrees.

**Results.** In 2nd department were hospitalized patients with Garden III and IV type of the femoral neck fracture. Unipolar prosthesis was used in 171 cases (36.9%), only in patients over 80 years; bipolar hemiarthroplasty in 192 cases (41.5%), age variation was of 60 - 80 years; also a total hip arthroplasty was selected for 101 (21.6%) patients with advanced degrees of osteoarthritis. In our



study, unipolar hemiarthroplasty was used for the patients who are physiologically older with comorbidities. They were satisfied after surgery, being able to perform their daily activity. Advantages of monopolar and bipolar arthroplasties include short operation time and quick mobilization of the patient, which is very good to prevent complications. Disadvantages of unipolar and bipolar hemiarthroplasty is that they increase biomechanical stresses on the acetabulum with consecutive destruction of the acetabular fosa with developing of cotiloidites. The appearance of cotiloiditis may require surgical re-intervention and conversion to the total hip prosthesis. 85% were patients over 70 years of age, respectively the prostheses used were mostly bipolar and monopolar, but there were also those who required total prosthesis. Total hip replacement is advantageous for active, healthy, lucid patients, with a long life expectancy.

**Conclusions.** The discussions of using total hip arthroplasty vs monopolar or bipolar hemiarthroplasty are still open. Total hip replacement seems to be preferred for avoiding surgical re-intervention with possible patient risks and additional costs. Also these aspects should be evaluated to avoid the risks of prolonged and invasive surgical intervention occurring in total hip arthroplasty.

**Key words:** femoral neck fractures, prosthesis of the hip, arthroplasty

## **186. FRACTURES OF THE DISTAL HUMERUS, CLASSIFICATION, DIAGNOSIS, TREATMENT**

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**Introduction.** Distal humerus fractures are associated with many problems like fracture comminution, osteoporotic bone and complex fracture anatomy. Majority of the distal humerus fractures (96%) have a complex pattern involving both the columns and the articular surface (AO type B and C injuries). Distal humerus fractures comprise 1–2% of all fractures in adults with a reported incidence of 5.7 per 100 000 per year.

**Aim of the study.** To evaluate the intermediate term results (follow up of two years) of distal humerus fractures according to data from medical records, implementation of AO classification (Arbeitsgemeinschaft für Osteosynthesefragen) and its codification, type of implant used in fracture fixation, specific parameters of elbow postsurgical treatment.

**Materials and methods.** We have proposed a study of patients with distal humerus fractures (DHF) which consecutively was treated in department of Hand Pathology with the application of microsurgical techniques (6 Section) of Traumatology and Orthopedics Clinical Hospital, Chisinau in the period 2016-2017. Final outcomes were determined by using Disabilities of Arm and Shoulder and Hand (DASH) score and the Mayo Elbow Performance (MEP) score calculated along with complete range of motion. All results were presented as mean  $\pm$  standard deviation ( $\pm$ SD).

**Results.** According to AO codification of DHF were determinate type A – 10, type B – 6, type C – 40 and in total were investigate 56 patients. The report between sex was 3:1 (42:14) with predomination of female gender. In three cases was achieved close reduction of FHD type A and fixation was obtained with k-wires. In rest patients were apply open reduction and internal fixation according to AO types of FDH in type A – 2 case was use k-wire an tension bands – and one case orthogonal plating; type B – lag screw in 2 cases and k-wires fixation in 4 cases; in type C was the main goal to obtain the triangular stability with restauration of three columns and were used k-wire an tension bands in 20 cases, orthogonal plating in 9 cases and at 11 cases parallel plating. All fractures healed, and radiographic union was observed at an average of 3 months.

Was possible to investigate MEP and DASH scores at 19 patients with a mean of 85±17 and 39±23.

**Conclusions.** Outcome of open reduction and internal fixation of distal humerus fractures can result in high union rates with acceptable outcome DASH and MEP scores.

**Key words:** distal humerus fractures, column, fracture fixation, bone plates

## **187. SEPTIC COMPLICATIONS OF THE KNEE ARTHROPLASTY. CLINICAL PICTURE. DIAGNOSIS. TREATMENT**

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**Introduction.** Knee prosthesis in 90% of cases permits the removal of the algic syndrome and improve the quality of patients lives for 15 years and more. According to the arthroplasty records in the US, in 2008 were performed 39286 primary total knee arthroplasties and 2458 revision arthroplasties. In the Republic of Moldova more than 12000 patients are registered in the waiting list for endoprosthesis.

**Aim of the study.** Evaluation of septic complications in knee arthroplasty, symptoms examination and diagnostics, developing an antibacterial therapy management program.

**Materials and methods.** A total of 400 analyzed medical records of patients with endoprosthesis knee were evaluated, but the study was conducted on a sample of 16 patients with septic complications after knee endoprosthesis admitted in ward no. 5 Clinical Hospital of Orthopedics and Traumatology between 2011-2017. The study was conducted under a protocol of individual study, and the study criteria included: age, sex, type of surgery, the location of the infection, the pathogen resistance to antibiotics, days of hospitalization and associated risk factors.

**Results.** Morbidity due to septic complications in knee arthroplasty was 4% cases per 100 operations. The prevalence of septic complications was higher among women - 62,5%. Prevalence increased with age, between 50 - 59 years: 25%, between 60 - 69: 50%. More prevalent pathogens agents were Gram-positive microorganisms, constituting 63.6% of the total of 22 strains and Gram negative - 36.6%. The predominant bacteria were *S. Aureus* (31.8%), followed by *S. Epidermidis* (18.8%), *E. coli* (13.6%). The incubation period of purulent septic infections that occurred in these patients was approximately 12 months. It has been demonstrated that the patients from the units of endoprosthesis were treated with combined antibiotic therapy. According to the study, the top choice was the treatment consisting of two antibiotics - 37.5%. And depending on the surgical treatment of septic complications applied to the knee, the highest percentage rests with the ablation of the prosthesis with the application of a cement spacer and arthrodesis with the application of the Ilizarov-type extra-focal synthesis apparatus - 37.5%.

**Conclusions.** It has been demonstrated that antibiotic therapy in the treatment of septic complications of knee joints is given empirically and irrational by combining 2 or more antibiotics, which causes resistance of pathogenic microorganism to antibiotics. To this purpose it is necessary to permanently monitor the circulating causative agents from the hospital and the antibiotic-resistance / sensitivity depending on the type of microorganism.

**Key words:** knee arthroplasty, knee defects, infection, antibiotic treatment

## **188. CONTEMPORARY METHODS OF SURGICAL TREATMENT OF RECURRENT DISLOCATION OF HUMERAL HEAD**

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**Introduction.** A variety of operative techniques have been described as Bristow-Latarjet technique. In our study we described the experience of surgical treatment in patients with anterior shoulder instability using this procedure. Because of the anatomical peculiarities of shoulder joint, it is more predispose to dislocation. In 16-38% cases recurrent humeral head dislocations represents complication of primary dislocations in first 6 months from the primary injury. They are mostly characteristic for young men, aged between 20-30 years in 90% cases. The open Bristow-Latarjet procedure involves the partial transfer of the coracoid process with attached short tendon of biceps muscle to the front of the glenoid. This placement of the coracoid in „weak area of the joint” acts as a bone block combined with muscle insertion prevents further dislocation of the joint.

**Aim of the study.** Analyze the results and indication for using open Bristow - Latarjet technique in patients with anterior recurrent dislocation of the shoulder.

**Materials and methods.** This study includes 53 patients treated with open Bristow-Latarjet procedure. In 10 cases-dislocation was reduced by people with no medical studies, another 14 were without immobilization, in 12 cases was used posterior gyms, in other 10 soft Dessault bandage. In 12 patients was found deformation of anterior and antero-interior labrum

**Results.** The success of removing and replacement of coracoid process on the anterior part of glenoid fosa was appreciated: during surgery, in 3 weeks after surgery due to the movement in the shoulder joint, and in 6 weeks – according to the x ray results. It showed excellent outcomes in 14 patients, good outcomes in 32 patients and satisfying outcomes in 7 patients, all having started active functional treatment in 3 weeks after surgery. 47 patients mention full satisfaction with the outcomes, no one got recurrent dislocation after treatment.

**Conclusions.** The Bristow-Latarjet surgery is used in treatment of recurrent dislocation of humerus head with glenoid cavity dysplasia, because this technique ensures prevention of new recurrences and allows upper extremity function recovery in 95-98%.

**Key words:** shoulder instability, Bristow-Latarjet surgery, treatment outcomes

## **189. THE SURGICAL TREATMENT OF THE PATIENTS WITH THE SCARRING SEQUELAE OF THE BURN INJURIES OF THE HAND**

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**Introduction.** Hypertrophic and keloid scars as consequences of burn injuries of the hand can be physically, socially and psychologically disabling, and they are a common and an under-managed problem.

**Aim of the study.** To study the clinical evolution of the burn scars on the hand, of the sequelae and scar stiffness caused by it; to determine the options in the surgical treatment of correction and to establish its efficacy.

**Materials and methods.** A descriptive-retrospective study of a group of 31 patients with scarring sequelae on the hand, which underwent surgical treatment of correction, was performed. To determine the influence of the scar process on the life quality and the postoperative results VSS (Vancouver Scar Scale), BSHS-R(Revised Burn –Specific Health Scale), UCLA (end-result score) were used.

**Results.** The scar excision and local tissue plasty by advancement or transposition was used in 51.61% (16 patients). In 35.48% (11 patients) the substitution of the defect was performed by autodermoplasty, and in 12.9% (4 patients) a vascularized flap was used.

**Conclusions.** The scar sequelae after burn injury limits the function of the upper limb and has a significant influence on the life quality and social integration of the patient, while its surgical correction provide functional recovery of the hand with better aesthetic restoration.

**Key words:** burn; scar stiffness; surgical correction

## 190. SURGICAL TREATMENT IN WRIST INSTABILITIES

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**Introduction.** Wrist joint instabilities are ligament injuries associated with subluxations, luxations, fractures, nonunions or osteoarticular diseases of carpal bones. There are type of surgery to resolve these problems.

**Materials and methods.** Our experience is based on the treatment of 129 patients with wrist instabilities of different etiology aged between 17 and 68 years who underwent various selective arthrodesis. The average duration of disease was 3 years and 2 months. Kienbock disease was diagnosed in 41 patients, in various stages, pseudoarthrosis of the scaphoid complicated by deforming osteoarthritis - in 71 cases, rotational subluxation of the scaphoid - in 9 cases, trapezium-trapezoid-scaphoid osteoarthritis – in 4 patients and malunion of the distal radius fracture – in 4 cases.

**Results.** Arthrodesis directed to obtain an ankylosis of the carpal bones by losing the amplitude of movements, but allows to achieve a stable joint, without pain and to restore gripping power. In 71 patients with scaphoid pseudoarthrosis, complicated with deforming osteoarthritis, arthrodesis of 4 carpal bones with scaphoidectomy in different variants was performed in 49 cases, total wrist arthrodesis in 8 cases, scaphocapitate arthrodesis in 4 cases, removing the first row of carpal bones in 3 cases, scaphoidectomy in 5 cases, radial-scaphoid arthrodesis – in 1 case, and 1 other in scapho-trapezium-trapezoid arthrodesis. In 41 patients with Kienbock disease, Graner operation was performed in 16 cases, arthrodesis of 3 carpal bones in 10 cases, capitate-scaphoid arthrodesis – in 8 cases, radial-semilunar – in 4 cases, radial-scaphoid arthrodesis – in 1 case, removing the first row of carpal bones – in 2 cases. Arthrodesis of 3 carpal bones (scapho-trapezium-trapezoid), was performed in 4 cases of deforming arthritis. Also triple scaphoid arthrodesis was done successfully in 9 patients with rotational subluxation of the scaphoid. Total wrist arthrodesis was performed in 4 cases of the intraarticular radial fracture malunion. Long-term results were followed up in 46 patients: good (18), satisfactory (23). Unsatisfactory outcomes were in 5 cases because of absence of the ankylosis and presence of the pain.

**Conclusions.** Selective wrist arthrodesis is indicated in deforming arthritis grade II or III of diverse etiology, when outstanding amplitude movements are up to 50% of normal range.

Each case of selective wrist arthrodesis is chosen individually according to disease, the spreading grade of deforming osteoarthritis and patient profession.

**Key words:** wrist instabilities, pseudoarthrosis of the scaphoid, Kienbock disease, selective arthrodesis

## 191. FREE FLAP IN HEAD AND NECK RECONSTRUCTION – OUR EXPERIENCE

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**Introduction.** Reconstruction of defects in the head and neck poses a unique challenge. Unlike other areas of the body, immediate or early closure of head and neck defects is vital for several reasons. Key to success of surgery is choosing an appropriate reconstructive option based on the patient's wishes and necessities. Where possible, free tissue transfer provides the best functional and aesthetic outcomes for the vast majority of defects.

**Aim of the study.** To present an algorithm to guide choice of flap selection based on our clinic experience and review principles of reconstruction and secondary surgery for head and neck defects.

**Materials and methods.** Clinical series of patients undergoing head and neck reconstructions in last decade were analyzed and grouped according to the regions: (1) scalp, (2) oral cavity, (3) mandible and (4) neck and choice of reconstruction by different types of free flaps. The study group was consisted from 14 patients, 10 males and 4 females. Average age was 46 years, with age limits 20 - 66 years. According to etiology, there were 8 defects due to cancer, and 6 defects due to trauma. Defect sizes varied up to 32 cm. Associated lesions were in 3 cases.

**Results.** During last decade in the IEM were performed a total of 12 reconstructions. The radial flap was the donor site in 8 reconstructions, followed by the LD flap - 3, free fibula osseocutaneous flap used in 2 cases and omentum - 1 case. In case of reconstruction of the bone and/or soft tissue (mandibular defects) we recommend to use fibula osseocutaneous flap (2), for medium-sized soft tissue defects (7) - non-innervated radial flap; for large defects and necessity to refill the cavity after bone and muscular resection or in the presence of infected granular wounds/osteitis of cranial bones (2) - LD flap using muscles to cover cavities. In case of massive defects (total or subtotal lack of scalp) it can be used the omentum flap. In case of oral mucosa defects and/or tongue with a possible necessity for further innervation (1), we recommend to use radial flap with reinnervation by suturing lateral or medial cutaneous nerve of the forearm to sensory nerves of the recipient site. 85% of the reconstructions were immediately after excisions or trauma. Surgical re-exploration was necessary in 3 patients; the failure rate from marginal necrosis of the flap was in 2%. Other complications encountered in our group: hematoma – 1 case, venous deficiency – 1 case, arterial – 1 case. In 1 case was performed titanium plate fixation for parietal bone defect after excision. All flaps survived and all donor sites were closed primarily. After a mean follow-up time of 8.1 (5-18) months, there were no problem with the donor or recipient sites.

**Conclusions.** Head and neck defects can lead to devastating cosmetic and functional deficits with resultant psychological, physical, and nutritional detriment. In our experience, free tissue transfers have been shown to be a successful method for one staged reconstruction in all cases, with flap success rates of 98-99% and low re-explorations rate (2 %). In treatment and choice of reconstruction it is important to determine the goals of reconstruction and to select the most appropriate option for the particular defect.

**Key words:** free flap, head and neck, reconstruction, algorithm

## **192. SURGICAL TREATMENT OF POSTTRAUMATIC DISTAL RADIOULNAR JOINT INSTABILITY**

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**Introduction.** The distal radioulnar joint (DRUJ) is unique as it is not a joint but a continuation of the forearm joint. The incidence of DRUJ instability after a distal radius fracture is reported to be between 10% - 40%. DRUJ instability is an increasingly recognized clinical problem. Most patients experience no symptoms but in some people it can lead to disabling symptoms such as pain and impaired function. There has been an increasing trend to intervene surgically to treat DRUJ instability but with variable result.

**Aim of the study.** To evaluate the intermediate term results (follow up of five years) posttraumatic DRUJ instability according to data from medical records, surgically method used in DRUJ instability, follow-up by Mayo wrist score, Disabilities of the Arm, Shoulder and Hand questionnaire (DASH score).

**Materials and methods.** We have performed a study of patients with DRUJ instability that consecutively was treated in department of Hand Pathology with the application of microsurgical techniques (6 Section) of Traumatology and Orthopedics Clinical Hospital, Chisinau in the period 2013 - 2017. Outcomes were determined by using DASH and Mayo wrist scores. All results were presented as mean  $\pm$  standard deviation ( $\pm$ SD).

**Results.** We found 28 patients with posttraumatic DRUJ instability. The report between sex was 18:10 with predomination of female gender. Exist 3 types of surgically methods: direct, indirect and reconstruction of ligaments of DRUJ. At 26 patients was applied direct surgically procedure from them extrinsic interventions: were 4 – Darrach procedure; correction osteotomies of ulna – 9; correction osteotomies of posttraumatic malunion of distal radius – 12; and one intrinsic procedure Sauve-Kapandji. Stabilization by reconstruction of ligaments of DRUJ instability were treated 2 patients. DASH and Mayo wrist scores showed poor results at patients after Darrach procedure with a mean of  $55\pm 2$  and  $60\pm 1$ , satisfactory result at Sauve-Kapandji procedure 75 and 80, relatively good results at correction osteotomies of posttraumatic malunion of distal radius  $70\pm 2$  and  $75\pm 1$  and excellent result were obtained just at younger patients (6 cases) to which were applied surgically procedure of correction osteotomies of ulna  $88\pm 2$  and  $90\pm 1$ , in rest was poor result  $50\pm 5$  and  $60\pm 2$ .

**Conclusions.** Diagnostics of the DRUJ Instability was problematic early in Republic of Moldova. It is necessary to make a study to improve the imaging quality diagnoses of soft tissue pathology, especially for peripheral TFCC tears and TFCC detachment from the fovea for establishing the correct diagnosis and apply an ample reconstruction.

**Key words:** distal radioulnar joint, instability, stabilisation.

### 193. SURGICAL TREATMENT OF OSTEOPOROTIC TROCHANTERIC FRACTURES

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**Introduction.** The trochanteric fractures are often encountered in elderly people and make up 3 - 5% of all falls. At the same time, the fracture rate of these fractures increases with age and in patients over 70 years risk for fracture will be ten times bigger than those aged 50-60 years.

Over 50% of women and 45% of men over the age of 50 do physiological osteoporosis, older women have a 50% higher risk than men make a fracture.

**Aim of the study.** To establish the correlation between trochanteric fractures and osteoporosis, as well as the implant that will be necessary to be used for the surgical treatment of these fractures.

**Materials and methods.** In this study were included 34 patients with trochanteric fractures, 14 men and 20 women hospitalized in the 2nd Department at the Clinical Hospital of Orthopaedics

and Traumatology from January 2015 to December 2015. All patients were treated surgically, with age average of 67 years, the youngest was 46 and the oldest was 85 years old.

**Results.** The study was based on 34 medical cases. The types of implants or endoprostheses used in the treatment of trochanteric fractures were: total cemented hip prosthesis Zimmer in 4 patients, blade-plate 95° - 14 patients, 2 cases fixed with DHS (dynamic hip screw), another 2 cases with PFN (proximal femoral nail) and cemented unipolar Austin-Moore prosthesis in 12 cases. In patients with high degree of osteoporosis with total or unipolar cemented prosthesis, were mobilized in second day after surgery, they had no sitting or lying difficulties and maximum in 6 days after surgery they start to walk with pressure on lower limb as soon as the painful postoperative syndrome was solved. In patients operated with blade-plate, DHS or PFN with better bone quality mobilization in the bed was done in the second day after surgery and in the first week after surgery they start to walk in crutches without pressure on the operated limb.

**Conclusions.** Surgical treatment of trochanteric fractures remains the basic method of treatment complications of bed immobilization. Hip replacement is a successful procedure for the elderly, over 75 years with osteoporosis and comorbidities, being life saving, because it makes possible to accelerate patients mobilization and movement, therefore maximized the patients functional outcomes.

**Key words:** trochanteric fractures; hip arthroplasty; proximal femoral nail; osteoporosis.

#### **194. PERIPHERAL NERVE INJURY OF THE FOREARM: ETIOLOGY AND LESIONAL COMPLEXITY ASPECTS**

Authors: **Natalia Cucos, Panciuc Alina**

Scientific adviser: Grigore Verega, MD, PhD, Professor, Department of Traumatology and Orthopedics

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**Introduction.** Peripheral nerve disorders comprise a gamut of problems that significantly affect patient function and quality of life. Peripheral nerves are structures that suffer injuries similar to those seen in other tissues, resulting in important motor and sensory disabilities. It is estimated that the incidence of traumatic lesions is as high as 500.000 cases per year in some countries, where 2,8% of the patients become permanently disabled due to prolonged nerve regeneration time (Noble et al., 1998; Rodrigues et al., 2004)

**Aim of the study.** Identification and examination of etiology and lesional complexity aspects in peripheral nerve injuries of forearm, as well as their independent contribution to obtained results after repair.

**Materials and methods.** A retrospective study of 200 patients surgically treated during the period 2014-2016 in our clinic. From total amount of patients, 81% (162) were men and 19% (38) women. Age limits were between 17 and 83 years. Most frequently was affected ulnar nerve, being injured in 56% cases (112 patients). Lesion of median nerve was in 36.5 % cases (73 patients) and radial nerve - in 7.5% cases (15 patients).

**Results.** In study group, the most frequently lesional mechanisms were by cutting in 78 % cases and traction or contusion in 22 % cases. Therewith was established that in 96% cases were associated a muscular or tendon injury, in 31.4% cases – open fractures of forearm bones and vascular lesions - in 48.6 % cases.

**Conclusions.** In open injuries of the forearm the ulnar nerve is the most frequently injured, being often accompanied by damage of tendons and vessels. Complexity of trauma has a negative influence on primary survey, recovery and restoration of work capacities.

**Key-words:** nerve, injury, forearm

## **195. SURGICAL TREATMENT OF FRACTURE-DISLOCATIONS OF THE FOREARM**

Authors: **Vasile Botezatu, Stefan Cojocari**

Scientific adviser: Ion Vacarciuc, MD, PhD, Associate Professor, Department of Traumatology and Orthopedics

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**Introduction.** Unstable fracture-dislocations of the forearm are Monteggia and Galeazzi lesions. Monteggia fractures account for approximately 1% to 2% and Galeazzi fractures account for approximately 7% of all forearm fractures. Distal forearm fractures are far more frequent than midshaft forearm fractures, which occur in about 1 to 10 per 10,000 people per year. One in four radial shaft fractures is a true Galeazzi injuries.

**Aim of the study.** To make a retrospective study (follow up of two years) of fracture-dislocations of the forearm according to data from medical records, type surgery method used in stabilization of Monteggia and Galeazzi lesions.

**Materials and methods.** A retrospective study was performed on patients with fracture, dislocation, fracture-dislocations of the forearm, Monteggia(M) and Galeazzi(G) lesions which consecutively were treated in department of Hand Pathology with the application of microsurgical techniques (6 Section) of Traumatology and Orthopedics Clinical Hospital, Chisinau in the period 2015-2016.

**Results.** A total of 24 patients was analyzed. The gender ration was 1:1, with a predomination a population from rural zone 7:1. According to age, the study group was assigned as follows: <35 years 7 (29.2%), 36 - 49 years 7 (29.2%), 50 - 65 years 8 (33.3%), 66 - 75 years 2 (8.3%). The fractures had the following distribution: ulnar and radial shaft - 7(29.2%) each. The dislocation of the elbow joint were 7 (29.2%). The fracture-dislocations of the forearm were 3 (12.5%), of which the G was in 2, M in 1. Lesion management was in 100% surgical. At the fracture of ulnar shaft (7 cases) were open reduction internal fixation (ORIF) of the fracture with AO plate. In radial shaft fracture (7 cases) ORIF of the fracture with AO plate was used and in one case with radial shaft bone fragmentation (14.2%) intramedullary osteosynthesis with K-wire with external fixation in Ilizarov apparatus was performed. In case of forearm dislocation, closed reduction was performed (one patient); the open reduction was in the other 6 cases with K-wire arthrolysis (KwA). In the case of the M - ORIF of the fracture with AO plate and the open reduction of radial head and with KwA. In the case of the G - ORIF of the fracture with AO plate and with KwA of the distal radioulnar joint.

**Conclusions.** Monteggia and Galeazzi lesions are rare nosology in orthopedics surgery with the highest incidence occurring people after 35 years. ORIF with plating of the ulnar or radial shaft fractures are the most used method of stabilization.

**Key words:** unstable fracture-dislocations, Monteggia and Galeazzi lesions, fracture fixation

## **DEPARTMENT OF PLASTIC AND RECONSTRUCTIVE MICROSURGERY**

## **196. RECONSTRUCTION OF THE AVULSED THUMB WITH NONMICROSURGICAL TECHNIQUES – FUNCTIONAL AND AESTHETIC RESULTS**

Authors: **Petru Ciobanu, Daniela Botez, Alina Stan**

Scientific adviser: Mihaela Perlea, MD, PhD, Associate professor

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2. *Grigore T. Popa* University of Medicine and Pharmacy, Iasi, Romania



**Introduction.** The thumb accounts for almost 50% of hand function, the pulp having a major role in ensuring it. Avulsed injuries lead to disability, so preserving length, position, mobility, sensitivity of the thumb are main goals that must be fulfilled for the techniques used in reconstruction of the thumb and its pulp.

**Aim of the study.** To evaluate the outcomes of the reconstruction in the emergency of the amputated thumb using isolated or associated homodigital and heterodigital flap techniques in those situations when microsurgical replantation is not possible due to local or general conditions. The study is based on the evaluation of the functional (thumb length, sensitivity, motility active joint movement and cortical reintegration) and aesthetic outcomes.

**Materials and methods.** Twenty-eight patients aged between 18 and 65 years old, with complete posttraumatic amputation of the thumb at the level of interphalangeal joint or proximal phalanx were evaluated. The aim of reconstruction was to achieve a thumb of proper length, good sensitivity, motility and cortical reintegration of the new pulp. In 6 cases, the reconstruction was done using the Mantero-Bertolotti technique with an O'Brien flap, and in 6 cases the use of a single heterodigital neurovascular Littler flap was sufficient. The association of the two techniques with a Littler's flap instead of the O'Brien flap in the Mantero-Bertolotti reconstruction was the choice in 14 patients. In other 2 cases the reconstruction algorithm included the use of a Foucher (cerf-volant), Simonetta or Hueston flap.

**Results.** The results have been evaluated based on age, injury complexity, size of the flap, mobility, sensitivity, cortical reintegration of the new pulp. The best average range of motion of the new thumb in those cases in which we applied the associated technique (Littler's flap instead of the O'Brien flap in the Mantero-Bertolotti reconstruction) using Kapandji score (8 score). Regarding the sensibility, we achieved a protective sensibility of the new thumb. At the two point discrimination test (2PD test), the results were between 7 – 11 mm. At the light touch deep pressure test (SW test), all the patients felt the blue monofilament and 24 out of 30 felt the violet monofilament.

**Conclusions.** The use of isolated or combined homodigital and heterodigital, flap techniques is a proper choice for reconstructing the avulsed thumb in those cases when the microsurgical replantation is not possible. The microsurgical replantation remains the gold standard in thumb amputation.

**Key words:** thumb, amputation, flap

## 197. RECONSTRUCTION OF POSTEXCISIONAL DEFECTS FOR PERIOCCULAR GIANT CARCINOMA

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**Introduction.** The giant basal cell carcinoma is a rare skin malignity, representing only 1% of the basal cell carcinomas. The giant type is defined as the lesion which exceeds 5 cm in diameter. The disease is reported generally in persons in their seventh decade of life, patients with various other pathologies. The excisions within oncological limit lead to large soft tissue defects which, if localized at the periocular region, become a real challenge for the surgeon that has to choose a surgical technique for the reconstruction.

**Aim of the study.** To show some technical solutions to cover soft tissue defects from the periocular level left after excision for giant carcinomas and their results.

**Materials and methods.** The study includes 9 patients, 8 male and one woman, age between 60 to 85 years, with a history of carcinomatous lesions in evolution from 7 to 12 years. All the lesions have dimensions between 5 and 7.5 cm, located in four cases in the external angle of the right eye, two at the upper eyelid and the external angle of the left eye, and, in one case, in the labellar region with extension at both eyes. In all of the 8 cases the intervention consisted in complete excision (with oncological limit restriction) and covering with regional flaps (in 3 cases Mustarde flap, in 3 cases association of frontal flaps and in 3 cases genian advancement flap, from which, one anchored in the zygomatic bone). All the reconstructive surgical interventions were performed in one operative time, only in two cases it was necessary the reintervention after three months for the sectioning of the conjunctival flap (for the eye protection). In all 8 cases the nodular form of the basal cell carcinoma was observed.

**Results.** The immediate postoperative evolution was good, without flap vascularisation problems. Long term evolution was good, with full reintegration of the flaps and a pleasant esthetic result. No recurrences were registered 18 months after the intervention.

**Conclusions.** The giant basal cell carcinoma, a rare form of disease, is most often diagnosed at advanced ages. On the face, excision determines the presence of large soft tissue defect. Sometimes the reconstruction represented a real challenge for the surgeon.

**Key words:** carcinoma, flap, soft tissue defect

## DEPARTMENT OF ANESTHESIOLOGY AND CRITICAL CARE MEDICINE no.2

### 198. THE PARTICULARITIES OF THE MANAGEMENT IN PATIENTS WITH ASYMPTOMATIC AORTIC ANEURYSM ADMITTED AS EMERGENCY

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Scientific adviser: Alice Balaceanu, MD, PhD, Associate professor

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**Introduction.** Asymptomatic aortic aneurysm is one of the most important factor of morbidity and mortality in patients older than 50 years.

**Aim of the study.** To assess the particularities of the management in patients with aortic aneurysm and other comorbidities admitted as emergency in a clinical hospital.

**Materials and methods.** The retrospective study was performed on a group of 43 patients with aortic aneurysm admitted between June 2015 and October 2017.

**Results.** The patients included in the study were aged between 53 and 94 years, average age 73 years. Gender distribution: 30.23% female and 69.76% male. 72.09% of aneurysm were located on the abdominal aorta, 23.25% on ascending thoracic aorta, 11.62% on descending thoracic aorta. 6.9% of patients had multiple aortic aneurysms. Hypertension being the most common cardiovascular comorbidity, the most prescribed drugs were diuretics, beta-blockers, and conversion enzyme inhibitors. 69.76% of patients were treated with diuretic (37.20% with a loop diuretic, 13.95% with thiazide diuretic, 18.60% with a combination of diuretics). 58.13% received a betablocker. Only 30.23% of patients received the conversion enzyme inhibitor, the most common non-cardiovascular comorbidity being chronic kidney disease, found in 95.34% of cases. 41.86% of patients received platelet antiaggregant, 6.97% dual antiplatelet therapy, 18.60% oral anticoagulant and 11.62% antiplatelet therapy and oral anticoagulants. 30.23% received hypolipidemic medication and 11.62% received antidiabetic drugs. Broad spectrum antibiotics were prescribed in 39.53% of cases and bronchodilators in 34.88%, respiratory failure and infections being common comorbidities in these patients.

**Conclusions.** Chronic kidney disease as a common comorbidity in patients with asymptomatic aortic aneurysm indicates appropriate antihypertensive medication.

**Key words:** aneurysm, hypertension.

## 199. ACUTE KIDNEY INJURY FOLLOWING CARDIOPULMONARY BYPASS IN CHILDREN

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**Introduction.** Acute kidney injury (AKI) is the most common and most serious complication following heart surgery.

**Aim of the study.** To determine the prevalence of, and risk factors for, AKI following pediatric cardiac surgery.

**Materials and methods.** We retrospectively analyzed 203 patients aged  $\leq 18$  years who underwent cardiac surgery for congenital heart defects; by RACHS-1 category, 41 patients (43%) had an operative risk score  $\geq 3$ . AKI was defined and classified using the pediatric pRIFLE criteria (Pediatric Risk, Injury, Failure, Loss, and End-stage Kidney Disease).

**Results.** 58 patients (28.6%) developed AKI: 40 had AKI with a severity classified as risk (R), 14 had AKI classified as injury (I) and 4 had AKI classified as injury (F). RACHS-1 (Risk-Adjusted classification for Congenital Heart Surgery) category, fluid administration as well as fluid overload were compared between patients with and without AKI. Longer cardiopulmonary bypass (CPB) time ( $P=0.03$ ) and vasoactive-inotropic score ( $P=0.0002$ ) were independent risk factors for AKI. Fluid overload and intraoperative lactate level was not a significant predictor for AKI. Higher pRIFLE classification positively correlated with increased postoperative mechanical ventilation duration, and longer ICU stay ( $P=0.01$ ).

**Conclusions.** In this study, we found a higher prevalence of postoperative AKI in pediatric patients undergoing severe cardiac surgery. AKI was associated with worse early postoperative outcomes. Early prediction and appropriate treatment of AKI during the postoperative period are emphasized.

**Key words:** kidney injury, cardiopulmonary bypass

## 200. IMPACT ON MORTALITY OF RESPIRATORY EVENTS AND VENTILATION ASSOCIATED PNEUMONIA, RETROSPECTIVE DESCRIPTIVE PILOT STUDY

Authors: **Anna Plahotniuc, Arsenii Cernacovschi , Stoica Natalia**

Scientific adviser: Belii Adrian, MD, PhD, Professor, Department of Anesthesiology and Critical Care Medicine no.2

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**Introduction.** Ventilator-associated pneumonia (VAP) remains a dangerous source of morbidity, mortality and it is associated with increased duration of ventilation, intensive care unit (ICU) stay, hospital stay, and cost for healthcare. Clinical pulmonary infection score (CPIS) can be utilized tentatively to determination VAP, to start early treatment and avert mortality. Prospectively accumulated data was retrospectively analyzed from Emergency Institute database HIPOCRATE of hospitalized ICU patients over a year time frame.

**Aim of the study.** The objective of this study is (1) to assess the potential competency of a screening test based on the CPIS to identify and treat patients with VAP; (2) to evaluate risk factors and outcomes associated with VAP.

**Materials and methods.** A retrospective descriptive study was performed including 108 patients supported by mechanical ventilation for more than 48 hours between 18 and 80 years old admitted to the ICU in Emergency Institute. Statistic information of the patients, the duration of

mechanical ventilation, length of the ICU stay and results (survival or death) were analyzed. The CPIS was calculated after 48 hours for the diagnosis of VAP. The patients with CPIS >5 intubated were assessed VAP+ and the others with CPIS ≤5 were evaluated VAP-. Statistics: t-Student, Fisher exact test.

**Results.** VAP (77.77%), deceased (87.77%), VAP identified using CPIS (score >5. 67.77%), reintubated patients (6.66%), the duration of mechanical ventilation and proportion of death were essentially higher in the patients with VAP+. CPIS levels were also higher in the patients with VAP+. The parameters, which included the CPIS, body temperature, leukocyte number, tracheal secretions, and the presence of infiltrates on the chest radiograph, were significantly higher in VAP+ patients.

**Conclusions.** The results of our research demonstrate that (1) utilizing the CPIS for early diagnosis and treatment of VAP and considering that the patients with CPIS >5 were VAP+ are managing elements to determine the issues related with VAP in ICU patients and at the meantime can confine superfluous antibiotic use. (2) VAP+ patients have longer stay-period, longer duration of mechanical ventilation, and increased risk for mortality, that recommend that the risk factors (reintubation, use of stress ulcer prophylactics and transportation) causing VAP ought to be known by medical staff, and that patient care should be handled accordingly.

**Key words:** VAP, CPIS, ICU, mechanical ventilation

## **PUBLIC HEALTH**

### **201. EVALUATING THE RISK OF MEDICAL CARE ASSOCIATED INFECTION THROUGH RAPID SELF-CONTROL TESTS**

Authors: **Cristian Vintilă**, Chiș Horațiu Gabriel, Suciu Emil Nicolae, Turcu Denisa Gabriela, Sabou Laurențiu

Scientific adviser: Septimiu Voidăzan, associate professor, MD, PhD  
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**Introduction.** Infection prevention and control in medical care facilities are designed to prevent the spread of infection and ensure a safe environment for patients and health workers.

**Aim of the study.** To determine the risk of infection for the patients or medical staff according to the grade of contamination of the surfaces frequently touched by them.

**Materials and methods.** We relied on running rapid auto-control tests on surfaces that are frequently touched by patients and staff, and calculating the risk of infection based on the degree of contamination of these surfaces.

**Results.** We performed 48 tests: 22.91% on surgical departments and 77.08% on medical units. Of the total number of tests performed the 27.08% had values above the admitted limit. The majority of the abnormal tests were detected in surgical departments.

**Conclusions.** Rapid auto-control tests are quick option to indicate the grade of contamination of the surfaces frequently touched by medical staff and patients. Test results can be used for correction of the procedures of the surface cleansing and disinfection.

**Key words:** infection prevention, medical staff, rapid tests, surface contamination

### **202. THE EVALUATION OF SPORT INJURIES AND MEDICAL RECOVERY METHODS BASED ON THE SPORT AND ITS LEVEL OF PRACTICE**

Autors: **Nicolae Stanciu**, Ilinca Cezara Vișan, Cristian Vintilă, Sasu Radu Cristian, Horatiu Chis

Scientific adviser: Prof. MD. PhD. Klara Brînzaniuc  
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**Introduction.** Sports injuries may occur when engaging physical activity due to over-training, lack of conditioning, improper form, technique or equipment.

**Aim of the study.** To explore if practicing a sport changes predisposition of encountering one or another type of trauma. Seek for a link between the number of training hours/week or the amount of training years and the presence/absence of injuries. Finding which medical specialty has higher effect on sustaining the physical effort recovery.

**Material and methods.** Cross-sectional study including a convenience sample of 62 voluntary students from the Physical Education and Sport Specialty of the University of Medicine and Pharmacy from Tîrgu Mureş and a number of 79 diagnostics. A questionnaire was administrated and statistical analysis was performed using Microsoft Excel and MedCalc 18.2.1 using a 0.05 level of significance.

**Results.** There was no statistically significant association found between the environment of origin or practicing sports (football, basketball, handball, volleyball, tennis, table tennis, bodybuilding, parkour and free running) and any type of injury,  $p > 0.05$ , as well as there was no statistically significant difference between age and the presence or absence of any kind of trauma,  $p > 0.05$ . No significant statistic association was found, between practicing any type of sport (contact vs. non-contact, individual vs. team game, amateur vs professional) and the presence of sport injuries,  $p > 0.05$ . Another result in regards to the training hours/week or the amount of training years, we couldn't find any statistically significant difference between them and the presence/absence of sport injuries,  $p > 0.05$ . Furthermore, although there wasn't any statistically significant association between physiotherapy and effort recovery,  $p > 0.05$ , we found a statistically significant association between orthopedic treatment and the recovery of exercise capacity,  $p < 0.0001$ . Another important result would be that there is a statistically significant association between being treated in the public system and the effort recovery,  $p < 0.0001$ .

**Conclusions.** Our athletes' sport injuries are not determined by either any sport in particular, from the ones we mentioned above, neither by the training hours/week or the amount of years of training. A very important factor in maintaining a good performance state is having a short recovery time. That would be possible if athletes would first consult an orthopedic doctor in order to have a good recovery plan.

**Key words:** sports injury, physical effort, recovery, athletes

### 203. EVALUATION OF NUTRITION HARMLESSNESS IN RÎŞCANI DISTRICT

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**Introduction.** The people's health mainly depends on living conditions, including the quality and safety of food. Thus, producers and food service providers, directly or indirectly involved in the food chain, must provide safe products according with consumers expectations, European regulations and National legislation. In order to maintain the quality and safety of food chain, there are necessary regulations for determination of food quality and monitoring procedures to ensure that the whole process is carried out in good condition.

**Aim of the study.** To evaluate the sanitary-hygienic indicators harmlessness of food products in Rîşcani district during 2011-2015.

**Materials and methods.** We conducted a retrospective study of laboratory tests of food samples at the Public Health Center in Rîşcani district during the last 5 years, 2011-2015, using laboratory and instrumental methods approved by the Public Health Center laboratories. Food samples were taken in Rîşcani district. In order to assess their safety, the data analyzed were: the sanitary-microbiological indicators, the pesticide content, and the sanitary-hygienic indicators. Food

samples, also, were researched according to the following sanitary - microbiological indicators: the number of aerobic mesophilic germs and optionally anaerobic bacteria(NGMAFA), B.coliforme, E. coli, B. cereus, S. aureus, pathogenic Enterobacteria, P. aeruginosa, B. acidolactic, Enterococi, and others.

**Results.** We have examined 4174 samples tested for 15023 indicators. In 2015, out of 2,188 indicators, only 20 were inappropriate (0,91%), the most harmless year. In 2011 was established the highest proportion of inadequate samples, 1.31% (45 out of 3430 indicators). The most frequent bacteria determined in food samples were NGMAFA, established in 54 samples out of 146 (36.98%). The highest number of NGMAFA bacteria were determined in 2012, and the most favorable year was 2011. More frequent deviations in NGMAFA indicators were established in the following food products: milk and dairy products, meat and meat products, poultry and poultry products, eggs and others. The second most frequent bacteria determined was B. Coliform with 52 samples infected out of 146(35.61%), and the third place was S. Aureus with 36 samples infected out of 146( 24.65%).

**Conclusions.** During 2011-2015 there was a decrease in food samples deviations according with sanitary-hygienic indicators in Rîșcani district.

**Key words:** nutrition, safety, food samples, sanitary- microbiological indicators

#### **204. THE EXPERTISE OF DISABILITY AND OCCUPATIONAL MORBIDITY IN WORKING-AGE PEOPLE**

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**Introduction.** The occupational morbidity and disability are acute problems of society, being a major reason of work capacity reduction. According to WHO, more than 1 billion people in the world suffer from disability. More than 184 thousand people with disabilities are registered in Republic of Moldova. People with disabilities are 2-3 times less employed than others. They face with discrimination and social integration problems. This situation can be fixed through mutual exertion of society and state institutions.

**Aim of the study.** Study of occupational morbidity and disability expertise on working-age people.

**Materials and methods.** The bibliographic, mathematical, statistical, sociological and analytical methods have been applied. A cross-sectional, qualitative descriptive study has been done and there was organized an anonymous questionnaire of doctors from Councils of Disability and Work Capacity Determination on expertise methodology of work capacity loss in economically active population. The investigation data was processed with IBM SPSS Statistic 20 and Word-Excel programs. Parametric and non-parametric validity tests (p, t, DS, x<sup>2</sup>) were applied.

**Results.** In the qualitative descriptive study, 30 expert doctors were interviewed, which is the total number of doctors from 9 councils in Chisinau.  $14.43 \pm 0.99$  people (DS = 5.45) are examined per day. 24 (80.0%) interviewed doctors responded that they had never attended courses on occupational health. During the last year, 9 (30.0%) doctors suspected cases of occupational diseases in examined persons. The average number of suspected occupational diseases in the past year is  $7.0 \pm 1.51$  cases (DS - 4.27). Expert doctors appreciated the cooperation with Republican Center for Occupational Diseases as follows: 23.3% (7) - good; 6.3% (2) - satisfactory; 3,3% (1) - unsatisfactory; 66.7% (20) - nonexistent. Counseling of examined people on professional rehabilitation is informally accomplished by expert doctors. Only 22 (73.3%) doctors responded that they counseled people on professional rehabilitation.

**Conclusions.** In Republic of Moldova, there are high reserves in the notification, diagnosis and investigation of occupational diseases cases at all levels. There is a need to start a ministry

program to improve disability determination services and occupational diseases surveillance, to involve all structures, starting with primary and specialized health care, Councils of Disability and Work Capacity Determination and Republican Center for Occupational Diseases. It is also necessary to revise legislation in the field, to create manuals on work capacity expertise and occupational diseases diagnosis for physicians, expert doctors etc.

**Key words:** disability, work capacity, occupational diseases

## **205. THE LEVEL OF COMPLIANCE WITH SANITARY-HYGIENIC NORMS IN PUBLIC TRANSPORT**

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**Introduction.** The large number of people concentrated in the urban area of our country leads to complexity of traffic congestion therefore creating non hygienic micro-environments for each vehicle of public transport in use. As a result some of the main problems become: poor air quality, dirty surfaces, lack of individual space and a great probability of catching an airborne disease (Meningitis, Chicken pox, Tuberculosis (TB), Influenza, Whooping Cough). But, is there any regulation that monitors this problem and what is the attitude of the population towards the existing situation? In the past 6 years (2010 – 2016), the indices of passengers turnover in the public transport increased by 27%. Also, the statistics offered by the National Bureau of Statistics (BNS) show a growth in the total number of transported passengers.

**Aim of the study.** To evaluate the level of compliance with sanitary-hygienic norms in public transport, to create a detailed picture of the current situation in the Republic of Moldova, and evaluate the connection between poor medical-sanitary services in public vehicles and an increased number of airborne diseases. Also, this research allows us to identify the gaps in existing regulations and come up with proposals and adjustments in a legal context.

**Materials and methods.** The study is only focused on the public transport provided within the capital of Moldova. In order to find out about the awareness of the direct beneficiaries and their attitude towards the current existing situation, a questionnaire was created. The questionnaire was administered in the form of an online survey to public transport users from Chisinau.

**Results.** A total number of 135 responses were received. 30 % of all the people use the services of public transport more than 15 times per week. 32 % of the survey participants think the public transport units do not respect the hygienic norms at all, and 56% have avoided using a unit of public transport because of hygienic reasons the main reason being the lack of cleanliness in the transport unit. The study shows that the current state of the hygiene in public transport units in Moldova is bad and the direct beneficiaries are not pleased with the compliance with sanitary – hygienic norms in vehicles.

**Conclusions.** A primary objective of the Government of the Republic of Moldova should be developing regulations on public transportation infection control that involve technologies of decontamination for drivers, operators and that help maintain safe and clean environments for the transportation industry. The number of public transport units might be increased and the old vehicles should be excluded from use in traffic. The population should also be informed more about good hygiene practices through diverse activities in order to educate a set of values that help in preventing the spreading of airborne diseases.

**Key words:** public transport, sanitary hygienic norms

## **206. EFFECTS OF METEOSENSITIVITY ON HEALTH**

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**Introduction.** Once the weather changes more and more people complain on their health status. At the same time others are not affected at all. Meteosensitivity is a reaction of the human body to weather changes. It can be physiological or pathological. The first one it is a normal adaptation to new conditions; when the pathological causes a deterioration of mental and/or physical health. Under the influence of air temperature, atmospheric pressure, air humidity and the movement of air masses, appear following symptoms: tiredness, drowsiness, headache, dyspnea, vertigo, irritability, palpitations, anxiety, joint pain and appear remission cycles of chronic diseases.

**Aim of the study.** It is meteosensitivity a real disease or an imagination? What is meteosensitivity and meteo resistance? How youth reacts to weather changes?

**Materials and methods.** The materials used for this study: 1. The book "Meteosensibility" by Svetlana Dubrovsciaia; 2. The scientific article "From physiological to pathological meteosensitivity"; 3. Various web sites. Methods: 1. Survey of views; 2. Questionnaire about meteosensitivity and the symptoms on the weather changes.

**Results.** Studies show that 46% of people polled are sometimes sensitive at weather changes; 22% are certainly meteosensitives, and around 23% don't think that they are sensitives. About symptoms, 22% of persons are sleepy, 18% - complain of headache, and 60% have other symptoms. Also, in 29% of cases, all symptoms appear when it's raining, in 28%- at atmosphere pressure variations, and in 17%- when the temperature changes.

**Conclusion.** The fact that around 70% of persons polled are between 15 and 25 years old, and they also confirmed the symptoms, means that meteosensitivity affects not only elders. Also, I confirmed that there are meteosensitives and meteo-resistant; and the former confirmed the symptoms described.

**Key words:** meteosensitivity, health, symptoms, weather

## 207. NEW ASPECTS IN THE ASSESSMENT OF BIOLOGICAL AGE

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**Introduction.** Biological age is an integral indicator of the individual human health level that characterizes the functional, regulatory and adaptation features of man. However, two people of the same age range differ greatly from the biological age due to the degradation of several physiological functions. The issue of biological age is the key to studying the influence on changes in the body at all stages of individual development from birth to death, united by the term ontogenesis. Biological age provides an estimate of individual age status.

**Materials and methods.** Among people of the same chronological age, there are usually great differences in the age-changing tempo. The difference between chronological and biological age, which allows the appreciation of an individual's aging intensity, is very high in various stages of the aging process. The highest speeds in age changes are seen in longevity people, younger ones are insignificant. Therefore, to determine biological age makes sense only to people older than 30 years or even 35 years. In auxology, different systems of biological age appreciation which correspond to the listed requirements, are applied. So called skeletal age, dental age, sexual development, morphological development, physiological, and mental maturity, and others.

**Results.** An increase in aging rate in younger and middle-aged individuals was observed compared to older people, which corresponds to the modern demographic trend of rejuvenating mortality from several causes. Taking into account the lack of significant difference in age in



male and female subjects of different age groups, we were given the opportunity to evaluate gender differences in dynamic age of the biological age. It accelerates the rapid aging of men at young age, especially when reaching average age.

**Conclusions.** Chronological and biological age of people observed lodged between on the study conducted it was found an increase in speed of aging in people of young and average age in comparison with people, which corresponds to the demographic trend of modern rejuvenation of mortality.

**Key words:** biological age, indicator

## 208. AN INTEGRAL INDEX FOR EVALUATING THE OCCUPATIONAL ENVIRONMENT

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**Introduction.** One of the difficulties in the modern hygienic evaluation is studying the multitude factors of occupational environment. A standard environment does not give rise to any problems, but for a dynamic environment a feasibility study should be carried out, because sometimes in some sections of time a factor may exceed the allowed limit, but its action is not harmful because other factors of occupational environment are far from this limit.

**Aim of the study.** From a groundless point, the occupational environment is composed of several factors that are a part of more groups of factors and indicators that can be assessed by the different regulatory frameworks. Based on the given rules 89/654/CEE and FRR 2.2.2006-05; RNI 2.2.4.548 -96 or on each component of the occupational environment from the normative documents for each factor as for example Noise, Lighting, Temperature, Humidity, Vibration, ultrasound, Infrasound, actual temperature, CO<sub>2</sub>, CO, and others.

**Materials and methods.** In the hygiene-based literature (Ким Дж, Мьюллер Ч. У., Клекка У. Р. 1989) lies the idea of creating the so-called "integral Indicator for evaluating the occupational environment" (ИЕАО) that he believes should be determined after a canonical relation of a discriminant type, and constitutes a multiple unidimensional parameter that represents the action of factors that determine the occupational environment.  $ИЕАО = -30,87 + 0,19 \text{ Noise} + 0,24 \text{ Vibration} + 0,006 \text{ Infrasound} + 0,0065 \text{ C.U.}$  This indicator characterizes the total action of the harmful factors of the environment. The value of this indicator changes depending on the intensity of the action of these factors, in other words the higher the action of the factors the lower the total value of the indicator for the occupational environment is, but if the negative action decreases and the occupational environment becomes more comfortable for the activity- the value of the following indicator increases and can be classified according to the sanitary regulation in three groups (Bobrov A. F., Mironica I. N., 1998).

**Results.** Basically, if the indicators of different occupational environment parameters differ a lot, then the multiplicity of results can be analyzed by the deviation method through Sigma which shows an effective average of the given fact. We have tested the working environment of the Chisinau municipal public transport drivers and through 70 complex measurements of all activity environment factors we have concluded that the work in the given branch is in class III-B, according to the rules 2.2.4.548 -96 RNI.

**Conclusions.** The sample should be widened up to 150 evaluated cars under the statistical control formula. It has also been discovered the need to carry out wider measurements, namely to perform the calculation at smaller intervals throughout the year in all seasons, and at every hour of activity.

**Key words:** public transportation, occupational environment, hygiene, factors

## 209. EVALUATION OF THE EFFICIENCY AND EFFICACY OF HOSPITAL DIAGNOSIS AND TREATMENT PROTOCOLS

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Scientific adviser: Voidazan T., Associate Professor MD, PhD, Septimiu, University of Medicine and Pharmacy, Targu-Mures, Romania

**Introduction.** The working protocol is a guidance document that contains a set of instructions on which decisions are made on the clinical management of a disease. It is the standard required to guarantee the quality of the medical practice, it allows the medical act to be evaluated in order to fund it, including in relation to the skills and overspecialization of doctors and is a reference tool in assessing possible malpractice accusations.

**Aim of the study.** Aim of the study. was to compare the efficacy and efficiency indicators from March 2017 with those from March 2018 to assess hospital medical activities after improving the protocols.

**Materials and methods.** The medical activities for which work protocols have been developed were evaluated by two types of indicators: efficacy and efficiency indicators. These indicators were extracted from the hospital's computer system and comparative relationships can be established regarding the number of cases that have developed acute complications, the number of deaths or the related direct average costs.

**Results.** In March 2017 (2016 reporting) and March 2018 (2017 reporting), 149 protocols were evaluated. 94 (63%) of them came from medical departments. For 2016, 20.040 continuous hospitalizations were based on developed protocols, 1332 (6.6%) of them developed an acute complication, 616 (3%) developed 2 acute complications and 532 (2.6%) reported deaths. For the year 2017, 21.140 continuous hospitalizations were based on elaborate protocols, of which 1226 (5.7%) developed an acute complication, 507 (2.3%) developed 2 acute complications and 525 (2.4%) reported deaths.

**Conclusions.** Based on the analysis of the data we can conclude that following the improvement of the diagnostic and treatment protocols, the number of acute complications and the number of deaths decreased even the number of hospitalizations increased from one year to the next one.

**Key words:** protocols, indicators, efficacy, efficiency

## 210. EVALUATION OF IODINE CONTENT IN IODIZED SALT IN THE ASSORTMENT OF SALT IN THE CHISINAU FOOD STORES

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**Introduction.** Iodine is a trace element, essential in the synthesis of thyroid hormones. Iodine deficiency affects about two billion people and is the leading preventable cause of intellectual disabilities. From 30 to 20 mg of iodine that exist in the adult human body, 8-10 mg are concentrated in the thyroid gland, which has a special need for this element. It is considered that optimal quantity of iodine is about 100-200 µg daily. Recommendations are between 40 and 50 µg for infants up to 12 months, 70 - 90 µg for children up to seven years, 120 - 150 µg for students. In areas where there is little iodine in the diet, iodine deficiency gives rise to hypothyroidism. An efficient prophylaxis of endemic dystrophy is administration of iodized salt. The addition of iodine to table salt has largely eliminated this problem in the wealthier countries and served as a method of prophylaxis of endemic goiter. For iodine loss prevention, salt must be pure, kept in cool dry spaces and used only within the validity period.

**Aim of the study.** To perform the analysis of salt assortment in the food-market networks and assess the iodine content as well as content loss over time in different types of kitchen salt.

**Materials and methods.** We conducted the market analysis of the salt assortment present in the food shop networks in Chisinau. The assortment is presented by 27 types of kitchen salt, of which 7 are expensive. From the remaining 20 types, only 6 are iodized. Under laboratory conditions, using ionometry and spectrophotometry, we tested these 6 types of iodine salt for real iodine presence. The experience has been repeated over 15 days to see the dynamic stability of iodine in salt, and over the next 2 years, the experience has been repeated every 6 months to see the changes that have occurred.

**Results.** In most salt samples tested, iodine concentration was determined within the normal range, except for one type of salt imported from the European Union, with a 19,42 mg/kg concentration at first test and 17,96 mg/kg after 15 days, which proves an instability of the iodine compounds and a concentration below the initial limit. Otherwise, was determined the elimination of the iodine compounds from 1 to 4 percent in 15 days from the initial concentration at the opening of the pack and during the 6 months, the percentage reached 10% of the initial concentration.

**Conclusion.** In the Republic of Moldova, most of the salt on the market is non-iodized. Iodized salt in the Republic of Moldova corresponds to the iodine load of 83% of the total volume marketed in municipal food shop networks. It is recommended to use iodized salt with commercial brand exchange for prevention of deficient iodine state.

**Key words:** salt, iodine, endemic goiter, prevention.

## **211. HYGIENIC ANALYSIS OF ALIMENTARY INTOXICATIONS AND ACUTE DIARRY DISEASES CAUSED BY FOOD IN RISCANI RAY**

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**Introduction.** Alimentary intoxications results from the use of food contaminated with pathogenic or contaminated microorganisms with toxic or non-microbial toxic substances.

**Aim of the study.** The hygienic evaluation of alimentary intoxication in Rîșcani district during a 5-year period and the elaboration of measures to prevent them.

**Materials and methods.** A retrospective study on dietary intoxications and acute diarrheal diseases in Rîșcani district was performed over a 5-year period (2012-2016). The main foods incriminated, the causes of the outbreak, the conditions that favored illnesses, the factors and the ways of transmission were established.

**Results.** Morbidity through food poisoning and acute diarrheal diseases in the Rîșcani district during the period 2012-2016 remains high, constituting an average of 341 cases annually, the morbidity index showing a periodic increase and decrease. Thus the maximum level was recorded in 2012 with 348 cases per 100 thousand populations, and the minimum - in 2016 with 295 cases 100 thousand population. Studying the etiological structure, we found that the vast majority are caused by Salmonella - making up 53%, Escherichia coli - 18% and Staphylococcus aureus - 18%, the others having a small share. It was found that 63% of all said outbreaks took place at home and only 37% in organized collectives. During this period, 718 cases of food intoxication and acute diarrheal diseases were recorded with 1525 affected persons. During the study period, cases of botulism were not recorded. Of the total number of food intoxications, 7 people suffered as a result of the consumption of poisonous fungi. The analysis of the multiannual dynamics of morbidity by food poisoning and acute diarrheal disease has shown that the morbidity index is decreasing, but is still lower in 2016 (372.4% 000 cases) and higher in 2012 (542.6% 000 cases) (19%) and Klebsiella (17%), other microorganisms (Enterobacter, St.

Aureus, Escherichia, Erwinia, Enterococcus and Pseudomonas) with a lower weight. The main incriminated foods were culinary products, milk and dairy products and fish and fish products.

**Conclusions.** In Râșcani district food poisoning and acute diarrheal diseases remain a current problem because they are recorded annually. In 63% of cases, maladies broke home and only 37% in organized communities. This speaks of improving the hygienic surveillance of food objectives in recent years, but also of the need to promote health among the population.

**Key words:** food, alimentary intoxications, acute diarrheal diseases

## 212. THE IMPACT OF FOOD SUPPLEMENTS ON THE HUMAN BODY

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**Introduction.** We are aware of the fact that the human organism requires daily consumption of food, which gives it a certain amount of energy and trephines. We can provide the human organism with various nutrients: proteins, lipids, carbohydrates, and vitamins. The elements consist of about 70-80 simple compounds: amino acids 23-25, fatty acids 20, mineral elements 15-20, vitamins 12-13 (M. Barnea, Al. Calciu, 1979).

**Aim of the study.** Currently, the population confront with serious problems related to influence of toxic substances on the products quality and their influence on the human health. The lack of material resources and lack of knowledge about healthy nutrition in the Republic of Moldova lead to consumption of products containing food supplements.

**Materials and methods.** At present time, there is a very high aversion to the use of food additives, and are explained by the negative effects of uncontrolled use of chemical agents in the foodstuffs. According to Codex Alimentarius, we can state according to International (as well as to national) specification lists, the additives are divided into 25 categories: coloring agents (E100-E182); preserving agents; antioxidants; emulsifying agents; melting salts etc. Additives cause allergies, manifested by rash, limbs swelling itching as asthma skin, in the case of the sick persons.

**Results.** The allergies effects are: itchy nose, sneezing, heavy breathing, anaphylactic shock. For example, E-123 is a coloring agent causing eczema, asthma, ADHD syndrome, some forms of cancer. In the Republic of Moldova, the prevalence of allergic rhinitis according to the official statistical data of the National Center for Health Management is also in increase. Statistics show that in 2015, 934 cases of allergic rhinitis were among the children under the age of 18, out of whom 698 were new illnesses. The number of dermatitis was 11,911 cases, out of which 11,358 are new cases. Compared to 2011, allergic rhinitis was nearly 360 less, and dermatosis - of 1,711 more. A patient suffering from an allergic disease must be aware of the precautionary measures and the measures as a matter of urgency. The test required to detect allergic diseases is anamnesis, There are also various tests used to identify allergens: nonspecific tests, specific skin test (patch test, prick test).

**Conclusions.** However, the action of all substances is rather various and has a directly or indirectly influence on the human organism (through primary influence on food). Typically, these are chronic intoxications, and various slow evolution diseases. Thus, we can say that we do not have to consume food products containing trephines, but only healthy foodstuffs that will help to our body growth and its development.

**Key words:** supplements, allergies, coloring agents

## 213. SLEEP AND CIRCADIAN RHYTHM DISRUPTION IN SHIFT WORK

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**Introduction.** Circadian rhythm is one of the most important mechanisms in human body, which coordinates biological rhythms with the environmental changes in the day-night cycle. People are diurnal species, so we are used to work during the day and to sleep during the night. Sleep and Circadian Rhythm Disruption (SCRD) occurs when natural circadian rhythms are pushed out of synchronization, for example in shift work.

**Aim of the study.** Define the mechanistic links between sleep and circadian rhythm disruption and hyperglycemia. Apply this knowledge for the development of evidence-based clinical interventions. Transfer this knowledge to the broader community, patients and caregivers.

**Materials and methods.** This study was based on physiological, biological and laboratory investigations, that were used to determine respiratory frequency, heartbeat frequency, muscular strength, tremor, blood and liver tests.

**Results.** It was established that shift-workers have increased level of glucose in blood.

**Conclusions.** Sleep and Circadian Rhythm Disruption in shift work leads to hyperglycemia, that can induce diabetes mellitus.

**Key words:** circadian rhythm, disruption, shift work, hyperglycemia

## 214. HYGIENIC EVALUATION OF REAL FOOD AND NUTRITION OF STUDENTS

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**Introduction.** Health of the younger generation is a priority for any state. Thus, reforms in the higher education system emphasize the students' health status and physiological needs during the learning process.

**Materials and methods.** The study was conducted by questioning 50 students, including 11 men and 39 women, from study years I to VI. The questionnaire included 18 questions about daily nutrition.

**Results.** Nutrition is provided by a varied assortment of foods, providing the human body with nutrients and biologically active substances (proteins, lipids, carbohydrates, vitamins and mineral salts). The results of this study showed that 90% of students have an irregular diet and only 10% of them strictly follow a diet. Using the waist and body mass parameters of people in the study, we calculated BMI, which found that 80% of the examined subjects are normal weight, 6% are underweight, 8% overweight, and grade I obesity was reported in 6%. Analyzing student food surveys, we can see that most commonly used in vegetables in the daily diet are potato, carrot, onion and cabbage, and the least used are broccoli. If we are talking about the prevalence of fruit in the nutrition of the students, we notice that the most used fruits are apples, bananas and oranges, and the rest of the fruits are used at a lower percentage, the least used to be quince, plum and pear. Similarly, following the study I noticed that 54% of investigators prefer to eat spicy food, 46% prefer salty food. The share of people who love to eat sweet produce was 52% and the share of those who love fatty foods accounted for 8%.

**Conclusions.** The results of this study show that 80% of people are normal weight and 90% of them do not have a healthy diet, which requires us to develop measures to improve the nutrition of students in university institutions.

**Key words:** nutrition, students, body mass index, health

## 215. ASSESSMENT OF THE PHYSICAL ACTIVITY AND NUTRITION OF THE SECOND YEAR STUDENTS OF NICOLAE TESTEMITANU SUMP<sub>h</sub>

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**Introduction.** Sedentariness annually kills more than 5.3 million people worldwide, representing 10% of the total deaths reported worldwide. Sedentariness and unbalanced diet is also common among students. These in turn brings various negative consequences on the health of the young adult such as metabolic and cardiovascular dysfunctions but also obesity, depression, etc.

**Aim of the study.** This study aims to evaluate the nutrition and daily activities of the 2nd year students. The aim of the study is to provide students with the general picture of the activity and the nutrition habits, serving as a reason for encouraging lifestyle improvement.

**Materials and methods.** In order to achieve the aim of the present research, 50 students of the 2nd year, aged between 20 and 24 years, were questioned. The questionnaire included grid questions with one and several variants of responses, matrix type questions and open questions regarding the physical activities and diet.

**Results.** Following the questionnaire, it was found that 80% of students do not follow a diet, 23% of them eat fast food every week and every 3rd student consumes sweets every day. Even if the most important meal of the day is lunch, 30% of students are used to eat after 10 pm. Liquid consumption is in 50% of cases - 1-1.5L. Analyzing the physical activity, it was found that 63% of students practice light physical activities only once a week, in 66% of cases the students spend their free time by reading, listening music or using the PC or tablet. Even though, 76% of the students would be motivated to change their lifestyle, 52% of them affirm that they are discouraged by the lack of time and 26% - by laziness.

**Conclusions.** About 6 out of 10 students with unbalanced diet and reduced physical activity may develop complications such as cardiovascular diseases, obesity, depression, etc. Thus, to raise awareness and prevent the occurrence and development of such diseases among students, a set of measures is needed to be taken both students, society, mass media, NGOs, etc.

**Key words:** student, regime, activity

## 216. THE STRATEGIES OF STRESS REACTION AMONG TEACHERS

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**Introduction.** According to the recent studies stress is a dangerous factor that affects teachers and the people who interact with them. Every day a teacher is forced to deal with negative situations that can be confronted through different methods: overcoming, avoiding, mitigating the effects and assumption.

**Aim of the study.** Emphasizing the strategies of stress reaction(answer) among teachers.

**Materials and methods.** This study was realized with 53 teachers, using a questionnaire composed of 4 standardized tests. Here we present the results of one test “The Ways of Coping Questionnaire” (Folkman and Lazarus), with open access for users), validated in our study with coefficient Cronbach alpha=0.846.

**Results.** Overcoming all stressful situation can be realized through 8 coping strategies have been proposed by Lazarus. The pilot study in assessing the aspect of stress at the teachers highlighting that 89% of them have a medium potential of adaptation. However, from 53 teachers-6(11%) can deal with stressful situation due to a high potential of adaptation, where we can remark that

teacher with higher education exceed stress easier at early age. The most used strategies to confront stress is- planful problem solving (75%). The most common of them are: self-controlling (45%), seeking social support (53%), accepting responsibility (45%). The teachers with aged between 50 and more also apply positive reappraisal. According to work experience in feature of strategies we notice that teachers with the didactic experience less 1 year – apply first of all seeking social support, between 2-5 years often use accepting responsibility and planful problem solving, 6-10 and 11-20 years- planful problem solving, self-controlling, those with 20 years and more work experience use planful problem solving, seeking social support.

**Conclusions.** A large number of teachers (88.7%) manifest a tensional coping. That is way, it is necessary to research this problem on a large lot of teachers.

**Key words:** stress, teachers, coping

## **217. HEALTHCARE PERSONNEL COMPLIANCE IN THE PREVENTION OF HEALTHCARE-ASSOCIATED INFECTIONS**

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Scientific adviser: Associated Professor Md. PhD. Voidăzan Septimiu  
University of Medicine and Pharmacy of Targu-Mures, Romania

**Introduction.** The rate of healthcare-associated infections is an indicator of the quality and safety of the patient, and their prevention and reduction is one of the main objectives at a global level.

**Aim of the study.** To assess the level of information and application of information on healthcare associated infections among healthcare professionals.

**Materials and methods.** Knowledge testing was made by filling an anonymous form mainly by nurses from different hospitals in Romania. The 32 form questions included the following topics: the importance of healthcare-associated infections, prevention and protection measures among medical staff, hand hygiene and transmission of pathogens inside hospitals

**Results.** From a total of 152 respondents, 133 of them were nurses (87.5%), 132 were female (86.8%), 20 male (13.2%), aged between 22 and 57 years, an average of 36 years and an average work experience of 12.8 years. 62 participants (40.8%) considered that they had a good level of knowledge on healthcare-associated infections, but only 57 (37.5%) correctly marked the times when handwashing was needed and 40 (26.3%) of the respondents considered that lack of hygiene and non-compliance with disinfection rules are two of the main causes of healthcare-associated infections emergence.

**Conclusions.** The level of knowledge about healthcare associated infections is quite low. Repeated training, periodic assessments of the level of knowledge, increased accountability and the implementation of cleaning, disinfection and sterilization protocols are required.

**Key words:** nosocomial, prevention, form, hygiene

## **218. MUSCULOSKELETAL DISORDERS AMONG DENTAL PROFESSIONALS**

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**Introduction.** Dental professionals often develop musculoskeletal disorders, which are related to sub-optimal work-environment ergonomics that might be responsible for improper sitting

postures and movements causing unnecessary musculoskeletal loading, discomfort, and fatigue. Occupational diseases have not only physical, psychological, and social consequences, but also economic and security impacts when they reach a level of severity that directly affects work capacity, causing absences and premature retirement.

**Aim of study.** The aim of this study was to determine the prevalence and risk factors of musculoskeletal disorders among dental professionals.

**Materials and methods.** A self-developed questionnaire was distributed to 82 dental workers to collect information about musculoskeletal disorders symptoms and relevant factors. Their working posture was studied through the ergonomic method REBA.

**Results.** The research sample was formed by 66.7% general dentistry and 33.3% dental surgery. From the questioned workers, 95.12% complained about at least one specific MSDs symptom and 4.87% of them complained about all the symptoms listed in the questionnaire (upper limb, throat, back and legs, general fatigue). Muscle and joint pain manifestations in hands present 70.70% of the dental workers, 68.30% - in the neck, 58.50% - in the shoulders. Four out of ten dentists suffered pain in the neck and shoulder region for more than a year, and every second of them suffers from hand pain for several years. Fortunately, most dental professionals characterize their pain as an intermittent one and only two out of ten as a permanent but bearable one. According to the ergonomic REBA method, 7.30% of staff and are at medium risk of MSDs and their workplace requires changes, 41.50% - a high level of MSDs risk and the workplace design needs to be adapted to the worker as soon as possible, and 51.2% of those observed are at a very high risk, in these cases the improvement of the design of the workplace and the furniture/equipment must be carried out urgently.

**Conclusions.** The physical load, including vicious posture, among dentists puts them at risk for the occurrence of musculoskeletal disorders. An ergonomic intervention is needed to decrease the prevalence of work-related musculoskeletal disorders among dental professionals.

**Key-words:** dental professionals, musculoskeletal disorders, ergonomics, REBA.

## 219. THE MUNICIPAL PUBLIC TRANSPORT MICROCLIMATE IN CHIȘINĂU

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Scientific adviser: Garbuz Alexandru, MD, University assistant, Department of General Hygiene *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** At the moment, public transport in Chișinău has a very important role, especially trolleybuses. Every day around 300 units are circulating in Chisinau carrying about 50 thousand passengers.

**Aim of the study.** The problem of the working conditions of drivers and passengers in transport is insufficiently studied.

**Materials and methods.** We measured the microclimate parameters in the trolleybuses from Chișinău with the device Meteoscope M, basic indicators such as air temperature and relative humidity, the current velocity being considered constant 0.1 m / s, according to the norms. Three sets of measurements were performed in order to record the transition from autumn to winter which included 40 electric cars per day, and then the Sigma method was used in order to analyze the statistical average of the measurements. The quality index of the microclimate was evaluated, namely the Actual Temperature. Then these results were compared with the regulatory framework in the given domain.

**Results.** We compared the results of the Actual Temperature with European regulatory framework nomograms in the field of occupational health and environmental health (89/654/EEC and FRR 2.2.2006-05; RNI 2.2.4.548 -96) and we determined that the actual



temperature exceeded the minimum required in 2 cases. In October the index of actual temperature falls within the normal range, and in December and February it doesn't reach the normal minimum 18 ° C.

**Conclusions.** This fact speaks about very cold working conditions during the cold season of the year, and as a result one might experience different diseases of the respiratory, urinary or cardiovascular system and many more. It is recommended that the worker wear warm clothing, work breaks, the organization of a special diet.

**Key words:** microclimate, working conditions, actual temperature, trolleybuses, public health.

## 220. MICROCLIMATE STATUS IN CITY HOSPITALS

Authors: **Angelica Nazarciuc, Mahajna Fahmi Kamal**

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**Introduction.** The room microclimate is determined by the temperature and air humidity, air currents. All the factors microclimate acts both combined and concurrently on the human body. So, microclimate acts over the thermal comfort (TC). According to the British BS EN standard ISO 7730, TC is "condition of the mental state that expresses satisfaction with the surrounding environment". In the hospital there is a constant flow of people who are influenced by the inside of the microclimate. Legg (1971) has suggested that there are four categories of ward user to be considered. First, there are patients who are involved in a minimum activity. Secondly, there are the nursing and medical staff who carry out a little physical exertion. Thirdly, domestic staff who do a lot of physical work. Finally, are visitors and staff from other hospital who are only in the ward for a short time. The deviation of the microclimate indicators will influence all categories of people working inside the wards. At 21 °C, the influenza virus is least likely to survive between 40%- 60%rh. Bacteria will have a decreased growth rate at less than 25%rh but will have higher growth at 90%rh or above. Mold is most likely to reproduce at a rapid rate over 60%rh. Between 30%- 50%rh is ideal for controlling and reducing mold growth. Relative humidity can either hinder or help propagate infectious agents like viruses and bacteria. It can affect the spread of other irritants like mold that can trigger allergic reactions and asthma attacks.

**Aim of the study.** Determination of the microclimate status in the city hospitals.

**Materials and methods.** Microclimate assessment is performed on the basis of sanitary and hygienic norms. For maintaining a favorable microclimate in a hospital wards, have been elaborated „Regulament sanitar privind conditiile de igiena pentru institutiile medico-sanitare” HG nr. 663 from 23 July 2010. Compliance of these sanitary-hygienic conditions contributes to maintaining a thermal comfort of the patients in the different wards.

**Results.** According to HG nr. 663 from 23 July 2010 „Regulament sanitar privind conditiile de igiena pentru institutiile medico-sanitare”, Chapter 6 provides requirements for heating, ventilation, microclimate and room air quality. Paragraphs 148 provides „The heating, ventilation and air conditioning system must ensure optimal microclimate conditions and proper chemical component of the indoor air.” Paragraphs 149” The temperature, the multiple of the air exchange will correspond to the indications established by the sanitary regulations.” Paragraphs 155 provides „water in central heating systems is used with a maximum temperature in convectors of 85 °C.” Paragraphs 168 provides” The relative humidity of the air will not exceed 60%, the velocity of the air movement - 0.15 m / sec”.

**Conclusions.** The monitoring of the microclimatic regime in the hospital wards will be carried out.

**Key words:** hospital, microclimate, hygienic norms, monitoring

## 221. NOISE POLLUTION OF THE WORKING ENVIRONMENT OF EMPLOYEES IN PUBLIC TRANSPORT

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**Introduction.** The sound is a physical that stimulates the sense of hearing. It occurs due to the vibration of a sound source, propagates as elastic waves and has three physical characteristics: frequency, amplitude and complexity. The noise represents a complex sound, a mix of many different frequencies or notes that are not harmonically linked. Because of the fact that hearing organs are in full connection with the central nervous system, different types of noise can affect any body tissue, any cell or intracellular formation and can cause various forms of illness. In this way, the employees who are daily exposed to noise are at a high risk of developing various diseases that are not limited to hearing organ- the noise affects the nervous system, the cardiovascular system, reproductive function. Its action can cause insomnia, fatigue, aggression and contributes to serious mental disorders. All this make the sound pollution to be a big problem that alters the working conditions of public transport workers and requires us to study the phenomenon in order to identify useful solutions and implement them.

**Aim of the study.** To determine the main cause of the noise pollution in the cabin of the public transport.

**Materials and methods.** For general noise measurement we used the sound meter Ekofizika-110A. The measurements were made both in the driver's cab and in stations at the same time on the trolleybus route 22, in order to compare the noise level inside and outside of the transport mean.

**Results.** We conducted two sets of measurements and have got the following results: (Station/ Time/ Level (dB) outside/ Level (dB) in the cabin) Grădina Botanică/11.10/70/68; Valea Crucii/11.20/69/68; Str. Burebista/11.36/72/72; Bd Cuza Vodă/11.53/72/68; Bd Decebal/12.04/76/69; Str. Zelinski/12.15/74/67; Spitalul Municipal Nr 1/12.20/75/68; UNIC/12.35/84/80; PMAN/12.45/89/85; USMF/12.55/85/83; Str. Aldea-Teodorovici/13.05/80/80; Str. Ion Pelivan/13.20/75/79; Șos. Balcani/13.35/83/80. Conclusion: As we can notice in most cases the noise level outside of the cabin is higher than the one inside or they are almost equal. In this way, we can consider that the main cause of the noise pollution in the trolleybus is the noise from other transport means, especially it is easy to observe it on the crowded parts of the route. However the noise in the cabin is still at a high level even on the sections with few transport units. It is clear that one of the problems is also the state of the transport unit. In conclusion, we can say that solving the problem of noise pollution in public transport can be accomplished by streamlining city traffic and replacing used transport units.

**Key words:** exercise environment, noise, public transport, exposure, level

## DEPARTMENT OF SOCIAL MEDICINE

### 222. THE MEDICAL AND SOCIAL ISSUES OF ABORTION AT YOUNG AGE

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**Introduction.** Over the past decades, the human reproductive health has been worsen worldwide, with negative reflection on future generations. The destabilization of the medical-

social and economic balance in the Republic of Moldova generates negative trends in birth rates. Abortion is one of the main methods of birth rate, the ratio of first upon the second is 0.9: 1.

**Aim of the study.** Abortion is a powerful psychotrauma factor, which may end for the woman involved-with neurosis.

**Materials and methods.** For the purpose of this study have been analysed 30 sources of literature. The theme was studied from both, the statistical and the theoretical perspectives. The theoretical perspective aimed at analyzing, synthesizing and generalizing information from the literature on the concept of "abortion", the medical-social issues, the level of anxiety depending on the method used. The statistical outlook included the analysis of the data collection process about abortion worldwide and national; analyzing the relationship between the legalized and criminal abortions, the medical-social aspects, but also the frequency of the information collection and its actuality.

**Results.** In a study of 89 young women, divided into two groups, the first (22 patients) made up of women who demanded medical abortion with prescriptions, the second group (67 patients) was constituted by the women who requested a surgical discontinuation of the pregnancy, analyzing it, it was found that in the first lot the level of anxiety was lower than in the second lot (52.55% had an average anxiety, 37% had high anxiety, and only 10.45 - low anxiety). In the group of women requiring medical abortion, 41.91% of them had average anxiety and 39.91- low anxiety and only 18.18% high anxiety. According to another WHO analysis in 2000, around 50 million abortions occurred worldwide, of which 30 million were legalized and 20 million were not legal. About 7% of them were made in Europe. According to statistical data, in the world, there are 38 abortions per 1,000 women aged 15-40 years old. Annually, global birth rates are 140 million, about one pregnancy out of four ends with abortion, including miscarriages.

**Conclusions.** Abortion, regardless of the method performed, is a powerful psychotrauma factor, which may end for the woman involved-with neurosis. With the help of the psychodiagnostic analysis, from the medical and social point of view, it was proved that the medical abortion has a less negative aspect than the surgical one. In our days, the abortion os more frequently in the young women.

**Keywords:** abortion, medical-social issues

## **223. THE ARGUMENTATION OF THE NEW CONCEPT OF REFORMING THE MEDICAL EXPERTISE OF VITALITY SERVICE**

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**Introduction.** The estimated current number of disabled people in the Republic of Moldova is about 184 500 people, and represents about 5,2% of the whole population, including 12 900 children aged between 0-17 years old, that is considered 1,9% of the total number of children in the country.

**Aim of the study.** The aim of this study was to analyze different aspects of the existing medical expertise of vitality service and develop a new concept of the reforming service of work capacity based on the socio-professional and educational integration of people with disabilities.

**Materials and methods.** The data analysis was cross-sectional. This method has been applied according to the qualitative representativeness, which got veridical information of the existing phenomena in the field of the application of disability degree assessment methods, before and after the reform, based on the most valid evidence. The representative sample consisted of 383 people with disabilities.

**Results.** After having analyzed the existing medical expertise of vitality service we managed to: develop a new methodology of determining the disability; point out the advantages and disadvantages of the medical expertise of vitality service; set out the bio-psycho-social sample of work incapacity (adults); develop the strategic concept of modernization and efficacy of the medical expertise of vitality service in the Republic of Moldova.

**Conclusions.** These results will allow us to improve the medical, social and professional rehabilitation services provided to the disabled people for enrolling them in the working field and active social life.

**Key words:** medical expertise of vitality, disability, work capacity, functional deficiencies, rehabilitation, psychological and pedagogical services

## **224. OCCUPATIONAL DISEASE RISK FACTORS DETERMINATION IN PRIMARY CARE PHYSICIANS**

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**Introduction.** Millions of people around the world work in unsafe conditions, due to which the number of people affected by the occupational diseases is constantly increasing. Annually about 1,1 million people become victims of the occupational diseases and work accidents, while another 60 million cases are being newly recorded.

**Aim of the study.** Assessing medical staff from the primary care institutions in the rural areas and developing a set of measures that would ensure a safe working environment for the workforce.

**Materials and methods.** For setting out the objectives, a comprehensive study was carried out which included: the study of morbidity and the socio-economic and psychological factors of the medical staff. The study group included 387 physicians from the primary health care institutions.

**Results.** This study helped us reveal what were the main risk factors that the medical workforce was put at, the incidence of each being as follows: tiredness - 36,2%; depression - 32 %; stress - 29,4%; irritability - 15,2%; anxiety - 11,4%. These results helped us establish a new set of measures that would ensure a safer working environment for the staff of the primary care health institutions from Orhei and Hîncești.

**Conclusions.** This study allowed us to elaborate a new set of measures that will reduce the aforementioned occupational risk factors incidence and will consequently serve as occupational disease prophylaxis in the medical staff from the primary health care institutions.

**Key words:** health, medical staff, primary care institutions

## **225. EMIGRATION OF MEDICAL GRADUATES FROM THE REPUBLIC OF MOLDOVA: CAUSES, RISKS AND SOLUTIONS**

Author: **Dorin Spînu**

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**Introduction.** The shortage of doctors threatens healthcare systems all around the world. The insufficiency of doctors in developed countries like the USA, Canada and the UK and the gradient of working conditions, salary and quality of life between the developing and developed countries represent the driving force for the international migration of medical doctors. This

process worsens the already existing shortage of doctors in many developing countries. It is the case of the Republic Moldova. We studied the attitudes of students and graduates from Nicolae Testemițanu State University of Medicine and Pharmacy (SMPPhU) to emigration.

**Aim of the study.** To evaluate the attitudes of medical students and graduates toward the perspective of starting the medical career at home or to emigrate.

**Materials and methods.** A retrospective study was conducted. We analyzed data from the Computing Center of SUMPh on the results of admission to the residency during 2012-2017. We also surveyed the students of SUMPh from years I, III and VI.

**Results.** The rate of those who continued their studies in the Republic of Moldova is decreasing. In 2017, only 2 out of 3 SUMPh graduates chose to continue their studies in the home country, in comparison with 2016, when only 1 in 5 graduates did not continue the studies home. The rate of medical students who want to emigrate is highest among the 6th year (75%) compared to 1st year students, where only 68% want to emigrate. The main cited reasons for leaving are a higher wages better work conditions, better life conditions and the possibility of professional development.

**Conclusions.** In order to avoid a future doctors' crisis in the Republic of Moldova specific measures must be implemented to keep the medical graduates working within their home country. The students ask for a guaranteed well-paid job and adequate equipment of the work place.

**Key words:** emigration, residents, students

## 226. THE MEDICAL AND SOCIAL ASPECTS OF COLORECTAL CANCER

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**Introduction.** Colon cancer is a major health problem due to its consequences on social, economic, ecological and geographical aspects. Last decades it becomes one of the main cause of premature mortality, increased morbidity and disability.

**Aim of the study.** To evaluate the particularities of colorectal cancer and of the medical and social aspects of this phenomenon.

**Materials and methods.** We performed a retrospective study on a group of patients with colorectal neoplasia, who were investigated and treated in the oncological proctology department of the Institute of Oncology between January and December 2016. The study included primarily diagnosed cases before or after surgical intervention. Data on the main risk factors, demography and tumor location have been collected from medical records.

**Results.** The main medical and social aspects of 645 subjects included in the study were analyzed. Analysis by gender revealed the predominance of males, 356 (55.2%) versus female, 289 (44.8%). The proportion of patient diagnosed with cancer is increasing with age: up to 49 years-59 (9.1%) patients; 50-59 years-152 (23.5%) patients; 60-69 years-283 (44%) patients; over 70- 151 (23.4%) patients. Most of the patients originate from urban area, 330 versus 315 from rural one. The main location of the tumor is colon - 386 (59.8%), followed by rectum - 216 (33.5%) and recto sigmoid junction - 43 (6.7%) of cases. Colon / rectal cancer ratio = 1.8 / 1. Prevalence of the risk factors among the patients was: by BMI: 240 (37.2%) were overweight, and 109 (16.9%) were obese; by tobacco consumption status: 192 (29.8%) were smokers and 453 (70.2%) were non-smokers; by alcohol consumption: 106 (16.4%) never consumed alcohol and 498 (6.3%) were consuming alcohol occasionally - 498 (77.3%), daily- 41 (6.3%). Nine out of 10 patients - 591 (91.63%) had no a family history of colorectal cancer, 24 (3.72%) – had relatives of degree I, and 30 (4.65%) had relatives of degree II-III affected by cancer.

**Conclusions.** The proportion of patients with cancer is increasing with age. The larger number of urban patients is probably due to the higher accessibility to health care in comparison with rural areas. Colon located tumors are prevalent compared to other locations. Being overweight or obese and alcohol consumption increase the risk for colorectal cancer confirming the results of other studies.

**Key words:** colorectal cancer, study, risk factors

## FUNDAMENTAL SCIENCES

### MORPHOPATHOLOGY

#### 227. PERITONEAL AND RETROPERITONEAL LESIONS: PRELIMINARY RESULTS

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University of Medicine and Pharmacy of Tirgu Mures, Romania

**Introduction.** Lesions of the peritoneal and retroperitoneal cavities are heterogeneous and include vascular disorders, inflammations and tumors.

**Aim of the study:** To present the preliminary results regarding the types of peritoneal and retroperitoneal lesions.

**Material and methods.** The clinicopathological aspects were examined in all consecutive cases diagnosed in 2015 at Department of Pathology of Clinical County Emergency Hospital of Tirgu Mures, Romania.

**Results.** From the 672 cases, 491 were diagnosed with peritonitis, 125 with tumor lesions, 54 with vascular disorders and two patients presented hydatidic cysts. Out of 125 tumors, 116 were metastatic (92.80%) and 9 (7.20%) were diagnosed as primary tumors. In 19 out of 125 tumors, ascites was associated. Metastases were predominantly diagnosed in women (n = 69; 59.48%) with a median age of 64.17±13.05 years, whereas peritonitis mostly affected the male gender (n=281; 57.23%) with a median age of 39.53±26.54 years.

**Conclusion.** The type of peritoneal and retroperitoneal lesions are related to the patients' gender: peritonitis is more frequent in males, whereas metastases predominantly affects females in their pre-menopausal or menopausal period. Ascites does not always occur in patients with peritoneal carcinomatosis.

**Key words:** peritonitis, carcinomatosis, hydatidic cyst, retroperitoneum

#### 228. ANATOMICAL FEATURES OF COMPLETE MYOCARDIAL BRIDGES AND ITS ROLE IN SUDDEN DEATH OCCURRENCE

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**Introduction.** Complete myocardial bridges (CMB) are myocardial strips covering a portion of the underpericardial coronary artery on one or more of its parts. Thick myocardial bridges are considered to have a specific role in heart emergencies occurrence: the myocardial infarction and sudden death in young people with clean coronary vessels after physical exercises.

**Aim of the study.** To distinguish different anatomical features of CMB and their possible involvement in the ischemic heart disease.

**Material and methods.** 300 formalized human hearts were studied by fine anatomical dissection method at macroscopic, macro-microscopic (stained with Schiff reagent) and microscopic (stained with hematoxylin-eosin and picrofuxin by van Gieson method) levels.

**Results.** CMB were found in 62.5% cases. Most frequently CMB cover the anterior interventricular branch, followed by the diagonal branches of both ventricles, first marginal branch and posterior interventricular branch. The width of about 1/3 of complete myocardial bridges (34%) was about 10-19 mm, in 25% of cases its width was 20-29 mm, in 18% of dissected hearts the width of CMB was 1-9 mm and only in 4% of cases wide bridges, up to 70 mm, were found on anterior interventricular branch. Macro-microscopic and microscopic study revealed deformation and narrowing of the vessel under the bridge what could have an important role in heart ischemic sufferings and sudden death. Microscopic investigation of the under-bridge segment indicates that the direction of the myocardial fibers varies. While in thin myocardial bridges the direction of the myocardial fibers is similar to the first myocardial layer, in thick bridges, especially those located above the anterior interventricular branch, myocardial fibers surround the vessel and have the helicoidally orientation, forming a myocardial tunnel around the vessel.

**Conclusions.** The degree of systolic compression of the coronary vessel by myocardial bridge depends on many factors: the topography of the bridge, its thickness, width and muscle-conjunctive composition, muscle's fibers orientation, the diameter of the involved vessel and its deepness, the association of some myocardial bridges on the same vessel, presence of atherosclerosis. Systolic compression of coronary vessels by myocardial bridges may cause sudden death in young, healthy persons.

**Key words:** complete myocardial bridges, myocardial infarction, sudden death

## 229. CARDIAC MANIFESTATIONS IN TYPE 2 MYOCARDIAL INFARCTION

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**Introduction.** Type 2 myocardial infarction (T2MI) happens secondary to ischemia due to an imbalance between myocardial oxygen supply and demand. Causes are usually different from a plaque rupture (for example: anemia, coronary spasm, tachycardia, hypertension, hypotension). This categorization is used since 2012, but, limited data is available regarding patients profiles.

**Aim of the study.** To analyze the literature and to describe the clinical characteristics of the patients.

**Materials and methods.** We conducted an electronic search in ScienceDirect and PubMed using the words "type 2" or "type II", "myocardial infarction" and "characteristics" and "manifestations", date limited from 2008 when first definition was introduced.

**Results.** The main findings of this study confirm the difficulty in the differential diagnosis between patients with T2MI and T1MI, still, the symptoms of T2MI differs from those of T1MI. Atypical chest pain is the most frequent manifestation of T2MI. Among the most often clinical findings were symptoms like dyspnea, syncope, arrhythmias. When comparing the groups, patients with T2MI had higher cardiac rhythm. Furthermore, rales, leg edema and cardiomegaly on radiography were more common. Moreover, it was related that T2MI can be related more with pulmonary congestions. They also tend to be older, majority female.

**Conclusions.** Type 2 MI is more comune in older, females and in patients with multiple comorbidities. The most frequent manifestations is atypical chest pain.

**Key words:** myocardial infarction, type II, characteristics

### 230. RELATIONSHIP BETWEEN CLINICAL STAGES AND DISTRIBUTION OF NEUROFIBRILLARY TANGLES IN ALZHEIMER'S DISEASE

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**Introduction.** Clinical signs can suggest the diagnosis of Alzheimer's disease and can help in choosing the tactics of later diagnosis and treatment, usually it can be rendered with a degree of probability, because the definitive diagnosis is established by post-mortem cerebral biopsy.

**Aim of the study.** In this paper, we aim to analyze the literature and to make a synthesis of the clinical signs and distribution of neurofibrillary tangles which can provide data about the severity of the Alzheimer's disease. The main purpose is to identify the clinical signs in each microscopic stages of Alzheimer disease.

**Materials and methods.** Literature sources were accessed via Scencedirect by a search on the terms "Stageing of Alzheimer" and "Neurofibrillary tangles".

**Results.** The literature study has identified 3 clinical stages and 6 microscopic stages, which were combined for practical reasons, these stages are: (transentorhinal 1 and 2), (limbic 3 and 4) (isocortical 5 and 6). Transentorhinal stage represents the preclinical phase of disease, Limbic stage the incipient phase, and Isocortical stage, the presence of dementia.

**Conclusions.** Each clinical stage of Alzheimer's disease has its microscopic equivalent, therefore, in establishing the presumptive diagnosis of Alzheimer's disease using the NINCDS-ADRDA criteria, the clinician may assume the degree of distribution of neurofibrillary tangles and affected areas, which will dictate the diagnostic, treatment and prognostic approach.

**Key words:** Alzheimer's disease, neurofibrillary tangles, microscopic stages, clinical stages

### 231. ROLE OF MATRIX METALLOPROTEINASES IN ANGIOGENESIS AND PROGRESSION OF ATHEROSCLEROTIC PLAQUE

Author: **Ana-Iulia Pîrțu**

Scientific adviser: Elena Portnoi, MD, University assistant, Department of Morphopathology

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**Introduction.** Atherosclerosis is a chronic disease characterized by multifocal structural alterations of the vascular wall of medium and large arteries, leading to the accumulation of cholesterol and continuous inflammation. Inflammatory angiogenesis in atherosclerotic lesions plays a major role in plaque progression and instability.

**Aim of the study.** The review examines the role of the MMPs in plaque angiogenesis, destabilization, and its relation to inflammation.

**Materials and methods.** Informational support for the development of this review is based on current international journals, including more than 50 references in English and Russian languages.

**Results.** It is firmly established that extracellular proteolysis mediated by MMPs is an absolute requirement for angiogenesis. MMPs released by inflammatory cells, are implicated in the sprouting phase, including basement membrane degradation and cell migration/ECM invasion. The neovascularization prevents cellular death due to better supply of O<sub>2</sub> and nutrients. But simultaneously allows lipid core expansion, leukocyte influx, plaque growth and destabilization due to the compromised structural integrity of imature vessels (discontinuous basement membrane, low number of tight junctions between the ECs, lack in pericyte coverage)highly susceptible to intraplaque hemorrhage. In atherosclerotic plaques, MMPs not only induce the



sprouting of neovessels but also can provoke net destruction of collagen in the shoulder regions of fibro-atheromas and thus contribute to the weakening of the fibrous cap and precipitate transition to an unstable lesion, plaque rupture, leading to myocardial infarctions or strokes. Furthermore, specific MMPs have been shown to enhance angiogenesis by releasing ECM-bound angiogenic growth factors.

**Conclusions.** By providing pathological angiogenesis MMPs may induce plaque growth, maintenance or destabilizing of the atherosclerotic plaque.

**Key words:** atherosclerosis, angiogenesis, matrix metalloproteinases

## 232. STUDY OF THE EPITHELIO-MESENCHYMAL TRANSITION PROCESS IN THE PATHOGENESIS OF GASTROINTESTINAL TRACT ENDOMETRIOSIS

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**Introduction.** Epithelial – mesenchymal transition (EMT) endows cells with migratory and invasive properties, a prerequisite for the establishment of endometriotic lesions. The role EMT might play in the pathophysiology of endometriosis is still unknown. Therefore, we examined four markers for EMT in endometrium and endometriosis: E – cadherin + Vimentin, double reactions and simple reactions Twist and N – cadherin.

**Aim of the study.** The role EMT in the pathophysiology of endometriosis.

**Materials and methods.** During a period of five years (2012 – 2017) we analyzed 7 cases of gastrointestinal tract endometriosis: appendix (1case), colon (5 cases), ileum (1case). The material was processed according to the classic histological technique by inclusion in paraffin. The 3 µm sections obtained were stained with Hematoxylin – Eosin and Masson's trichrome stains. Another sections were dewaxed, rehydrated and processed for immunohistochemistry using as primary antibodies monoclonal antibodies Vimentin and mouse monoclonal antibody N – cadherin, E – cadherin, Twist.

**Results.** Immunohistochemically, we aimed to change the immunophenotype from epithelial to mesenchyme in gastrointestinal endometriosis by analyzing the most important markers of the transition process. In endometriosis and endometrium E – cadherin, Vimentin, N – cadherin and Twist were expressed on protein level. Investigation of E – cadherin / Vimentin coexpression revealed a decrease in E – cadherin reactivity at the site of invasion of gastrointestinal endometriosis with an increase in reactivity to Vimentin together with the increase of the invasion pattern and the increase of the stage of the disease respectively. Twist transcription factor immunoreaction revealed a highly positive expression on the mesenchymal lineage, proving involvement of this transcriptional factor in the invasion process of gastrointestinal endometriosis. N – cadherin was positive in the endometrial glands, showing their differentiation into a mesenchymal phenotype and their migratory potential.

**Conclusion:** The results of our study confirm involvement of the epithelial – mesenchymal transition process in the pathogenesis.

**Key words:** endometriosis, gastrointestinal tract, mesenchymal transition

## DEPARTMENT OF PHARMACOLOGY AND CLINICAL PHARMACOLOGY

### 233. THE DEVELOPMENT OF ANTIBIOTIC RESISTANT BACTERIA IN HOSPITALS

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**Introduction.** Bacterial resistance to antibiotics is a complex phenomenon that defines the ability of microorganisms to survive and multiply in the presence of an antibiotic. This natural process for bacteria threatens to reach an unprecedented extent.

**Aim of the study.** To evaluate the incidence of pathogenic flora in hospital conditions and the degree of microbial resistance in hospitalized patients.

**Materials and methods.** The retrospective study carried out within the "Sfinta Treime" Municipal Clinical Hospital comprises a group of 30 patients hospitalized in Therapy II. The study included medical records of patients hospitalized between April and July 2017, aged between 30 and 70 years. The antibioticograms and the treatment of these patients have been studied and interpreted.

**Results.** The study showed a prevalence of bacterial culture of *Streptococcus viridans* representing 30% cases, followed by *Streptococcus beta haemolyticus* and *Staphylococcus aureus* in 20%, *Staphylococcus haemolyticus* - 13.33%, *E. Coli* - 6, 66%. *Moxarella catarrhalis*, *Streptococcus pyogenes* and *Klebsiella oxytoca* in a proportion of 3.33% are less significant. The isolated microorganisms from patients in Therapy II section showed increased resistance to antibiotics in the penicillin group - 73.33%, the macrolide group - 36.66%, the glycopoid group - 26.66%, and the cephalosporins group - 16.66%. Less bacterial resistance is for quinolone groups -10.00%, fenicols - 6.66%, oxozolidones, aminoglycosides and penicillins + beta-lactamase inhibitors in equal proportions of 3.33%.

**Conclusions.** The study of antibiotic resistant pathogenic flora from patients in Therapy II section showed a prevalence of bacterial culture of *Streptococcus viridans*, followed by *Streptococcus beta haemolyticus* and *Staphylococcus aureus*. Microorganisms isolated from these patients showed increased resistance to antibiotics in the penicillin groups, followed by macrolides, glycopeptides and cephalosporins.

**Key words:** resistance, antibiotics, microorganisms, antimicrobial

#### **234. ISOTHIUREA DERIVATIVES - THE NEW GENERATION OF ANTIHYPERTENSIVE DRUGS**

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**Introduction.** One of the major concerns of modern medicine is the use of new, long-acting antihypertensive drugs. Numerous studies have confirmed the importance of correct treatment of hypertension to reduce cardiovascular morbidity and mortality. Physicians now have a choice of a wide range of antihypertensive drugs with numerous evidence of their efficacy, but which often cause side effects limiting their widespread use. Benzituron or S-benzylisothiurea chloride is referred to a new range of hypotensive substances, isothiurea derivatives, able to reduce and to stabilize the level of the arterial blood pressure. The solution of the benzituron, in dosage of 2 mg/kg shows a noticeable hypotensive and antihypertensive action, with duration from 4 to 5 hours.

**Aim of the study.** To evaluate the effect of benzituron on blood pressure and heart rate on the background of adrenergic receptor blockade with propranolol.

**Materials and methods.** The experiments were performed on 14 cats 2-4 kg body weight anesthetized with 30% urethane solution (500 mg/kg) and chloralose (50 mg/kg) administered intraperitoneally, followed by blood pressure and heart rate monitoring at different intervals of time.

**Results.** The 0.2 mg/kg propranolol solution was administered intravenously with effect assessment at 2 and 5 minutes, followed by 5 minutes intravenous administration of isoprenaline solution 0.005 mg/kg, then 2 mg/kg benzturon dissolved in 1,5 ml physiological saline solution with effect recording at certain time intervals. Isoprenaline was injected to demonstrate  $\beta$ -adrenoceptor blockade by propranolol. Subsequent intravenous injection of benzturon resulted in a decrease in blood pressure at the 60th minute.

**Conclusions.** Benzturon in the dose of 2 mg/kg exerts hypotensive effect on the background of blockade of  $\beta$ -adrenoreceptors.

**Key words.** Benzturon, blood pressure, heart rate

### 235. OBTAINING AND BIOLOGICAL EVALUATION OF $\alpha$ -TOCOPHEROL ESTER TYPE PRODUCTS

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**Introduction.** More and more scientific evidence criticizes free radicals for the occurrence of numerous and serious conditions such as liver cirrhosis, atherosclerosis, various types of cancers, diabetes etc. For this reason, the role of antioxidants, in defending the body from damage caused by different types of radicals, is crucial. Although molecular oxygen plays a particularly important role in sustaining life on this planet through its involvement in many physiological processes (photosynthesis, aerobic respiration), it is also toxic, especially when converted to the superoxide ( $O_2^-$ ), anion included into the group of reactive oxygen species. Thus, in this context, the development of new antioxidant compounds capable of neutralizing reactive oxygen species, is essential.

**Aim of the study.** The present study aims to evaluate the antioxidant action of some derivatives obtained by esterification of aryl-propionic acids with  $\alpha$ -tocopherol.

**Materials and methods.** The ester-type prodrugs of tocopherol were obtained by reacting it with derivatives of the aryl-propionic acid class (ibuprofen and ketoprofen) in absolute ethyl alcohol medium. The resulting compounds (TOC-IBF and TOC-KTF) were physically and chemically characterized and their structure was confirmed by IR spectroscopy. Antioxidant potential was assessed by two spectrophotometric methods: total antioxidant capacity and reducing power.

**Results.** Following optimization of the synthesis method, the compounds were obtained in good yields. IR spectra, recorded in the range of 500-4000  $cm^{-1}$ , revealed the group vibrations characteristic of the structural elements specific to each compound: the ester group, the aromatic ring and the basic structure of the tocopherol. The structural modulation of the aryl-propionic acids has positively influenced the antioxidant properties, the action of the synthesized compounds being comparable to that of tocopherol.

**Conclusions.** The results obtained in this study support the antioxidant potential of synthesized compounds and their applications in various diseases mediated by reactive oxygen species (ROS).

**Key words:**  $\alpha$  -tocopherol ester, prodrugs, antioxidant action

### 236. USE OF PROFETUR IN ACUTE ARTERIAL HYPOTENSION CAUSED BY ACE INHIBITORS

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**Introduction.** ACE inhibitors are well known to improve outcomes in the prevention of acute myocardial infarction, lowering the morbidity and mortality in congestive heart failure, and to attenuate renal dysfunction. On the other hand they can induce severe refractory hypotension during general anesthesia or in case of overdose. Profetur is a new alkyliothiurea derivative with potent antihypotensive vasoconstrictive action. The substance has a long lasting action after single dose administration, both in normal conditions and on the background of blockade action of different antihypertensive drugs. This characterizes profetur as a promising drug for the use in the treatment of acute arterial hypotension caused by ACE inhibitors.

**Aim of the study.** Evaluation of the possibility of using of the new antihypotensive vasoconstrictive isothiurea derivative profetur for the correction of hemodynamic disorders observed in acute arterial hypotension caused by ACE inhibitors.

**Material and methods.** Experiments were performed on rats anaesthetized by sodium thiopental (30-50 mg/kg, i/p). Acute arterial hypotension was modeled by intravenous administration of the ACE inhibitor enalapril (2 mg/kg). In order to correct hemodynamic disorders, profetur was administered intravenously in the dose of 20 mg/kg. Antihypotensive action was assessed by determining changes in blood pressure, heart rate and respiration in the initial state, after 2 and 15 minutes on the background of enalapril, and within 60 minutes after the administration of profetur.

**Results.** Enalapril administration was accompanied by a decrease in blood pressure by 32.5%, an increase in heart rate by 4.6% and respiratory rate by 33.5%. With a single intravenous administration of profetur, blood pressure was significantly increased and stabilized ( $106 \pm 21, 114, 7 \pm 20, 6$  mmHg) during the whole duration of the experiments. Recovery of blood pressure was accompanied by a decrease in heart rate and respiration. Changes of these parameters indicate that the profetur, normalizing blood pressure, eliminated hemodynamic disorders caused by enalapril.

**Conclusions.** In acute arterial hypotension caused by enalapril, profetur preserves its vasoconstrictive action and contributes to abolishment of the disturbances of the systemic hemodynamics and hypoxia seen with the use of the ACE inhibitor.

**Key words:** profetur, enalapril, hypotension, antihypotensive drugs

## **237. HEPATOPROTECTIVE PRODUCTS ACCORDING TO STATE MEDICINE NOMENCLATURE FROM REPUBLIC OF MOLDOVA**

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**Introduction.** The acute and chronic hepatitis remains to be the main problem for the humanity and also for R. Moldova, that's why the evaluation of drugs with hepatoprotective action is essential, both from a medical and social point of view and also from an economic point of view. Hepatoprotective products are constituents capable of protecting the liver from the destructive action of endogenous and exogenous factors.

**Aim of the study.** Our main goal is to select all the hepatoprotective products that were recorded in R. Moldova, analyzing them according to the State Medicine Nomenclature (SMN).

**Materials and methods.** For our research, as materials, were used: the SMN that contains 5137 drugs, available on Medicines and Medical Devices Agency (amed.md) and also the scientific literature and guides on the classification of hepatoprotective products.

**Results.** Hepatoprotective products have a lot of 2.1% of the total number of medicine from the nomenclature (5137), the first in the list are the drugs with vegetal origins: Silymarin products - 31, followed by ursodeoxycholic acid products -18, amino acid products -17, phospholipids products -9, and other different groups own an amount of 32 products. At the moment, the following products are absent from the pharmaceutical market: amino acid derivatives: Betaina citrat, Ornitin aspartat; drugs which contain phospholipids: Fosfolip, Lipin, Eplir; drugs with a animal origins: Sirepar, Vitogepat; and also synthetic drugs. According to the pharmaceutical forms, the hepatoprotective can be presented in capsules-55%, followed by tablets-26%, injectable solution-11%, oral solutions-7% and just 1% for vegetal products. We mention that reported to the manufacturing, 43% of hepatoprotective products are produced by EU, and 16% are produced in R. Moldova, etc.

**Conclusion.** The National Program to combat the viral hepatitis for the years 2017-2021 provides a reduction of 50% till 2021 of the incidence and prevalence for the acute and chronic hepatitis, including through the access of patients with hepatitis to medical products and to quality treatment services.

**Key-words:** hepatoprotective, products, hepatitis

## 238. APPROACHES IN THE DRUG-INDUCED LUPUS ERYTHEMATOSUS

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**Introduction.** Drug-induced lupus erythematosus (DILE) is an autoimmune syndrome similar to systemic lupus erythematosus (SLE), caused by the long-term administration of certain drugs. The management of the disease is an important issue, because the pathogenesis and clinic manifestations of the disease have remained unclear.

**Aim of the study.** Analysis of literature and new results regarding disease pathogenesis, clinical and laboratory manifestations, treatment and comorbidities in drug-induced lupus erythematosus. Material and methods. Selection and analysis of new literature in clinical practice, diagnostic and therapeutic approaches of drug-induced lupus erythematosus.

**Results.** Over 80 drugs have high potential to induce DILE. The most common are; procainamide, hydralazine and quinidine. Drugs' metabolism by the means of myeloperoxidase, their deacetylation of acetyl groups and the apoptosis with antinucleosomal antigen release are the basic links in the DILE pathogenesis. Diagnosis is made by determination of antinuclear and/or antihistronic antibodies. Most commonly used drugs for DILE control are: mycophenolate mofetil, cyclophosphamide, methylprednisolone, rituximab, belimumab, and blisibimod, indicated according to treatment schemes.

**Conclusions.** The use of drugs must be individualized on the base of their efficacy and harmlessness. Recommended drugs in DILE treatment are prescribed according to their efficacy, accessibility, and evidence-based medicine and represent: glucocorticoids, immunosuppressants and B-cell blockade.

**Key words:** drug-induced lupus erythematosus, systemic lupus erythematosus

## DEPARTMENT OF PATHOPHYSIOLOGY AND CLINICAL PATHOPHYSIOLOGY

### 239. BIOIMPEDANCE ANALYSIS IN MEDICINE

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**Introduction.** Bioimpedance analysis is a noninvasive, low cost and a commonly used approach for body composition measurements and assessment of clinical setting. There is a variety of methods applied for interpretation of measured bioimpedance data and a wide range of utilizations of bioimpedance in body composition estimation and evaluation of clinical status. This method is currently becoming more widely used for diagnostics of various pathological disorders.

**Aim of the study.** Revealing the conceptual basis and application of bioimpedance, as well as the method feasibility regarding physiological activity, body composition and chronic diseases assay.

**Materials and methods.** Assaying the contemporary models concerning the implementation of bioimpedance in clinical research, including indirect assessment of physiological functions and body composition (fluid volumes and fat-free mass), classification of hydration, regional fluid accumulation, prognosis of disease and wound healing as well.

**Results.** Increasing request for accurate, cost effective and non-invasive systems for clinical status monitoring and diagnosis of diseases, has accelerated the research endeavors to provide new methods and technologies for evaluation of the human body health. Body composition assessment tools have been considered a promising approach for the quantitative measurement of tissues characteristics over time, additionally to a direct assay of body composition equivalences and survival rate, clinical condition, illness and quality of life.

**Conclusions.** Bioimpedance analysis is a growing method for body compartments estimation in nutrition studies, sportive medicine and evaluation of hydration rate, fat mass and fat free mass between healthy and diseased populations. Fat mass, fat free mass including skeletal muscle mass, bone minerals, and total body water are compartments that can be predicted and analyzed using suitable bioimpedance measurements techniques, procedures and special equations applied in population in concern to age, ethnic groups etc.

**Key words:** bioimpedance; analysis; body composition

## **240. BREATHE NEW LIFE INTO CHRONIC KIDNEY DISEASE**

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**Introduction.** Chronic kidney disease (CKD) is a worldwide public problem. There is a rising incidence and prevalence of kidney failure with poor outcomes and high cost. The guidelines define CKD as kidney damage or decreased glomerular filtration rate (GFR) less than 60 mL/min/1.73m<sup>2</sup> for at least 3 months. In Moldova, there were registered 490 patients with chronic kidney disease in 2017. Nowadays, dialysis and transplantation are 2 main solutions especially in end-stage kidney disease. Dialysis will prolong the life, but they will not have a normal life quality. Life expectancy of someone on dialysis is lower than that of the general population. Dialysis and transplantation are not fully available for all patients.

**Aim of the study.** Analysis and comparing the data of latest studies performed in Europe and USA regarding new approach of CKD treatment, including exploring the field of artificial kidney grown in laboratories.

**Materials and methods.** The principle of this study execution consists on exploring of different new and suitable methods of treatment and life quality improvement in patients with CKD. Meta-analysis of diverse studies is the key tool for disclosure of optimal strategies for kidney function improvement in the ends stage of diseases.

**Results.** 1. Regenerative medicine holds the potential to fully heal damaged tissues and organs, offering solutions and hope for people who have conditions that today are beyond repair. 2. A new drug therapy that could potentially control protein leakage from the kidneys. 3. A new approach to prevent the kidney cell irreversible injury: AC1903. 4. Scientists have successfully produced human kidney tissue within a living organism, which is able to produce urine.

**Conclusions.** The outcome of the study reveals a significant "win" on kidney disease. In Moldova patients reach late stages of chronic renal disease, because a lot them are addressing too late to medical care services. That's why new treatment methods have a great importance to save lives of patients with CKD and to improve their life quality as well.

**Key words:** Chronic kidney disease (CKD); chronic renal failure; therapeutic methods

## 241. THE ROLE OF OSTEOMORPHOGENETIC PROTEINS IN POSTTRAUMATIC REGENERATION OF THE BONES

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**Introduction.** Certain cells participate in the process of physiological and reparative (posttraumatic) regeneration: osteoprogenic cells - osteogenic stem cell, preosteoblasts, osteoblasts. Likewise osteoclasts are involved in the remodeling process of the bones. The activity and interaction of osteogenic cells in the bone regeneration process is controlled by numerous growth factors named as bone morphogenetic proteins (BMP). It has now been demonstrated that these morphogenetic signals organize the structure of all organs, including bones, and the disruption of their functioning leads to different pathologies. Thus, discordance in the activity of these protein-signals may be the cause of tumor growth (e.g., rectal, esophageal cancer). BMPs play a decisive role in the regeneration and organization of the bone.

**Aim of the study.** Bibliographic analysis of the role of stimulatory factors in osteogenesis.

**Materials and methods.** Currently PMs obtained by the use of gene engineering method are used in regenerative medicine, including stimulation of post-traumatic bone regeneration. The method consists of inoculating BMP into the bone implant, from where they penetrate to the fracture site during several weeks. Clinical use of the osteomorphogenic protein products is now accepted for the acceleration of fractured bones fragments - Infuse BMP-2 (Medtronic) in dentistry and OP-1 BMP-7 (Stryker Biotech) in long bone fractures. BMPs are used in the recovery of intervertebral cartilage. The broad implementation of BMP is only retained by the expensive costs of the therapy – the standard cure can cost 6000-10,000 \$.

**Results.** Nowadays about 20 osteomorphogenic proteins are known, and the following are directly involved in osteogenesis: BMP1 - metalloprotease - acts on procollagen I, II, II and participates in the cartilage genesis; BMP2 - plays a role in differentiation of osteoblasts and genesis of cartilages and bones; BMP3 - stimulates bone formation; BMP4 - regulates the formation of teeth; BMP5 - has a role in cartilage development; BMP6 - controls homeostasis by regulating hepcidin synthesis; BMP7 - plays a main role in the differentiation of osteoblasts and stimulates SMAD1 formation; BMP8a - participates in the development of the cartilages and bones.

**Conclusions.** Osteomorphogenic proteins present important factors in the cartilage and bone genesis and open a real clinical perspective regarding the acceleration of post-traumatic bone regeneration.

**Key words:** BMP; cytokines; osteoblast

## **242. MOLECULAR ASPECTS IN PATHOGENESIS OF CANCEROGENESIS: REVIEW**

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**Introduction.** According to the WHO, it is estimated that the annual number of cancer's cases will increase by about 70% in the next two years.

**Aim of the study.** To evaluate and systematize pathogenetic factors that contribute to cancerogenesis. Cancerogenesis is defined as the static process by which a normal cell acquires properties that allow the development of malignant phenotype (uncontrolled proliferation, local invasion and metastasis), or a cascade of events that lead to the transformation of a normal cell, often a clonogenic cell (stem cell) into cancer. Cancerogenesis is the multistage process in which mutations lead to the development of malignant phenotype, which is the result of multiple interactions between various exogenous and endogenous factors. Cancerogenesis proceeds through the accumulation of genetic and epigenetic changes that allow cells to break free from the tight network of controls that regulate the homeostatic balance between cell proliferation and cell death.

**Conclusions.** 1. In recent years, the development of genome-wide analytic methods has opened the possibility of identifying simultaneously multiple changes in gene expression as well as in genetic or epigenetic alterations affecting the genome of cancer cells. 2. The Mutator Phenotype can be caused by a number of mechanisms, such as defects in cell-cycle regulation, apoptosis, specific DNA repair pathways, or error-prone DNA polymerase, and it can have its source in inherited genetic defects that make subjects prone to specific cancers. 3. Mutations in cancer cells cover a wide range of structural alterations in DNA, including changes in chromosomes copy numbers or chromosomal alterations encompassing millions of base-pairs such as translocations, deletions or amplifications, as well as smaller changes in nucleotide sequences such as point mutations affecting a single nucleotide at a critical position of a cancer-related gene (Sugimura et al., 1992). These different kinds of alterations often co-exist within a single tumour. 4. TP53 mutations in plasma DNA have been reported in patients with cancers of the colon, pancreas, lung, and liver. 5. EGFR and HER2 are often altered in diverse human cancers, by amplification, point mutation, or both. Amplifications of EGFR have been detected in brain cancers and in a small proportion of a number of epithelial cancers such as squamous oral or esophageal cancer. Amplification and overexpression of HER2 are a frequent event in breast and ovarian cancer (Harari and Yarden, 2000).

**Key words:** cancerogenesis, review

## **243. PATHOGENETIC FACTORS INVOLVED IN THE PRODUCTION OF LATE COMPLICATIONS OF DIABETES**

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**Introduction.** Diabet Melitus is a complex and heterogeneous sindrom caused by an innate or acquired disorder of insulin secretion or resistance of peripheral tissues to the insulin produced, it produces profound disturbances in carbohydrate, protein and mineral metabolism. All these leads to the appearance of cronic complications it has become one of the most common metabolic disease .In the world there are 449,3 mln people with diabetes. In the Republic of Moldova there are 90.000 people with diabetes. Studying the role of the: hyperglycaemia final glycation products, inflammation, oxidative stress, the rennin angiotensin aldosterone system, could serve as information markers involved in the production of late complications of diabet mellitus.

**Aim of the study.** In these review, I will describe the pathogenetic factors involved in the production of late complications of diabet mellitus.

**Materials and methods.** The material was searched using the PubMed engine along with the psycarticles database. The following keywords joined the search for titles/ abstracts via PubMed: Pathogenesis of late complications of diabet mellitus.

**Results.** Hyperglycaemia is the basis for chronic lesions in diabet mellitus. In hyperglycemia the body is trying to metabolize glucose in an accelerated way, to decrease the amount of glucose in the same time is formed a series of intermediate toxic products which lead to training advanced glycation end products(AGE). The most important pathological effect of AGE is that many cells have surface receptors for AGE called (RAGE), by binding AGE to receptors(RAGE) are stimulated the inflammation and oxidative stress. The inflammation is involved, the source which produce the inflammation is the adipos tissue trough adipocytes and macrophages which releases pro-inflamatory mediators. TNF alfa, IL-6,IL-1,IL-8, gamma interferon increase the inflammation and aggravate insulin resistance also induces the apoptosis and disfunction of beta pancreatic cells. The oxidative stress means excessive formation of free radicals: reactive oxygen molecules(ROS) and reactive nitrogen molecules(RNS) they alter the structure of proteins, lipids and nucleic acids all leading to vascular damage. ANG II it's an vasoconstrictor factor involved in vascular remodeling and atherosclerosis. Aldosterone has the effect of stimulating proliferation of fibroblasts and stimulating the inflammation.

**Conclusions.** The control of pathogenetic factors will allow development of pathogenetic therapy of Diabetes and only then we will be able to stopped the occurrence of late complications of diabetes.

**Key words:** late complications, inflammation

#### **244. PATHOGENETIC FACTORS INVOLVED IN METABOLIC INFLAMMATION INDUCED BY OBESITY**

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**Introduction.** Obesity is a complex problem, multifactorial disorder, characterized by the increase in body weight due to adipose tissue. In recent decades, it has become one of the most common nutritional diseases in the world, being considered the 21st century disease. Its increasing incidence requires attention due to the associated mortality and morbidity potential. Obesity is the most important risk factor for atherosclerosis, hypertension, dyslipidemia, diabetes, being a constituent part of the metabolic syndrome. Studying the role of ghrelin, leptin, adiponectin, TNF could serve as information markers of obesity and other metabolic disorders, organ and obesity-related disorders.

**Aim of the study.** In this review, I will evaluate and systematize the pathogenetic factors originating from the adipose tissue involved in the metabolic disorder.

**Materials and methods.** The information was searched using the PubMed engine along with the PsycArticles database. The following keywords joined the search for titles / abstracts via PubMed: Pathogenesis of obesity, leptin, metabolic syndrome, metabolic inflammation.

**Results.** Adipose tissue produces a series of cytokines collectively called adipocytokine. TNF- $\alpha$  - was the first cytokine identified in the adipose tissue in obese mice, marking the beginning of the concept of metabolic inflammation. A series of clinical and experimental studies have been reported showing that adiponectin functions as an anti-atherogenic, anti-inflammatory and antidiabetic agent. Hypoadiponectinemia increases the risk of type II diabetes, hypertension and dyslipidemia and ultimately causes atherosclerosis. Leptin has pro-inflammatory effects by stimulating IL-2 synthesis and by inhibiting the synthesis of IL-4 by T cells. Proinflammatory cytokines induce the synthesis and release of leptin, which helps maintain chronic inflammation in obesity.

**Conclusions.** The regulation of adipocytokine and brain-intestinal hormone levels will allow the development of methods of prophylaxis and pathogenetic therapy of obesity, metabolic disorders and multiple organ dysfunction-induced obesity.

**Key words:** pathogenesis of obesity, adipocytokine, metabolic inflammation

## DEPARTMENT OF HUMAN PHYSIOLOGY

### 245. THE CONCEPT OF "RESPIRATORY PERSONALITY" IN TWINS

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**Introduction.** The first who introduced the term "respiratory personality" was Dejours (1961). He discovered differences in the respiratory pattern from one person to another and suggested that the respiratory pattern may be a stable feature of personality.

**Aim of the study.** To study the concept of "respiratory personality" in twins

**Materials and methods.** The group was made of 16 twins (8 pairs) in the age of 24+-6(the youngest are 18 years old, the eldest 30). All don't have respiratory pathology, are healthy and didn't take psychoactive substances before the experiment. The current study was applied in 2 steps. First determines psychometric properties of twins, which were described using PID-5 test. This test has 220 autoreport elements, evaluated from 0 to 3. This test discovers maladaptive personality traits from DSM-5. Second step was made to record respiratory pattern using respiratory inductive pletismography Visuresp RBI France and Capnography Capnostream. The experimental protocol included recording the respiratory variables in 27 minutes: 5 minutes in rest, 3 minutes of pain, 3 minutes postpain rest, 1 minute stress, 3 minutes poststress rest, duration of apnea, 3 min postapnea rest, 3 minutes of metronome guided volunteer hyperventilation, 5 minutes of rest.

**Results.** (1) For all the girls in a pair of twins, the PID-5 domains are more pronounced in one girl than in the second in pair. (2) In a pair of twins, the same domains of PID-5 are often found. The most common is the domain of Disinhibition (6 pairs) and Detachment (7 pairs). (3) Two pairs are similar in all domains. And they are girls. (4) EtCO<sub>2</sub> is initially the same in a pair of twins. At 37.5% it starts to differ in the sample with apnea (5) 75% had the same length of apnea (6) 75% had a similar level of pain (7) 62.5% of couples showed the same trend in the change in respiratory rate during the following samples: in transfer from post-pain to stress samples and in transfer from stress to post-stress samples. (8) the same length of apnea are represented in twins with the same Disinhibition domain

**Conclusions:** 1. Even with different PID-5 domains, some variables of the respiratory pattern in twins are the same 2. Twins are very similar in PID-5 items, of which the most common domain is Detachment 3. The most common in PID-5 domains are girls 4. Domain of Disinhibition may have an effect on the length of apnea.

**Key words:** “respiratory personality”, respiratory pattern, PID-5, twins

## 246. SLEEP QUALITY OF URBAN POPULATION IN REPUBLIC OF MOLDOVA

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**Introduction.** For each person, sleep is an essential part of normal life rhythm and well-being. Spending roughly third part of life in this state, many people are underestimating its influence on body’s functioning, mood and sharpness of mind. Especially clearly, sleep problems can be observed among the urban population, affected by increasing rhythm of life and burden of constant stress. Sleep disturbances are directly linked to human errors, accidents, material losses and long-term effects on health. This study was designed to prove statistical significance of sleep-related pathologies among the urban population of Moldova and deficiency of its diagnostics and treatment.

**Aim of the study.** To determine sleep quality of urban population in Republic of Moldova

**Materials and methods.** The study consisted of an anonymous survey of urban citizens aged 18-40 years old and included the Pittsburgh Sleep Quality Index (PSQI), a self-rated instrument that evaluates sleep habits for last month. It consists of seven “component” scores: subjective sleep quality, sleep duration, sleep latency, habitual sleep efficiency, use of sleeping medication, sleep disturbances and daytime dysfunction. The sum of scores for these seven components yields one global score.

**Results.** Study was completed by 359 people. Prevalence of bad sleepers, characterized by PSQI score > 5, was reported by 181 respondents (50,2%). Medium PSQI score was 6,11. Medium score for women was 6,28 and 5,89 for men. 5,67 for married respondents and 6,26 for not married. Medium score for respondents, which’ve evaluated their income as “low” was 6,46, 5,97 for those who said “medium” and 4,33 for people who characterized their income as “high”.

**Conclusions.** Every second person is experiencing problems with sleep, which is more significant, comparing it to data provided by other countries (30-40%). Also, it was confirmed that men experience less sleep problems than women, married couples sleep better than unmarried and that sleep quality increases with subjective satisfaction of financial status.

**Key words:** sleep quality, disturbances, PSQI

## 247. CARDIAC FUNCTIONAL INDEX - LEFT VENTRICLE EJECTION FRACTION AS A PREDICTOR FACTOR IN HEART PATHOLOGY

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**Introduction.** The ejection fraction (EF) is the volumetric fraction of blood ejected from a ventricle of the heart with each heartbeat. EF is used as a measure of the pumping efficiency of the heart. The systemic circuit is provided by the left ventricle, thus left ventricular ejection fraction (LVEF) is the main index the body’s systemic circulation. By today’s standards, LVEF is

used as an important determinant of the severity of systolic heart failure (HF). In many studies, LVEF was proposed as a predictor in patients' outcome presenting cardiac disease.

**Aim of the study.** It was performed a literature review in order to highlight the significance of the LVEF in cardiac disease prognosis outcome.

**Materials and methods.** There were used "PubMed MEDLINE" database to select relevant full-text original articles published from 2013 till 2018, using a search formula "ejection fraction predictor mortality", non-human studies, as well as review articles were excluded. According to research criteria, there were retrieved 36 full-text, clinical trial articles, published in the last 5 years.

**Results.** Several studies identified LVEF as the most prominent independent predictor of morbidity and mortality in both acute and chronic HF patients. Acute heart failure (AHF) is one of the most important cardiovascular syndromes associated with high cardiovascular morbidity, and is the major cause of admission in emergency departments worldwide. AHF is an increasing cause of admission in emergency departments worldwide and in almost half of patients the LVEF is moderately or severely reduced (<40%). Since AHF is a very heterogeneous condition, it is important to identify clinical and laboratory parameters useful for risk stratification of these populations. LVEF may be one of the most convenient, since it is widely measured, easily interpreted, and inexpensive. This applies mainly to patients with reduced LVEF, while the interactions between diabetes and HF with preserved LVEF are less known.

**Conclusions.** On one side, studies have shown that LVEF is an independent predictor in both acute and chronic HF patients. On the other side, patients with diabetes and HF, as well as those with non-ST segment elevation myocardial infarction after revascularization, the reduced and preserved LVEF have a major impact which are less known and require additional research.

**Key words:** left-Ventricle Ejection Fraction, Heart Failure, Predictor

## 248. BLOOD DONATION IMPACT ON CARDIO-VASCULAR SYSTEM ACCORDING TO AUTONOMIC NERVOUS SYSTEM PREDOMINANCE

Authors: **Vladislav Zhebelev, Sushytska O.I.**

Scientific adviser: Bandurka N. M., MD, PhD, assistant-professor, Department of human physiology Vinnitsa *N. Pirogov* Memorial Medical University, Vinnytsya, Ukraine

**Introduction.** Blood donation is a voluntary act of giving a portion of blood from a healthy person to diseased with a curative goal. This blood is used during operations and in emergencies accompanied by significant blood loss. As soon as blood donation is connected to functional abilities of cardio-vascular system orthostatic tests are needed in order to evaluate its tolerance to changes without any harm.

**Aim of the study.** Evaluation the influence of donation on cardiovascular system activity depending on the tone of autonomous nervous system.

**Materials and methods.** Have been used methods of cardiovascular system function assay, including Valtgofel orthostatic test (hemodynamic stats evaluation) and autonomic nervous system tone evaluation (e.g. Kerdo index, Danini-Ashner reflex). The study was attended by 100 volunteers, who were divided in two groups: 50 volunteers who donated blood in Vinnitsa district blood transfusion center and 50 – control group. Autonomic nervous system and orthostatic test were evaluated in both groups.

**Results.** Natural reaction to the test was heart rate increasing by 10-16 b/min after the test and heart rate stabilization in a follow up period of 3 min (on the level from 6 to 10 beats per minute higher than in horizontal position). Strong reaction indicates high reactivity of sympathetic part of autonomic nervous system, what is common for untrained people. Weaker reaction is observed in case of low reactivity of sympathetic system and higher tone of parasympathetic part of autonomic nervous system, what usually indicates trained state of cardiovascular system.

People with parasympathetic predominance - 11(22%) don't have any changes in functioning of cardiovascular system (pressure, pulse); 39 volunteers (78%) have sympathetic part of autonomic nervous system predominance: 31 of them (62%) had significant increasing of blood pressure and pulse and 8(16%) had hypertension and pulse increasing.

**Conclusions.** Blood donation might be a tool for training of cardiovascular system in 22% cases. In 62% of volunteers blood donation is harmless. For 16% of volunteers who has high blood pressure blood donation is dangerous and could be life threatening.

**Key words:** blood donation, cardiovascular system, autonomous nervous system

## **249. EFFICIENCY ANALYSIS AND DETERMINATION OF THE NEED TO IMPLEMENT THE PID-5 INTERNATIONAL INSTRUMENT IN MEDICAL PRACTICE**

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**Introduction.** PID-5 (personality inventory for DSM-5) was created to improve a personality disorder diagnosis system described in the Manual of Diagnostic and Statistical Mental Disorders (DSM, 5th edition, American Psychiatric Association, 2013). PID-5 measures 25 maladaptive personality traits and five areas of traits and offers new opportunities in diagnosing personality disorders.

**Aim of the study.** Determination of effectiveness and determination of the need to implement the PID-5 international instrument for the analysis of personality disorders included in DSM-V in medical practice.

**Materials and methods.** The study was done on a group of 83 students from two universities: USMF and ASEM, over 2016. All students underwent the PID-5 questionnaire which contains 220 elements of personality self-reporting that measures maladaptive personality traits, which are DSM-5 characterized. The questions were answered on a scale of four, from 0 ("false or almost always false") to 3 ("very true or most often true"). Therefore the PID-5 offers scores on a scale of 4 points, for 25 facets (traits). These facets correspond to maladaptive personality traits, describe in section III of the DSM-5 and are included in the five superior domains, as well, described in section III: Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism. A score bigger than 2 of a certain number of facets is a quantitative indicator of one of the 6 types of PD: Antisocial, Borderline, Schizotypal, Avoidant, Obsessive-Compulsive or Narcissistic. PID-5 was translated and validated by a working group composed of collaborators from the faculty of Human Physiology and Biophysics of USMF „N. Testemitanu” and the department of Migraine and Vegetative Disturbances from the Institute of Neurology and Neurosurgery respecting the norms of translation, adaptation and validation of ITC and with the author's acceptance.

**Results.** The study showed that USMF students predominate a higher index of personality disorders compared to ASEM students, namely obsessive-compulsive disorder. There is no significant difference in depending on gender among USMF students. The DSM-5 Personality Inventory has demonstrated the efficacy and support of its use in medical practice in the Republic of Moldova.

**Conclusions.** The review of the Personality Disorder chapter in DSM V consists not only in the elimination or maintenance of various categories, but is also a fundamentally new approach that is significantly different from what was previously. PID-5 enables effective diagnosis of PD, so its use in medical practice is favorable.

**Key words:** personality disorders, DSM-V, mental illness, PID-5

## 250. RELATIONSHIP BETWEEN PERSONALITY DISORDERS AND HEADACHES

Authors: **Mitreanu Ecaterina**

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**Introduction.** Studies on the specificity of migraine headache in patients with personality disorders are multiple. Results are often contradictory, which may be explained by psychological, socio-cultural, economic and purely individual differences of subjects.

**Aim of the study.** The study of the importance of the personality disorders degree and his influence on the clinic profile of the patients with migraine and tension-type headache.

**Materials and methods.** 28 patients from the Department of Headache and Autonomic Disorders of the Institute of Neurology and Neurosurgery (Chisinau, Republic of Moldova) were evaluated in this study, in 2 stages: psychometric testing using Personality Inventory Disorders for DSM-5 (PID-5) in 1st stage and data collection, headache intensity assessment and Headache Questionnaire in 2nd stage.

**Results.** The results of psychometric test allowed to separate the examined subjects in 3 groups according to numeric values of facets of PID-5: group I - Normal (0-1), group II - Accentuated Personality (1 – 1.66), group III - Personality Disorder (>1.66), and these results were correlated with intensity and frequency of headache. The analysis of 25 facets of PID-5, which are included in 5 domains of higher order: Negative Affection, Antagonism, Disinhibition, Detachment and Psychoticism, divided the domains into 3 groups: Internalization, Externalization and Psychoticism. These values were correlated again with intensity and frequency of headache.

**Conclusion.** Female gender has a higher introversion tendency than males, introversion and neurosis is more common among women with migraine; the onset of personality disorders occurs during early youth.

**Key words:** personality disorder, PID-5, headache

## DEPARTMENT OF HUMAN ANATOMY

### 251. MODERN STRATEGIES OF DIAGNOSIS IN GENITAL PROLAPSE

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**Introduction.** Statistics shows that women's health in Republic of Moldova is alarming, given the fact that genital prolapse in the structure of gynecological diseases ranges from 11 to 38.9%, it continues to increase. The pelvic floor is a funnel-shaped musculature structure. It is important in providing support for pelvic viscera (organs). The damage to the pelvic floor contributes not only to urinary incontinence but can lead to pelvic organ prolapse; the first ranges from 11 to 38.9%, it continues to increase with prevalence of severe forms. The pelvic floor dysfunction is a big problem because this can have a negative impact on the activity and quality women's life, because of this it should be studied.

**Aim of the study.** Identifying morphofunctional characteristics of the pelvic floor of women with genital prolapse.

**Materials and methods.** In this project was made a retrospective study of 103 cases of genital prolapse. Were investigated 289 women who were hospitalized in Medical Center "Galaxia",

gynecology department, Chisinau city, during 2009-2013 years and represents 35.6% of them. **Results.** The analysis shows that the 33,9 % of the women who were diagnosed with genital prolapse have Grade I of this disease; 66,1%-Grade II-III; 30,8% of them, this disease was associated with urinary incontinence. By number of clinical symptoms patients with Grade I of genital prolapse manifest in 68.57% of cases one symptom and two symptoms in 31,43% of cases; those with II-III Grade manifest in 14,7% of cases one symptom; in 70,5% of cases-two symptoms; 10,29%-three; 4,41%-four. As methods of investigation of functional perineum insufficiency was used in most of cases transvaginal ultrasound. Comparative analysis of the perineal echogenic parameters has demonstrated that all patients with genital prolapse identified the thinning of asymmetrically arranged muscular fascicles relative to the tendon center of the perineum, reduction of the thickness of it's muscles and their deterioration.

**Conclusions.** 1. Genital prolapse is a consequence of the pelvic floor integrity disorder that includes wide spectrum of disorders from an abnormally modified vaginal anatomy and clinical asymptomatic to a complete eversion associated with severe urinary disorders and sexual dysfunction. 2. Transvaginal ultrasound establishes early structural and functional modifications of the pelvic floor.

**Key words:** pelvic floor, genital prolapse, transvaginal ultrasound

## 252. MORPHOCLINIC CORRELATIONS IN GASTROESOPHAGEAL REFLUX DISEASE

Author: **Oleg Schiopu**

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**Introduction.** The esophageal junction (the epifrenic, intrahiatal and abdominal portions of the esophagus and the cardia) was highlighted by the medical community as a remarkable segment of the digestive tract and as a distinct anatomical-clinical entity. Lately, several pathologies have been completed with a morphopathological substrate as this anatomical area, including gastroesophageal reflux disease, hiatal hernia, Barrett's esophagus. Gastroesophageal reflux disease is the most common pathology of the digestive tract, being considered "21st Century Disease".

**Aim of the study.** Evaluation of morphoclinic peculiarities of the esophagogastric junction in patients with gastroesophageal reflux disease.

**Materials and methods.** The study lot consisted of 273 patients diagnosed with gastroesophageal reflux disease, which represents 9.12% of a total of 2997 patients admitted to the gastroenterology department of IMSP SCR "Timofei Moşneaga" during 2009-2012. Modern methods of investigation always highlight the morphopathological substrate in this pathology.

**Results.** The endoscopic examination revealed the presence of erosive esophagitis in 18.32% of cases and the Barrett esophagus - 5.78%; the incompetence of the inferior esophageal sphincter of 1st grade was determined in 28.35% cases, the second degree - 33.87% and the third degree - 37.78%. Radiological examination identified hiatal hernia in 7.75% of cases and gastroesophageal reflux: high (cardia-to C VI) in 29.45% cases; medium (up to T VI) - 47.28% and down (up to T XI-XII) - 23.25%.

**Conclusios.** Incompetence of the lower esophageal sphincter and gastroesophageal reflux forms explains the extent of lesions on the esophageal mucosal surface while also arguing for atypical symptoms (cervical, respiratory and cardiac) in gastroesophageal reflux disease. Based on the results of the study, we can conclude that gastroesophageal reflux disease is manifested when incompetence of antireflux mechanisms arises.

**Key words:** gastroesophageal reflux disease, esogastric junction

## 253. CONNECTIONS OF THE MOTOR BRANCHES OF THE FACIAL NERVE

Author: **Angela Babuci**

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**Introduction.** Considering superficial location of the extracranial branches of the facial nerve, and susceptibility of those branches to both injuries in facial surgery and facial traumas, knowledge about connections of the motor branches of the facial nerve doubtless are of clinical significance.

**Aim of the study.** To establish types of connections between the motor branches of the facial nerve.

**Materials and methods.** Thirty one adult cadaveric semiheads fixed in formaldehyde solution were dissected using Vorobiov's method of anatomical dissection and types of connections between the motor branches of the facial nerve were marked out. The specimens were dissected at the Chair of Human anatomy of Nicolae Testemitanu SUMPh and the research project was approved by the Ethics Committee of the same University.

**Results.** Different types of connections between the motor branches of the facial nerve have been highlighted by dissection of its extracranial branches. It should be mentioned that in all our cases were revealed connections between the motor branches of the facial nerve. In about 92% of cases small loop-shape connections of the ending branches were marked out. Another feature that worth to be mentioned was variable shapes of connections in the same individuals that should be kept in mind in surgery of the OMF region. Between the temporal, zygomatic and buccal branches of the facial nerve were distinguished wide-loop connections of various shapes: triangular, round, oval, linear and quadrangular. In 3 cases there were double connections between the cervical branch of the facial nerve and transverse cervical nerve, but in one case there were multiple connections between those branches revealed on both semiheads of the same cadaver. In about 89% of cases the loops were very small and distally located, close to the innervated muscles. Large oval-shape loops were marked out in 12 cases, formed immediately after division of the facial nerve trunk into its temporofacial and cervicofacial branches.

**Conclusions.** Connections between the motor branches of the facial nerve were of wide range of variability. It should be pointed out that even on the both semiheads of the same individual connections varied in shape being triangular, round, oval and quadrangular. In the proximity of the facial nerve trunk the loops were large and less in number, but smaller, more in number and of greater variability close to the innervated muscle. We believe that along with other factors that influence patients' recovery after surgery of the OMF region, connections of the motor branches of the facial nerve are of great clinical significance.

**Key words:** facial nerve, motor branches, connections, variability, loops

## 254. VARIABILITY OF MAXILLARY SINUS

Author: **Ana Moraresco**

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**Introduction.** The individual anatomical variability denotes the diversity of possible variants of anatomical formations contained between the two extreme forms, parameters in which all manifestations of variability are treated as a norm, unlike those that exceed them and can be treated as abnormalities. The reason for initiating the study is the non-matching of topography, shape, size, etc. of the maxillary sinus (MS) visible during surgical interventions to the so-called



norm described in the textbooks, the imperfection of some surgical approaches that do not take into account individual differences, the surgeons' dissatisfaction with anatomical data provided by bibliographic sources, especially in case of promotion of new surgical techniques.

**Aim of the study.** To determine the individual anatomical variability of the maxillary sinus depending on age and gender, based on the analysis of bibliographic data and materials of own researches.

**Materials and methods.** This study is based on a analysis of bibliographic data from literature with description of maxilla structure, MS variants and anomalies. 53 images of computed tomography by 3D reconstruction were selected from the database of the Maxillo-Facial Surgery Department of the Institute of Emergency Medicine (Chisinau Municipality) as a tool for researching the individual anatomical variability of MS (topography, presence of septa, pneumaticity, shape and dimensions depending on gender, etc.). The imaging examination has given us the possibility to study the anterior-posterior, lower-upper and transverse diameter of maxillary sinus, as well as the shape, pneumaticity and the presence/absence of septa in the sinus. The comparative MS analysis in people of different age and gender was used as a method of research.

**Results.** The data obtained show that 5 out of 30 women (16.66%) have MS septa, whereas the presence of septa in men was established only in 2 out of 23 (8.69%). Having analyzed the obtained results, we can conclude that in all the patients examined, the MS had the form of a quadrilateral pyramid. In terms of gender particularities, we can state that all sinus diameters are higher in men than in women, furthermore, the right and left MS in the same person are asymmetrical. By using a statistical test, we have obtained  $p < 0.05$  for all sinus diameters.

**Conclusions.** The data obtained demonstrate that the diameter of the maxillary sinus in men is obviously bigger than the diameter of the maxillary sinus in women. The maxillary sinuses show variations in their degree of pneumaticity and layout of septa. These variants must be known both for the application of proper therapy and for the prevention of complications that may occur in the course of sinusitis.

**Key words:** individual anatomic variability, maxillary sinus, morphometry

## 255. MORPHOLOGICAL AND IMAGING EVALUATION OF THE UPPER LIMB ARTERIES VARIABILITY

Author: **Zinovia Zorina**

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**Introduction.** The need for a deep morphological study on the issue of variability of the upper limb arteries is dictated by the modern requirements of practical medicine, as the number of surgical interventions, therapeutic and diagnostic procedures on the upper limbs have lately considerably increased.

**Aim of the study.** Identification and description of morphological variability of the upper limb arteries by means of classical dissection and imaging methods dependent on age, gender and side of the body.

**Materials and methods.** The study was performed at the Chair of Human anatomy of Nicolae Testemitanu SUMPh, on 26 formalin-treated upper limbs of adult cadavers (7 of those were bilaterally dissected) and on 34 CT angiographies performed on the device Light speed VCT 64 slides, from the database of the archives of the Euromed Diagnostic Medical Center. The study was carried out on 25 male and 21 female between the ages of 55-70. The macroscopic study was performed according to the anatomical dissection method by Vorobiov V. P., as a result of which the arteries of the upper limb with terminal and collateral branches were highlighted. The

imaging study using the angio-CT method enabled us to establish the real topography of the main arteries and their branches, and the 3D reconstruction revealed their origin.

**Results.** The following arterial variants were identified by anatomical dissection carried out on 14 upper limbs, 9 of those samples were dissected on male cadavers (6 right and 3 left) and 5 on female cadavers (3 right and 2 left). In 3 cases only one arterial variant was determined, whereas at the remaining 11 samples there were multiple variations (about 2-3), revealed bilaterally in 3 and unilaterally in 12 cases. The most variable artery of the upper limb proved to be the brachial artery in 18 cases; numerical variants of the collateral branches – 6 cases; variants of high origin of its terminal branches – 3 cases; presence of common arterial trunks – 4 cases; there were marked out 4 atypical topographical variants and 1 case of brachial artery trifurcation. The axillary artery with branching variants was detected in 9 male and 3 female upper limbs; the bilateral presence was determined in 2 cases and unilateral in 10 (6 right and 4 left); among variants the numerical and common trunks prevalence was highlighted. The angiographic study pointed out anatomical variants in 12 cases; mostly in males (10 cases) and predominantly on the right – 7; the most common was high bifurcation of the brachial artery and common arterial trunks.

**Conclusions.** The variants of the upper limb arteries have undoubted practical significance for diagnostics and surgical management.

**Key words:** arterial variants, brachial artery

## 256. RENAL VASCULARIZATION: DESCRIPTIVE STUDY USING ANGIOGRAPY AND DISSECTION

Authors: **Natalia Mazuruc, Serghei Covantev**

Scientific adviser: Olga Belic, MD, PhD, Associate professor, Department of Human Anatomy *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** Variants of blood supply to the kidneys were always at special attention. In many aspects, the relevance of the topic can be explained by the presence of a large number of surgical and non-surgical procedures performed on this organ, the number of which continues to grow.

**Aim of the study.** Variants of blood supply to the kidneys.

**Materials and methods.** The study was performed on 54 kidneys that were preserved in 10% formaldehyde solution and then carefully dissected; and 94 aortography's, obtained from patients, who did not suffer from any renal disease. The obtained data was analyzed using descriptive statistics.

**Results.** One renal artery was found in 45 cases (80.1%) based on dissection and in 63 cases (67.74%) according to angiography. Two renal arteries were found in 11 cases (19.58%) according to the dissected specimens and in 30 cases (32.4%) according to the aortography data. Presegmental division of the renal artery into two branches in 3 cases (5.34%) and three branches - 2 cases (3.56%). Based on the angiography data, presegmental division into two branches was detected in 6 cases (6.45%) and in three branches in 1 case (1.08%). Extrarenal division occurred in 10 cases (17.8%). The superior polar arteries were recorded in 12 cases (21.36%) based on dissection. During angiography the superior polar arteries were in 5 cases (5.38%) and inferior polar arteries as well in 5 cases (5.38%). In comparison with arteries, variants of development of veins are much less common. Accessory right renal vein was detected in 5 cases (9.9%). Late venous confluence was in seven cases (12.46%). We also had a rare case where the adrenal vein drained directly into the upper pole of the kidney (1.78%). In one case (1.78%) we found a left renal vein, which had a retroaortic location. We also found one case (1.78%) of an additional vein on the right and an additional artery on the left.

**Conclusions.** Based on our results renal artery variants are more frequent than venous variants. Accessory renal artery and presegmental branching are seen more often on the right side.

**Key words:** renal vascularization, dissection, angiography

## 257. PARTICULARITIES OF SPLENOPANCREATIC COMPLEX

Authors: **Serghei Covantey, Natalia Mazuruc**

Scientific adviser: Olga Belic, MD, PhD, Associate professor, Department of Human Anatomy  
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**Introduction.** In the last years, there is an increase in the number of complex surgical procedures on the spleen and pancreas. This process couldn't have gone unnoticed and eventually caused a growth of interest toward this abdominal cavity organ.

**Aim of the study.** To evaluate the particularities of splenopancreatic complex.

**Materials and methods.** The study was conducted using macroscopical dissection, abdominal ultrasonography (USG) and abdominal computer tomography (CT). The total number of dissected organs was 118 and included the spleen, pancreas and duodenum. Abdominal USG was performed in 239 patients and abdominal CT - in 257 patients who didn't have splenic or pancreatic pathology.

**Results.** The length of the pancreas correlated with the presence of accessory spleen (AS) ( $r=0.39$ ;  $p=0.02$ ) and inferior polar artery ( $r=0.37$ ;  $p=0.037$ ). Inferior polar arteries predicted the length of the pancreas although only a small number of cases could be explained by this model ( $R^2=0.127$ , Adjusted  $R^2=0.098$ ;  $Betta=0.357$ ;  $t(50)=2.091$ ;  $p=0.045$ ). The dimensions of the pancreas assessed by USG correlated significantly with the dimensions of the spleen. The tail of the pancreas had the strongest correlation ( $r=0.33$ ,  $p<0.001$ ). During the anatomical dissection of 118 organ complexes, we encountered 12 cases of AS, which represents 10.6% of the total number of cases. The mean length was  $1.67\pm 1.03$  cm, width  $1.47\pm 0.8$  cm and thickness  $0.87\pm 0.52$  cm. Among the 257 patients who had abdominal CT – 79 (30.73%) had AS (4 patients had two accessory spleens, 2 patients had three AS). Thus, from 79 patients – 92.4% had one AS, 5.1% had two AS and 2.5% had three AS.

**Conclusions.** There are several important variants of development, which should be taken into consideration while operating in the region and AS and the presence of inferior polar arteries are one of them. The reason for this relationship is the presence of common vascular supply as well as common embryology.

**Key words:** dissection, pancreas, spleen, splenic artery

## DEPARTMENT OF MYCROBIOLOGY AND IMUNOLOGY

### 258. ACTUAL DIAGNOSTIC METHODS USED IN NONTUBERCULOUS MYCOBACTERIA INFECTIONS

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**Introduction.** Nontuberculous mycobacteria, also called atypical mycobacteria, for a long period of time, were considered to be inoffensive for humans. Nowadays they are considered to be very wide spread and responsible for many atypical clinical manifestations such as localized lymphadenitis, tuberculosis like extrapulmonar lesions, disseminated form and so on. There a known more species today than 30 years ago, and all of them are classified in Ernest Runyon classification which dates from 1959. It includes four groups of atypical mycobacteria in dependence of coloration and rapidity of growth:

group I-photochromogens;  
group II-cotochromogens;  
group III-nonchromogens;  
group IV-rapid growing.

These mycobacteria live in water, air and soil, that's why they can contaminate organisms throughout airflow, via parenteral and enteral way. The diagnosis is not so hard, but in many cases irrelevant because of the possibility of atypical mycobacteria to contaminate containers for sputum collection.

**Aim of the study.** To analyse the actual situation of atypical mycobacteria diagnosis in our country, the diagnostic methods used for confirmation here and abroad.

**Materials and methods.** The diagnosis of nontuberculous mycobacteria is based on 3 criteria:

- 1) Clinical criterion: cough, fever, dyspnea and fatigue;
- 2) Radiologic criterion: persistent nodular infiltration;
- 3) Microbiologic criterion: positive culture and positive microscopic view. Each positive culture is the confirmed via GenoType® Mycobacterium CM test. 201 cases of nontuberculous mycobacteria infections were confirmed in 2015-2017 in Republic of Moldova. All of them were confirmed from sputum.

**Results.** Most of the cases could be found in presenile patients, mostly in women and high incidence of species *m. fortuitum* followed by *m. kansasii* is revealed

**Conclusions.** The only method of diagnosis available at this moment in our country and abroad ,to confirm the atypical mycobacteria infection was GenoType® Mycobacterium CM test. Most of the cases could be found in presenile patients, almost in women. A high incidence of species *m.fortuitum* followed by *m.kansasii* was found in our country which leads to the most common transmission way of non-tuberculous mycobacteria.

**Key-words:** nontuberculous mycobacteria, clinical manifestations, diagnostic criteria

## 259. CONTEMPORARY DIAGNOSIS OF ONCOVIRUSES

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**Introduction.** The topic of this paper is the contemporary diagnosis of the oncoviruses. The general objective of our research is to develop and deepen the concept of oncoviruses. The key concepts we have worked with are the following: malignant transformations, skin tumors, DNA genome, Epstein-Barr virus, Bor C hepatitis virus, human papilloma virus, cervical cancer, Papanicola test and HPV test.

**Aim of the study.** Identification and analysis of infectious origin of oncoviruses, contemporary diagnosis of oncoviruses, and especially HPV has been investigated. This review summarizes the molecular testing methods currently used for the detection and genotyping of HPV DNA and discusses future potential approaches.

**Materials and methods.** Investigational protocol included: General Blood Test and Biochemical test, Antigen Antibody Test for Epstein-Barr Virus, Abdominal Ecography, CT with Contrast Substances, MRI, Babes Papanicolau Test, HPV Test, Colposcopy, Cervical Biopsy.

**Results.** The results of the study indicate a modern approach with the inclusion of a new research vision in the field of oncoviruses and the determination of a correct diagnosis.

**Conclusions.** Finally, in our opinion, much more information is needed on the prevalence of globally high-risk oncogenic serotypes, information needed both to implement a screening program that includes diagnostic tests for the most prevalent serotypes, as well as for the

establishment of a vaccination program. Further research is also needed to generate data on long-term clinical effectiveness and duration of protection, following 2 and 3-dose regimens.

**Key words:** diagnosis, HPV, oncovirus, colposcopy, oncogene

## DEPARTMENT OF BIOCHEMISTRY AND CLINICAL BIOCHEMISTRY

### 260. INTOXICATION SYNDROME INDUCED BY TRAUMATIC HAEMOPERITONEUM DURING NONOPERATIVE MANAGEMENT

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**Introduction.** Trauma remains one of the medical and social problems with a major impact on the health of the population, especially affecting young people. Thus, 1.24 million people die annually only in road accidents according to the WHO data.

**Aim of the study.** To study intoxication syndrome in trauma patients with haemoperitoneum during nonoperative management (NOM) by means of evaluation of: necrotic substances (NS) and substances with average molecular weight (SAMW), advanced oxidation protein products (AOPP), advanced glycation end products (AGE) and total antioxidant activity (TAA).

**Materials and methods.** Prospective study (2011-2016) included 59 trauma patients with traumatic haemoperitoneum. Time frame of evaluation of biochemical parameters: at hospitalization, at 3-rd and at 5-7-th days. All trauma patients were divided in 2 groups considering haemoperitoneum volume at admission. Group I with haemoperitoneum volume up to 500 ml includes 38 patients ( $n^1=38$ ) and group II with haemoperitoneum volume more than 500 ml 21 patients ( $n^2=21$ ).

**Results.** Mean age of the patients was  $37.6\pm 15.2$  years. M/F ratio: 2.7/1. Trauma scores: ISS=22.9; RTS=7.4; TRISS=90.4%. Mean volume values of hemoperitoneum at hospitalization constitutes  $299,74\pm 182,26$  ml in group I and  $788,1\pm 293,22$  ml in group II with values ranging between 0 and 1500 ml. NS mean values in group I:  $1.96\pm 0.91$ ;  $1.80\pm 0.69$ ;  $1.56\pm 0.39$  c.u.; in group II:  $2.74\pm 2.71$ ;  $1.89\pm 0.91$ ;  $1.55\pm 0.34$  c.u. SAMW mean values in group I:  $20.30\pm 8.58$ ;  $18.27\pm 6.04$ ;  $16.00\pm 3.66$  c.u. ( $p<0,05$ ); in group II:  $25.44\pm 21.93$ ;  $18.46\pm 5.84$ ;  $15.96\pm 3.90$  c.u. AOPP mean values in group I:  $37.87\pm 20.43$ ;  $34.75\pm 17.89$ ;  $27.15\pm 13.28$   $\mu\text{mol/L}$ ; in group II:  $32.14\pm 18.61$ ;  $28.06\pm 17.33$ ;  $24.19\pm 19.52$   $\mu\text{mol/L}$ . Mean values of AGE in group I:  $503.36\pm 176.30$ ;  $476.88\pm 179.10$ ;  $457.95\pm 164.69$   $\text{mmol/L}$ ; in group II:  $522.67\pm 170.96$ ;  $542.33\pm 186.09$ ;  $476.66\pm 155.48$   $\text{mmol/L}$ . TAA mean values in group I:  $0.33\pm 0.06$ ;  $0.33\pm 0.09$ ;  $0.31\pm 0.05$   $\text{mmol/L}$ ; in group II:  $0.35\pm 0.07$ ;  $0.33\pm 0.05$ ;  $0.31\pm 0.06$   $\text{mmol/L}$ .

**Conclusions.** Intoxication indicators (NS, SAMW) in trauma patients with haemoperitoneum during NOM did not exceed normal range values and did not show any significant differences between group I and II. That can be appreciated as lack of intoxication syndrome in patients with traumatic haemoperitoneum during NOM. SAMW in group II showed statistically significant decrease in dynamic, but the values still not exceeded normal ones. Mean values of AOPP, AGE and TAA did not exceed the values of the normal ranges and, generally, did not show significant differences between both groups or in dynamics, suggesting that antioxidant body system is not affected during haemoperitoneum absorption process.

**Key words:** haemoperitoneum, nonoperative management, toxicity

### 261. NITRIC OXIDE: THE SYNTHESIS AND EFFECTS AT THE LEVEL OF RETINA

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**Introduction.** Nitric oxide (NO), the smallest signaling molecule known to be produced by three major isoforms of NO synthase: neuronal (nNOS), endothelial (eNOS) and inducible (iNOS), is receiving nowadays an increased interest considering its role in retinal function and pathology. This review had the intention to summarize some aspects of NO in the retina and suggest new ideas for future research.

**Materials and methods.** Recent retrospective studies that describe the function and implication of NO in pathogenesis of eye diseases were analyzed.

**Results.** The nNOS and eNOS are normally expressed and the NO produced in low quantities at the level of the retina is involved in neurotransmission and in the regulation of retinal arteriolar tonicity. iNOS that is found in Muller cells and in RPE it's not normally expressed and NO produced by it in large quantities is considered to generate inflammation of the retina and even retinal degeneration, that explains its implication in pathogenesis of hypertensive and diabetic retinopathy. NO has many physiological roles in the retina, one of it as a messenger of light-dark adaptation. It is also related to excitatory amino acid and free radical neuronal injury that occurs in the retina after ischemia or to the cell death found in such disorders as glaucoma. Recent studies have shown the implication of NO, in the etiology of ischemia and induced damage in the retina that can be a result of many pathologies or systemic diseases as diabetes and hypertension. Still the involvement of NO in the retinal blood flow in response to hypoxia is still controversial. Patients with hypertension, hypercholesterolemia, diabetes etc. showed an inability of the endothelium to generate adequate amounts of bioactive NO and to produce NO-mediated vasodilation.

**Conclusions.** Many studies performed on NOS in the retina, show us that the roles of different NOS isoforms may be much trickier than previously realized. NO acts as a regulator of different physiological processes. NO appears to have a neurodestructive or a neuroprotective action, or both in pathological conditions such as human neurodegenerative diseases. Future studies on the actions of NO and NOS in the retina will not only give us a better understanding of some processes, but may contribute to the development of pharmacological treatments for various neurodegenerative eye diseases.

**Key words:** retina, NO, ischemia

## **262. CORRELATION BETWEEN TRANS FATTY ACIDS AND CARDIOVASCULAR PATHOLOGY**

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**Introduction.** Current studies reveal the harmful effect of trans fatty acids on cardiovascular health. Each additional gram of trans fatty acids increases the risk of myocardial infarction by approximately 5%. trans fatty acids, in principle isomers (18: 1) have two origins: natural trans fatty acids derived from the bio hydrogenation of ruminant unsaturated fatty acids and industrial trans fatty acids derived from the industrial hydrogenation of unsaturated vegetable oils.

**Aim of the study.** Elucidating the role of trans fatty acids in the mechanisms of production and evolution of cardiovascular diseases by comparing the two origins of trans fatty acids and other types of trans fatty acids.

**Materials and methods.** In order to achieve the proposed goal, the publications from the specialized journals of the PubMed, Medline and Hinari electronic libraries have been used, based on a series of observational studies, system reviews and experiments on diet. The aim of majority of observational studies was the coronary heart disease often in the form of myocardial infarction or fatal or non-fatal stroke.

**Results.** Following the summary of the studies we have concluded: the consumption of industrial trans fatty acids can reduce high density lipoprotein (HDL) concentrations, while increasing at the same time low density lipoprotein (LDL) and very low density lipoprotein (VLDL) concentrations. As a result, increased cholesterol / HDL ratio, which is able to raise lipoprotein concentrations (a), a risk factor for cardiovascular disease, has been detected. Increased inflammation markers, including TNF-alpha, C-reactive protein and interleukin-6, associated with endothelial dysfunction markers that contribute to atherosclerosis and hypertension, have been reported.

**Conclusions.** Epidemiological studies and meta-analyzes of the latest clinical studies have shown that trans fatty acids from industrial sources are responsible for the damage caused in particular by the lipid profile, whereas the trans fatty acids from natural sources have a reduced effect on the lipid profile and other risk factors cardiovascular. However, the mechanisms, the origin of these variations according to isomers is not yet well known and need further studies.

**Key words:** fatty, acids, cardiovascular, VLDL

### 263. LIPID PEROXIDATION IN EXPERIMENTAL OVARIAN TORSION

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**Introduction.** Ovarian torsion is a disease where ischemia/reperfusion injuries have a significant role. The detorsion is required to preserve the affected ovary. As it is known, if one organ is exposed to ischemia, the reperfusion may increase cells lesions due to the enhance of oxidative stress. One marker of lipids exposure to reactive oxygen species is malondialdehyde (MDA).

**Aim of the study.** To determine the changes in MDA levels in ovarian homogenates of female rats that underwent various ovarian torsion/detorsion models and to appreciate the effects of simple and controlled detorsion (reperfusion) on the MDA levels. The experimental protocol was authorized by The Ethics Committee of the "Nicolae Testemitanu" State University of Medicine and Pharmacy.

**Materials and methods.** The subjects of our research were 70 females rats (*Rattus albicans*). The animals were divided into seven groups (n=10): Group 1: no intervention; Group 2: the rats experienced laparotomy only; Group 3: the animals underwent ovarian torsion (ischemia) for 3 hours; Group 4: the rats have borne ovarian torsion for 3 hours succeeded by simple reperfusion for 1 hour; Group 5: the rats underwent 3 hours ovarian torsion and 1 hour controlled detorsion (assured by opening and closing the clips on the ovarian annexes in 10 seconds intervals for 120 seconds, succeeded by 1 hour of simple reperfusion); Group 6: the rats experienced 3 hours ovarian ischemia and 24 hours simple reperfusion; Group 7: the rats were exposed to 3 hours ovarian torsion and 24 hours controlled reperfusion. MDA levels were determined by Галактионова Л. П., et al. method (1998), modified by Gudumac V., et al. (2012). The results were analyzed using ANOVA.

**Results.** The obtained MDA levels were statistically significant high in ischemia group, compared to those rats that underwent only laparotomy. The simple reperfusion groups had a statistically significant high levels of MDA compared to 24 hours controlled reperfusion group.

**Conclusions.** Ovarian torsion and its detorsion involve reactive oxygen species production, that determines lipid peroxidation. Controlled detorsion can diminish this process and decrease the level of MDA that is produced.

**Key words:** ovarian, torsion, malondialdehyde

## **264. EXPERIMENTAL MYOCARDIAL INFARCTION AND INTERLEUKINE-6 MODIFICATIONS**

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**Introduction.** The inflammatory response, manifested as acute necrosis, is induced by ischemia in infarcted myocardium. Myocardial remodelling is one of the complications, which leads to arrhythmias and heart failure. Interleukine-6 (IL-6) is a cytokine involved in tissue remodelling, as well as in the pro- and anti-inflammatory response pathways. Post infarct it promotes myocyte hypertrophy and myocardial dysfunction. In addition, IL-6 inhibits cardiomyocyte apoptosis.

**Aim of the study.** To evaluate serum and homogenate IL-6 level in isoproterenol-induced acute myocardial infarction.

**Materials and methods.** Forty adult male rats (*Rattus albicans*) were divided into five groups: L1 – intact (n=11); L2 – control animals which were administered NaCl 0.9% (n=11); L3 (n=6), L4 (n=6) and L5 (n=6) included the animals with experimental myocardial infarction, reproduced by injecting subcutaneously isoproterenol hydrochloride 100 mg/kg (one dose). Rats were anesthetized, and sacrificed at 6h, 24h and 7 days respectively. For IL-6 assessment, we use standard Rat IL-6 ELISA kit (Beijing 4A Biotech Co. Ltd). The results were analyzed by Kruskal-Wallis nonparametric test using SPSS version 23. Discussion

**Results.** The investigated groups have not presented any statistically significant difference neither in homogenate IL-6 content ( $p = 0.098$ ), nor in serum IL-6 level ( $p = 0,322$ ). At the same time, higher amounts of both homogenate and serum IL-6 were registered in experimental groups compared to intact and control groups.

**Conclusions.** Inflammation plays a significant role in the pathogenesis of myocardial ischemic injury. Infarcted myocardium increases the production of IL-6. Increased IL-6 levels for a prolonged time can indicate associated inflammation and elevated risk of second myocardial infarction. Serum IL-6 level following AMI can be used for the inflammatory process monitoring. In order to prove it the research should be enlarged, and statistical correlations will be performed.

**Key words:** myocardial injury, cytokine, IL-6

## **LABORATORY OF TISSUE ENGINEERING AND CELL CULTURES**

### **265. THE ETHIOLOGY OF THE AVASCULAR NECROSIS OF THE FEMORAL HEAD**

Authors: **Ignatov Olga, Jian Mariana, Cobzac Vitalie**

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**Introduction.** Avascular necrosis (AVN) is the disease characterized by a vascular insult to the blood supply of the femoral head, which can lead to necrosis of the spongiform bone followed by



collapse of the femoral head with degenerative changes. It has been estimated that approximately 10 000 to 20 000 new cases are diagnosed in the USA each year and there are 300 000 – 600 000 people diagnosed with AVN.

**Aim of the study.** To elucidate the actual status in etiology of AVN of femoral head.

**Material and methods.** The following databases were used for articles search: Pubmed, Embrase, Hinary, Web of Science, Medline, Sciencedirect, for searching articles. We have selected and studied 74 articles containing the keywords: AVN of the femoral head, etiology of AVN, genetic disorders in AVN.

**Results.** Traumatic aseptic necrosis of the femoral head appears as results of mechanical disruption of blood flow to the femoral head. The non-traumatic causes of secondary AVN of the femoral head are: chronic alcohol consumption (20–40%), corticosteroid therapy (35–40%), after organ transplant, haematologic disease (anemia, polycythemia, hemophilia, thalassemia), clotting diseases, connective tissue disease, infiltrating diseases; some endocrine diseases (Cushing disease, hyperparathyroidism), metabolic diseases (gout, hyperuricemia, high cholesterol), congenital diseases (congenital sprain hip joint, Legg–Calvé–Perthes disease), Caisson disease, pancreatitis, chronic renal failure, hemodialysis, chronic liver disease, HIV infection, pregnancy, chemo- and radio- therapy, thrombophlebitis. Approximately 10 to 20% of cases do not have any identifiable risk factors and are therefore considered to be idiopathic in nature. It has been shown that some genes are involved in the pathogenesis of AVN: ADH2, ADH3, ALDH2 and P450E1. These genes are involved in the alcohol metabolism and polymorphisms of these genes have been associated with the risk of AVN. Jones et al. found that approximately 82% of patients in their study had at least one coagulation factor abnormality. Familial forms of AVN of the femoral head appear to be very rare, with only a few families reported in the medical literature. Liu et all. noted that a COL2A1 gene mutation in certain families predisposed to development of AVN of the femoral head by autosomal dominant transmission.

**Conclusions.** 1. Avascular necrosis of the femoral head is especially common among young people, affecting mainly men. Often an underlying cause cannot be determined. 2. Aseptic necrosis of the femoral head is a disease whose etiology is not completely elucidated while the actual role of the genetic disorders in this pathology is to be determined.

**Key words:** avascular necrosis of the femoral head, etiology of avascular necrosis, genetic disorders in avascular necrosis

## 266. THE THREE-DIMENSIONAL LIVER MATRIX FOR TISSUE ENGINEERING

Authors: **Mariana Jian<sup>1</sup>, Vitalie Cobzac<sup>1</sup>, Ion Moghildea<sup>1</sup>, Olga Macagonova<sup>1</sup>**

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**Introduction.** According to The World Health Organization in 2012, about one-third of the world's population has serological evidence of hepatitis B infection (VHB). Terminal stage liver disease or hepatocellular carcinoma caused by VHB, leads to 0.5-1 million deaths per year. Worldwide viral hepatitis B is considered the 9th cause of death and represents 5-10% of all liver transplantation. That's why the phenomenon is perceived as significant global issues in public health. The growing of people number who need the liver transplant and the insufficiency of organ donors, as the advancement in bioengineering has enabled the development of new therapeutic strategies which involve generation of functional artificial organ, obtained by the decellularization technology and create extracellular matrix and their subsequent recellularisation.

**Aim of the study.** To obtain a liver matrix by decellularization and to maintain its vascular tree.

**Materials and methods.** As the object of this study served rat livers (n=9) which were subjected to decellularization with sodium dodecyl sulfate solution (SDS) 0.1 and 0.5% and the combination of sodium dodecyl sulfate 0.1% to 0.5% and anticoagulant. Subsequently, the extraction of nucleic acids was performed according to the protocol QIAamp Blood Mini Kit (2003).

**Results.** After the liver tissue decellularization we obtained the liver matrix. The quantification of nucleic acids revealed the existence of a small amount of DNA  $1.04 \pm 0.43$  ng/ $\mu$ l, \* p<0,05 in decellularised matrix with SDS solution and anticoagulant. In case of decellularization by SDS exclusively, we obtained a larger amount of nucleic acids which revealed a less efficient decellularization  $5.2 \pm 2.19$  ng/ $\mu$ l, \* p<0.05.

**Conclusions.** The use of detergent SDS with anticoagulant for decelularisation is more effective method in comparision with only SDS solution, which was proved by quantification of nucleic acids content in decellularised matrix. A more efficient decellularized liver tissue represent a 3D bioconstruction for future recellularisation.

**Key words:** decellularization, recellularisation, liver matrix.

## 267. OBTAINING OF A SUITABLE OSTEOCHONDRAL GRAFT FOR ARTICULAR CARTILAGE ENGINEERING

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**Introduction.** Chondral injuries are common following a knee trauma. There are numerous studies with different ways to obtain a suitable graft for articular cartilage regeneration, but without imposing results.

**Material and methods.** From two freshly sacrificed rabbits the distal femurs were harvested and frozen at -84°C for one week. From each distal femur all tissues except cartilage and subcondral bone were removed and small pieces of normal osteochondral tissue (NOCT) were taken. The remaining osteochondral tissue has been demineralized in 0,6M HCl (Chem-Lab, Belgium) over night and again small pieces of demineralized osteochondral tissue (OCDT) were cutted with a scalpel and placed in a PBS solution for 24 hours. The remaining OCDT were separated in 4 groups. Two groups were decellularized in 0,5% and 1% SDS (Sigma, UK) and another two in 0,5% and 1% Triton X-100 (HiMedia, India). The decellularization lasted for 24 hours. At the next day the decellularized and demineralized osteochondral tissues (OCDDT) were washed with distilled water and PBS for 24 hours. All tissues were dessicated through centrifugation at 4000 rpm for 10 min (Hettich, Germany). From all types of OCT were cutted from three to nine pieces 20 mg each and quantification of DNA was performed with GeneJET Genomic DNA Purification Kit (Thermo Fisher, Lithuania). The results were read with spectrophotometer NanoDrop 2000c at wavelength of 260 nm (Thermo Fisher, USA). The best decellularized tissue and OCDT were tested for cytotoxicity with MTT test (ISO 10993-5) with mesenchymal stem cells and chondrocytes.

**Results.** The average of DNA content in a rabbit NOCT is 36 ng/ $\mu$ l, in OCDT 4,23 ng/ $\mu$ l, OCDDT with 0,5% and 1% SDS is 3,23 ng/ $\mu$ l and 2,16 ng/ $\mu$ l respectively and in OCDDT with 0,5% and 1% TritonX-100 is 1,96 ng/ $\mu$ l and 0,96 ng/ $\mu$ l. At the MTT assay with mesenchymal stem cells and chondrocytes on the OCDT and OCDDT with 1% TritonX-100, we obtained a higher cell viability in both cases more than 80%.

**Conclusions.** Obtaining a suitable osteochondral tissue for cartilaginous tissue engineering is very difficult because this process involves utilisation of a very toxic chemicals that harm this tissue. A shorter exposure period to chemical agents and preliminary modeling of the graft is mandatory. Also the OCDDT with 1% TritonX-100 shows the best results compared to others.

**Key words:** graft, osteochondral, demineralized, decellularized

## **268. THE VOLUME OF THE DENTAL PULP CHAMBER DETERMINED BY USING CONE-BEAM COMPUTED TOMOGRAPHY**

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**Introduction.** Cone-beam computed tomographic (CBCT) imaging is a valuable tool in dental practice. It is widely used in endodontic treatment for the root canal morphology examination. Therefore, the purpose of this study was to use CBCT to calculate the volume of the pulp chamber at different tooth groups.

**Aim of the study.** of this study was to verify whether clinical use of CBCT imaging can accurately acquire parameters concerning molar pulp chamber landmarks, which are important data to help start a successful way to calculate the number of stem cells in the dental pulp.

**Material and methods.** This study conforms to protocols approved and in accordance with the ethics committee's requirements, informed consent was obtained from each patient. Morphologic measurements of 120 maxillary and 120 mandibular molars (from 40 patients, aged 18–45 years) were included in this study. CBCT images were taken using a Kodak 9500 (Dental Systems, Carestream Health) operated at 90 kVp with a voxel size of 300  $\mu$ m and a field of view of 90  $\times$  150 mm. All scans were taken following the manufacturer's recommendation protocol. According to the examination requirements, C-shaped roots, single-rooted molars, crowned teeth, and teeth with caries and/ or restorations violating the pulp chamber were excluded. All measurements were taken on the coronal plane view.

**Results and discussion.** In the present study, we used CBCT imaging to gather information regarding pulp chamber volume. With the scanned 3-dimensional images, we were able to clinically determine the pulp chamber parameters using a standardized and defined spatial approach.

**Conclusions.** The data we collected here serve as a proof of principle for the analysis of dental landmarks before collecting stem cells. In this particular study, existing CBCT scans were used to provide useful information that can be used as a guide for determine volume of the pulp chamber.

**Key words:** stem cells, cone-beam computed tomographic imaging, pulp chamber

## **269. GRAFTS OF THE CORNEA IN PEDIATRICS**

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**Introduction.** Transplantation of the cornea in pediatrics remains a challenge. In 2008, Edward Wilson, from South Carolina, relates that the keratoplasty with the stem cell transplantation around the cornea induces the immune modulation and allows only a part of the cornea to be grafted and being more beneficial in the adults. All these advances improve the transplantation of

the cornea in the children. However, new surgical methods are not available for the small patients.

In 2007, Edward J. Holland, a professor at the Department of Ophthalmology, University of Cincinnati, USA, says that the children are difficult to investigate because they do not complain about their symptoms as an adult, and their immune system increases the chance of a transplant rejection. That's reason of the keratoplasty in the adults is in progress. He also mentions that the endothelial keratoplasty can be used whether the Descemet's base layer is intact.

Currently, in the Republic of Moldova, from 2012, specialists prepare the various grafts in the Bank of Human Tissues, such as bone, tendon, skin, amniotic membrane, stem cells and cornea. In 2013, the first transplant of the cornea was successful in the Municipal Clinical Hospital "H. Trinity". The most of the grafts of the cornea was transplanted in the adults using the transfixing and endothelial lamellar keratoplasty. The children are less likely to have surgery, the causes of which are the technical deficits. In the Medical Center "Ovisus" two children with the age over 11 years old were operated. The diagnosis was "Penetration of the cornea with the foreign bodies". The cornea were released from the Human Tissue Bank and had a number of over 2700 endothelial cells per mm<sup>2</sup>, useful for transfusion keratoplasty. The dynamic results of transplantation are positive with the restoration of the vision.

**Conclusions.** The development of the associations of eye banks enables us to promote new techniques of the sampling and preservation of the cornea, which allow us to maintain the quality of the graft, and the pediatric ophthalmology will increase the spectrum of the surgical interventions.

## **270. THE ROLE OF TISSUE REGENERATION GUIDED IN PROSTHETIC TREATMENT**

Author: **Radu Voinea**

Scientific advisers: Associate Professor Dr. Dorina-Cerasella Șincar, University Assistant Dr. Ada Ștefănescu

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**Introduction.** Guided tissue regeneration aims to replace soft or hard tissues with biocompatible materials in order to complete bone defect and stimulate tissue repair.

**Aim of the study.** Bringing to the forefront, surgical interventions that aim to replace soft or tough lost tissues, with biocompatible materials that complement the bone defect and stimulate tissue repair.

**Materials and methods.** A study was conducted considering the paraclinical records / examinations of patients who have presented themselves at a private clinic during a period of 2 years and have received bone additions for prosthetic purposes. The patients were treated between March 2015 and April 2017. The results were statistically processed using the Microsoft Office Excel program and Quattro Pro ( $p < 0,05$ ).

**Results.** The study group consisted of 22 patients aged between 35 and 70 years old. Distribution by sex was predominantly male, with 72.7% (16 men, 6 women).

**Conclusions.** It was found that allograft showed better integration, the resorption rate being lower than in the case of using xenografts. Good integration of bone additions has been achieved, indicating the utility of these types of therapeutic maneuvers in prosthetic treatment.

**Key words:** tissue regeneration, biocompatibles, bone defect

## **271. BLOOD VESSEL DECELLULARIZATION – CHALLENGES AND PERSPECTIVES.**

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**Introduction.** Cardiovascular disease is a general term for conditions affecting the heart and circulation. It is the number one cause of death globally. It is predicted that the annual incidence of cardiovascular disease - related mortalities will rise to 23,3 million globally by 2030. Developed disorders are often associated with the narrowing or blockage of the luminal diameter leading to inhibited blood flow through the affected vessels and tissue damage due to inadequate nutrient supply. The treatment options depend on the type of condition the person has and may range from dietary and lifestyle modification to pharmaceutical therapies and endovascular or surgical interventions.

Despite advantages and increased popularity of endovascular surgery, the preferred treatment for the long term revascularization is surgery utilizing vascular grafts. Currently available conduits for vascular grafting do not satisfy completely surgeons' requirements due to poor clinical efficacy, especially in small diameter vessels applications (< 6 mm). Therefore, tissue-engineered materials are the only alternative solution through the generation of biologically based functional vessels.

**Aim of the study.** To provide an overview of decellularization techniques employed current to produce a clinically viable tissue-engineered vascular grafts; to highlight both benefits and drawbacks of each strategy.

**Materials and methods.** Articles containing the keywords: Cardiovascular disease; Tissue-engineered vascular grafts (TEVG); Vessel decellularization; Decellularization reagents; Mechanical properties of vessel substitutes were selected from the PubMed and Springer Link databases.

**Results.** The use of biological scaffolds composed by extracellular matrix (ECM) as a strategy for tissue or organ replacement has increased. One technique that has shown good results in several tissue engineering applications, including blood vessels, is the use of decellularized scaffolds. Decellularization is the complete removal of all cellular and nuclear matters from a tissue while preserving ECM, and can be done by using detergents, enzymatic digestion, or mechanical stimulation. Decellularization process induces the loss of the major histocompatibility complex while avoiding any adverse immunological reactions by the host. It allows the use of decellularized biological tissue not only as autografts but also as allografts and xenografts.

**Conclusions.** It is confirmed that the decellularization process is suitable for the generation of acellular scaffolds for vascular tissue engineering applications. However, the best technique that allows the preservation physicochemical properties similar to fresh vessels is yet to be determined. Researches and clinical trials should be continued in this field.

**Key words:** cardiovascular disease; Tissue-engineered vascular grafts (TEVG); Vessel decellularization; Decellularization reagents

## DEPARTMENT OF MOLECULAR BIOLOGY AND HUMAN GENETICS

### 272. GENETIC ASPECTS OF HIRSUTISM

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**Introduction.** Hirsutism is the exaggerated increase of terminal hair in women, developing a male model. Hirsutism is an important medical problem, not just a cosmetic defect, which currently affects about 5-15% of women. The researchers have shown that the impact of hirsutism symptoms on a woman's quality of life can be profound and can lead to psychological stress that threatens her feminine identity. Despite a large number of published works, some aspects of hirsutism are still controversial or underestimated. The treatment of hirsutism often requires a multidisciplinary approach and a variety of physical or pharmacological modalities can be used with the combination of 2 or more drugs in combination with esthetic treatment, depending on the involved etiopathogenetic mechanism.

**Aim of the study.** Evaluation of the molecular-genetic bases of hirsutism, the study of clinical polymorphism and the management of women with hirsutism.

**Materials and methods.** Online databases, meta-analyzes, scientific papers in theoretical and practical medicine were used.

**Results.** Following the analyses of the scientific papers we highlighted the main etiological factors of hirsutism: ovarian (93% PCOS, <1% androgendependent tumors, <1% luteoma); adrenals (<1% CAH, <1% Cushing syndrome, <1% androgen secretory tumors, 1% acromegaly) and other external factors (<1% iatrogenic, <1% androgenic drugs). The genetic approach has noted the involvement in the development of hirsutism of mutations in 5 major genes encoding important enzymes in androgen metabolism: 21-hydroxylase, P450 cytochrome oxidoreductase, aromatase, 11-beta-hydroxylase, 5 alpha reductase. The diagnosis of hirsutism is based on a detailed anamnesis, the objective exam using the Ferriman-Galway scale, seric markers, additional genetic and paraclinical tests. Ovarian suppression of androgens secretion with oral contraceptives is widely used in these women, but its efficacy is limited. One of the most effective medical therapies for hirsutism is medication with anti-androgens (spironolactone, finasteride, flutamide, etc.)

**Conclusions.** Hirsutism is a current medical problem that affects women's quality of life. PCOS (polycystic ovary syndrome) is the most common cause of hirsutism. The management of a woman with hirsutism requires a multidisciplinary approach - family doctor, endocrinologist, gynecologist, dermatologist. The treatment is indicated according to the etiopathological, individualized mechanism, treatment strategies can be included with the combination of 2 or more drugs. Aesthetic and maintenance treatment is not excluded.

**Key words:** hirsutism, PCOS, Ferriman-Gallwey, oral contraceptives, anti-androgens

## 273. GENETIC ASPECTS OF FEMALE INFERTILITY

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**Introduction.** Female infertility is defined as the inability to conceive after one year of regular unprotected intercourse for women younger than 35 years and within 6 months for women after 35 years. One in seven couples experiences infertility or subfertility, and in 40% of cases it is because of women. Clinically, female infertility is a highly heterogeneous pathology with a complex etiology that includes environmental and genetic factors. It is difficult to assess accurately the overall magnitude of the contribution of the genetics to female infertility as most, if not all, conditions are likely to have a genetic component. Nethertheless, a significant number of infertility phenotypes have been associated with specific genetic anomalies.

**Aim of the study.** - This review aims to summarize current research on genetic diagnosis and genetic causes of female infertility.

**Material and methods.** It has been used online databases and scientific articles that contain studies of female infertility.

**Results.** All genetic defects can be divided into the following categories: chromosome aberrations, DNA copy number variants (micro deletions and duplications), single-gene disorders, complex conditions and epigenetic disorders. Chromosome abnormalities account for almost 60% of all spontaneous abortions, and the most common type, trisomy, is closely associated with advanced maternal age. There are 2 forms of female infertility: primary and secondary. Primary female infertility includes premature ovarian failure, polycystic ovary syndrome, endometriosis, and leiomyoma. Secondary infertility arises due to systemic or syndromic genetic defects, including developmental, endocrine, and metabolic defects. Genetic syndromes that manifest female infertility are fragile X syndrome, Noonan syndrome, sickle cell anemia, etc. Other notable conditions include disorders of sex development (SRY), reproductive dysgenesis disorders hypogonadotropic hypogonadism and Kallmann syndrome (KAI1, GNRH1, LEP) , and ambiguous genitalia an androgen insensitivity (AR). Endocrine defects comprise disruption of steroid synthesis and metabolism, and are caused by CYP17 and CYP19 mutation. Also, various metabolic defects (e.g., galactosemia ) and mutation in mitochondrial energy pathway (mitochondrial DNA genes) cause toxic effects and lead to secondary female infertility.

**Conclusions.** The genetics of infertility is very complex and is dependent on different factors. Clearly the hope is that a greater understanding of the genetic control of infertility will bring low-risk treatment regimens that are effective and easy to administer.

**Key words.** Female infertility, chromosome aberrations, hypogonadotropic hypogonadism, premature ovarian failure

#### **274. NEW COPY NUMBER VARIANTS DISCOVERED IN PATIENTS WITH OBESITY AND INTELLECTUAL DISABILITY**

Author: **Sergiu Osan**

Scientific adviser: Lecturer Diana Miclea; Lecturer Camelia Alkhzouz

*Iuliu Hatieganu* University of medicine and Pharmacy, Cluj-Napoca, Romania

**Introduction.** Intellectual disability (ID) is a neurodevelopment disease characterized by intellectual and adaptive impairment, defined by intelligence quotient (IQ) under 70 and can be affirmed after the age of 6. Until this age, the retard is named development delay (DD). This condition is found in 2-3% of individuals in general population, and 50% of these cases are associated with other clinical features, like pediatric obesity. The genomic study using microarray chromosomal techniques revealed in about 20% of intellectual disability patients a genetic cause of copy number variants (CNVs) type, duplication or deletion, but there is a lack of data about CNVs found in patients with ID/DD associated with obesity.

**Aim of the study.** To find CNVs that could be responsible for the ID/DD associated with obesity phenotype, in 36 Romanian pediatric patients, recruited from the Clinical Emergency Hospital for Children, Cluj-Napoca, Romania.

**Materials and methods.** We used SNP array technique, Infinum OmniExpress 24V1.2 in order to detect CNVs. Data analysis was made using Genome Studio, and the interpretation of the data was performed using UCSC data base (Decipher, ClinVar, Omim and Gene Reviews).

**Results.** We found relevant genetic alterations in 15 patients (42%). Several of them presented deletions and duplications that were described before in international databases, but potential pathogen CNVs not described before were also detected. Therefore, we describe a deletion inside KANSL1, the gene responsive for Koolen-De Vries syndrome, a small deletion in OTC gene, a 8p23.1 duplication in BLK gene and also a patient that presented two uniparental disomies, for chromosome 7 and 13.

**Conclusions.** In this research, we found that 42% of the patients with obesity and intellectual deficiency were carriers of pathogenic genetic abnormalities that can explain their symptoms. Although some of the patients presented classical variants described in literature, some of our findings are variants that were not previously described or were described in very few cases.

**Key words:** obesity, Intellectual, developmental, copy number variants

## **275. PRENATAL DIAGNOSIS OF CONGENITAL MALFORMATIONS OF THE BRAIN IN PREGNANCIES WITH GENETIC RISK**

Author: **Olga Tihai**

Scientific advisor: Mariana Sprincean<sup>1,2</sup>, MD, PhD, Associate professor, Department of Molecular Biology and Human Genetics<sup>1</sup>;

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**Introduction.** The medical-genetic counseling is one of the most widespread and effective methods of prenatal diagnosis (PD) and prophylaxis of congenital and hereditary pathologies.

**Aim of the study.** To highlight the role of medical-genetic counseling and prenatal diagnosis in pregnancies with risk for malformations of the brain (MB) at early stages of intrauterine development to reduce the incidence of congenital MB in newborn.

**Materials and methods.** The medical-genetic counseling of the 657 pregnant women during 2015-2017 years, which were divided into two groups: a) I group - 239 women with medium and high genetic risk; b) the II group - 418 women with low genetic risk.

**Results.** All pregnant women in the study performed noninvasive PD: ultrasound and biochemical screening. In 49 cases the values of serum alpha-fetoprotein were elevated. Examination of pregnant women on informative terms by non-invasive prenatal diagnosis (fetal ultrasonography) allowed the diagnosis of MB to fetuses in 33 cases. Cerebral fetal malformations diagnosed prenatally through the ultrasound examination were: spina bifida - 6 cases, anencephaly - 5 cases, holoprocencephaly - 5 cases, corpus calosum agenesis - 7 cases, hydrocephaly - 4 cases, Dandy-Walker malformation - 3 cases, schizencephaly - 1 case, lissencephaly - 1 case. The medical-genetic counseling were provided to couples. The final decision to interrupt the pregnancy was made by couples. A prophylaxis plan was developed in families with genetic risk.

**Conclusions.** PD and medical-genetic counseling help to reduce the frequency of congenital malformations in newborns also makes it possible to prevent the birth of children with CM and chromosomal abnormalities diagnosed prenatally until 21 weeks of gestation.

**Key words:** congenital malformations of the brain, prenatal diagnosis, medical-genetic counseling

## **276. MULTIPLE EXOSTOSIS - CAUSES AND POLYMORPHISM**

Author: **Stefan Cretu**

Scientific adviser: Dumitru Amoasii, MD, PhD, Associate Professor, Department of Molecular Biology and Human Genetics

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**Introduction.** Multiple exostosis is a genetic bone disease characterized by the development of osteochondrograms present in the form of long-bone bosal These bone-to-bone bumps have different shapes and are formed in restricted populations whose populations suffer from mutation in comosome 8 manifested by the lack or insufficiency of the exostosin-1 protein.



**Aim of the study.** The purpose of this study was to present the. Clinical and genetic study of multiple exostosis, moreover the correlation between the genetic and clinical aspects of the disease.

**Material and methods.** The study includes the experience of surgical treatment of 11 patients, clinically confirmed, radiologically, morphologically confirmed in the conditions of the orthopedic and traumatology clinic of "N. Testemitanu".

**Results.** The difference in localization of the pathological outbreak, on the right or left side, is almost equal. The solitary formations in 73.03% were located on the humerus, tibia and phyllus and 26.97% in the other bones of the skeleton: the humerus - 1, the radius - 2 ulna - 1, the femur - 3, the tibia - - 2, calcaneus - 1. Pathological focal areas of the clavicle, scapula, humerus, radius, ulna, femur, tibia, fibula, cuneiform bone, calcaneum were removed in patients with multiple pathology as indicated. The particularities of this disease usually allow sparing surgery - marginal resection in the affected bone region (93%), without the need for osteoplasty, and only 7% performed other types of resection. In all cases, the resection piece was studied patomorphologically in a specialized laboratory.

**Conclusions.** Given that the prevalence of the disease in Moldova according to Ministry of is estimated at 1:35 000 individuals it has been difficult for me to analyze the patients because the vast majority of them are operated and in short type are dispensed. At the same time, we noticed that a patient had relapses, so the number of surgeries a patient needs during his life varies from one person to another. Treatment of the disease is by removing very bulky exostoses, which causes pain, joint limitations, nerve or vascular compressions or massive bone deformities. A careful follow-up of the affected person allows to determine the optimal moment of intervention and prevent complications such as joint dislocations. With some issues related to unsightly appearance or reduced functionality of some skeletal segments, this disease is compatible with normal life.

**Key words:** exostosis, polymorphism, humerus

## DEPARTAMENT OF HISTOLOGY, CYTOLOGY AND EMBRYOLOGY

### 277. SOME ASPECTS OF ADRENAL STRUCTURE AND FUNCTIONING IN THE FETUS

Author: **Victoria Cepraga**

Scientific adviser: Elina Pelin, MD, PhD, Associate professor, Department of Histology, Cytology and Embryology

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**Introduction.** In adults, the adrenal gland consists of two parts: the outer one - the adrenal cortex and one in the inside - the medullary adrenal. The epithelial cortices of the adrenal cortex are arranged in three areas: the glomerular area, which specializes in the production of mineralocorticoids (the main representative being aldosterone), the fasciculating area producing glucocorticoids (cortisol, cortisone) and crosslinked area possessing the ability to deliver sex hormones androgens, estrogens).

**Aim of the study.** Description of physiological and histological changes occurring in the adrenal glands of the fetus.

**Conclusions.** The adrenal glands have an important role in the prenatal period, contributing to the development of the fetus as well as throughout life. From a histological point of view, the adrenal glands at the fetus have a different structure from the adult, which is represented mostly by permanent and temporary fetal cortical and a disorganization of the medullary substance.

**Key words:** adrenal gland, cortex, medullar.

## 278. IMMUNOHISTOCHEMICAL MARKERS SPECIFIC FOR PRIMARY CARDIAC TUMORS

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Scientific adviser: Lilian Saptefrati, MD, PhD, Professor, Chair of Department of Histology, cytology and embryology

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**Introduction.** Immunohistochemistry provides useful information in the study of tissues and cells, using antibodies to identify antigens of the examined tissue samples. In the last decades, special attention has been given to immunohistochemical markers, due to their specificity and high sensitivity in identifying the histological origin of tumors. This is useful in performing differential diagnosis and establishing the definitive diagnosis of cardiac tumors, which facilitates the determination of treatment tactics and the prognosis of pathology.

**Aim of the study.** In this paper, we aim to analyze the literature and to make a synthesis of the immunohistochemistry particularities in the study of cardiac tumors, namely the identification of the immunohistochemical markers characteristic for each histological type of cardiac tumor.

**Materials and methods.** We reviewed the pertinent literature by a selective PubMed search on the terms “cardiac tumor”, “immunohistochemistry”, “immunohistochemical markers”. We analyzed not only various scientific articles, but also specialty books by renowned authors.

**Conclusions.** Each cardiac tumor has its immunohistochemical markers depending on the tissue from which it is formed. Knowing these markers facilitates identification of the studied tissue. Our review study revealed that unlike benign tumors, malignancies exhibit positivity for cell proliferation markers (Ki-67, PCNA). It is important to mention that the use of immunohistochemical markers of cardiac tumors allows performing differential diagnosis, the establishment of a definitive diagnosis, the right choice of treatment and the determination of the prognosis of the pathology.

**Key words:** cardiac tumor, immunohistochemical markers, immunohistochemistry

## 279. THE FUNCTIONAL PROFILE AND THERAPEUTIC APPROACHES OF THE TUMOR ASSOCIATED MACROPHAGES

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**Introduction.** Macrophages are one of the most flexible immune cell of our body. Recent studies have elucidated their involvement in the tumour pathology too. There are two types of macrophages: M1 (pro-inflammatory) and M2 (anti-inflammatory). Macrophages that populate the tumours undergo morphologic changes and are called tumour-associated macrophages (TAM). It is assumed that these cells express a phenotype M2, which are responsible of tumorigenesis and metastases. Furthermore, TAM interact with many cells, as effector T-cell, neoplastic cells, endothelial cells, etc. Through these interactions, these cells can promote angiogenesis, metastasis, cancer cell stemness, also chemotherapeutic resistance, immunosuppressive functions.

**Aim of the study.** This review will study the polarization states of macrophages, their functional profile and role in cancer, and therapeutic approaches of the tumour-associated macrophages.

**Results.** Among the innate and adaptive immune cells that are involved in the tumour microenvironment, macrophages are particularly abundant and are present in all stages of tumour progression. M1-like TAM are stimulated by LPS, IFN- $\gamma$  and/or GM-CSF that produces a variety

of pro-inflammatory and thereby anti-tumour cytokines and chemokines. M2-like TAM are stimulated by tumour-derived like interleukines: IL-4, IL-13, IL-10, M-CSF and/or lactic acid. Consequently, M2-like TAM secrete a spectrum of anti-inflammatory and pro-tumour cytokines, chemokines and signalling molecules. Therefore, TAM could be either tumour killing (M1) or tumour promoting (M2); this data suggests that macrophages are attractive targets for improving of new combined immunotherapy to the fight cancer. Combining inhibitors that target the CCL2-CCR2 and CSF1-CSF1R reduces macrophage migration and pro-tumour activation, so this fact stops tumour growth and metastasis formation. More than that, the inhibitors supplies chemotherapeutic regimen in early phase clinical trials.

**Conclusions.** Certainly, macrophages play an important role in tumour progression and metastasis due to the plasticity they express during activation, especially in vivo. Current approaches to cancer immunotherapy using macrophages involve multiple cytokines and chemokines that can cause immune responses. The application of these therapies have been shown to reduce tumor size and angiogenesis, recruit immune cells to the tumor site, and prevent the polarization of macrophages to an M2 phenotype.

**Key words:** tumor associated macrophages, macrophage polarization, tumour, immunotherapy

## 280. THE IMPACT OF DEMYELINATION ON THE NERVOUS SYSTEM

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**Introduction.** The present study is devoted to vascular disorders, which cause cerebral circulation disorders, which are manifested by morphopathological changes of the vascular nervous system. Research done is necessary not only from the point of view of theory, but it is also important for practical neurology, for a correct assessment of the changes, produced within norms and in various pathologies.

**Aim of the study.** To study the paravasal and adventitious neuroreceptors of blood vessels in some vascular disorders.

**Materials and methods.** This study was made possible by the use of various classical and contemporary histological techniques (macroscopic, microscopic, histological, histochemical) exploration.

**Results.** By investigating the cerebral blood vessel receptor, we mention that in vascular affections the nerve elements in the blood vessels undergo different changes. Nerve fibers, as well as receptors with signs of excitement and even degeneration, have been found on various portions of the vessels in their nervous system. There are reactive changes in the nervous system of the wall of the arteries and their branches. The most pronounced changes are supported by the sensory composition of the vessel's nervous system. Many nerve fibers are intensively impregnated with silver. They become thicker, and sinuous. Various forms of varicose thickening appear along them. The most common are in the composition of adventitial nerve bundles and nerve plexus. Such fibers are intensely colored and thicker, and there are sometimes well-defined thickenings (excitation reaction). Much more pronounced structural changes occur on nerve fibers outside vascular nerve plexuses, which are manifested by impregnation with the presence of well-pronounced thickened portions and thin sections of fibers, which sometimes break. The preterminal portions of the nerve fibers are modified differently. The most common are sinuous, intensely colored, deformed. Also, the terminal portions of the receptors, which are manifested by the appearance of pronounced coloration, to the irregular shape of the thickening, are also modified. Myelin nerve fibers show signs of pronounced argentophilia and uneven

outlines, sometimes irregular thickening. Amielin nerve fibers are distinguished by the presence of a large number of varicosities.

**Conclusion.** In conclusion, we can mention that, by studying the nervous structure of the brain's vascular system in the conditions of chronic and acute vascular pathology, changes were detected, which in fact denotes the presence of the reactive and destructive phenomena of the related nerve fibers. The reversible changes are also noted by the receiver in the reflexogenic areas of the vessels.

**Key words:** nervous system, blood vessels

## 281. GENETIC ASPECTS IN PARKINSON'S DISEASE

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Scientific adviser: Svetlana Capcelea, MD, PhD, Associate professor, Department of Molecular Biology and Human Genetics

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**Introduction.** Parkinson disease is a progressive disorder of the nervous system. The disorder affects several regions of the brain, especially an area called the substantia nigra that controls balance and movement. Although the etiology of Parkinson disease is still unclear, most cases are hypothesized to be due to a combination of genetic- 10% and environmental factors.

**Aim of the study.** Evaluation of the genetic and environmental factors in etiopathogenesis of Parkinson's disease. Study of the molecular mechanisms involved in the etiology of PD; Evaluation of the major genes for higher risk of PD; Estimating the role of environmental and genetic factors in the onset, development and prognosis PD; Prospects survey prevention and treatment of PD.

**Materials and methods.** Scientific articles review.

**Results.** A total of 18 loci in various genes have now been proposed for PD. Mutations within 6 of these loci (SNCA, LRRK2, PRKN, DJ1, PINK1, and ATP 13A2) are well-validated causes of familial parkinsonism. Inheritance is autosomal dominant for SNCA and LRRK2. Inheritance is autosomal recessive for PRKN, DJ1, PINK1, and ATP13A2. Stem cell therapy for Parkinson's disease (Embryonic Stem Cells/ induced Pluripotent Stem Cells (iPSCs) that are adult cells (e.g. skin cells)) is a potential treatment for PD, because the most significant neuronal degeneration is site and type specific (ie, dopaminergic); the target area is well defined (ie, striatum); postsynaptic receptors are relatively intact. Gene therapy has distinct theoretical advantages over conventional treatment for Parkinson's disease as it might preserve or restore dopaminergic neurons through the use of growth factors or alternatively increase the availability of enzymes required for dopamine synthesis.

**Conclusions.** Neurodegeneration in PD is due to three interrelated molecular mechanisms: changes oxidative, mitochondrial dysfunction and degradation of proteins affected. Major genes are involved in Parkinson disease: SNCA, LRRK2, PRKN, DJ1, PINK1, ATP13A2, GBA. Environmental and genetic factors play an important role in the onset, development and prognosis BP, and they can vary from one patient to another and will depend on the root cause. Perspectives in prevention and treatment of PD are presymptomatic screening and gene therapy.

**Key words:** Parkinson's disease(PD), genetic factors, environment factors, stem cell therapy, gene therapy

## DEPARTMENT OF MANAGEMENT AND PSYCHOLOGY

## 282. THE IMPACT OF IMPLEMENTATION OF MEDICAL INSURANCE ON HEALTH INDICATORS OF POPULATION IN THE REPUBLIC OF MOLDOVA

Author: **Nicolae Bobescu**

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**Introduction.** Medical insurance is a form of health care based on principles of solidarity, constituted by pre-established payments with the purpose of covering the treatment costs of insured events. By estimating the total risk of a group of people, an insurer can develop a stable funding structure, based on annual/ monthly contributions that will form a budget. It's administered by an organization, such as a government agency, a private business, or a nonprofit organization. Health care has a major relationship with the economic activity of a state. It provides directly healthy workforce and social welfare, depending on the attention given to it. Following the evolution of the insurance system in a state, we can assume how the healthcare reforms will be developed in future. Medicine has a direct influence on the social and economic activity of the Republic of Moldova (RM), which requires a thorough analysis of the evolution of the health system in order to realize once again what stage we are and what should be done.

**Aim of the study.** To determine the impact of implementation of medical insurance on health indicators of population in the Republic of Moldova.

**Materials and methods.** We evaluated the evolution of health indicators in RM before and after implementation of medical insurance and reported them to other countries by making a comparative and descriptive analysis.

**Results.** Before adopting the medical insurance, healthcare budget was totally dependent on the state budget. The last one was weakened because of the instability of economic relations with other states, the closure of factories, migration of population. Under these conditions, the budget allocated to health decreased between 1996-1999 by 31%, per capita being allocated below 10\$. Healthcare expenditure of GDP experienced a surprising drop from 6,69\$ in 1996 to 2,9% in 1999. Following the implementation of health insurance, the medical system raised. RM invested 10% of GDP for health in 2015, even over some European countries. The total health expenditures were 12.36 billion lei, and the total income in the insurance funds was 5.1 billion lei, compared to 361 million lei in 1999. However, the economic crisis caused the massive devaluation of the national currency in 2015 reduced total health spending in dollars by 17.67%. All this happened despite the fact that the budget in national currency has increased.

**Conclusions.** The health system after the implementation of the medical insurance has made a significant progress but has always been negatively influenced by the low economic development of the country. What again emphasizes the interdependence between economic, social and medical factors. Positive evolution of health budget should always be reported to an international currency, in order to avoid mistakes of interpretation due to fluctuations of the local economy.

**Key words:** Health insurance, health indicators, budget evolution

## DENTAL MEDICINE

### DEPARTMENT OF ORAL AND MAXILLO-FACIAL SURGERY AND ORAL IMPLANTOLOGY *ARSENIE GUȚAN*

#### 283. INFLAMMATORY ODONTOGENIC CYSTS: ETIOLOGY, DIAGNOSIS AND TREATMENT

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**Introduction.** A cyst is defined as a pathological cavity lined with epithelium and odontogenic or non-odontogenic origin, showing fluid or semi-solid contents inside. Odontogenic cysts are the most common osteolytic lesions (90% to 97% of reported cysts) in the oral region. Its growth is slow, from remnants of odontogenic epithelium of Malassez. The inflammatory cysts can be classified as: inflammatory periapical cyst (apical radicular cyst and lateral periodontal cyst or apical), residual cyst and cyst paradental. All odontogenic cysts, with the exception of inflammatory periapical cyst and lateral radicular cyst should be treated with surgical intervention. The periapical cystic lesions are usually treated by conservative endodontic treatment (periapical curettage) or surgical treatment (enucleation, marsupialization and decompression). Some inflammatory periapical cysts are reversible only with endodontic therapy. The prognosis is also good, when the inflammatory periapical cyst is removed by surgery because of periapical tissue repair occurs.

**Aim of the study.** The current study mainly aims to deepen the knowledge regarding the types of inflammatory odontogenic cysts, describing its characteristics and main aspects and highlighting the importance of the differential diagnosis for the treatment of these lesions.

**Materials and methods.** For the study were selected 499 patients with different kind of cysts in oral and maxillo-facial region in the OMF surgery department from 2010 till 2014. Among them 268 were men and 231 were women of different age.

**Results.** Following this study, we noticed that women are less affected than men, so it has been found that the maxilla is also more often affected than the mandible. The analysis of the treatment methods applied to the jaw cysts patients showed an increased rate of use of cystectomy (90%).

**Conclusion.** The inflammatory odontogenic cysts are interosseous lesions that affect the regions of maxilla and mandible. Although asymptomatic and benign, due to its continuous increases, these lesions can become destructive, because they affect and infect the adjacent bone and thus should be treated appropriately. In this sense, it is crucial for diagnosis and treatment planning usually requires a detailed analysis of the clinical, radiological and histopathological examinations.

**Key words:** odontogenic, inflammatory, cyst

#### **284. THE MINIMAL-INVASIVE APPROACH IN ILIAC CREST HARVESTING FOR ALVEOLAR BONE RECONSTRUCTION IN THE CONTEXT OF IMPLANT-PROSTHETIC REHABILITATION. CASE REPORT**

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**Background.** The implant-prosthetic rehabilitation in conditions of bone atrophy supposes a bone augmentation surgery with biomaterials of various origins. The optimal mixture of grafting material is considered to be a mixture of 50/50% of autogenous and xenogenic bone. Often the necessary quantity of autogenous graft is difficult or impossible to harvest from intraoral sites. The iliac crest represents a very important bank of bone tissue for reconstructions, from quantitative and qualitative points of view. The classic method of iliac crest bone harvesting consists in making of an extended incision, of 5-7 cm, with its dissection and exposure, in order to harvest the cortico-cancelous blocks, used in the reconstruction itself or milled. This invasive method has an increased risk of complications such as pain, gait disturbance, sensitivity disorders, hernia of abdominal organs, hematoma, iliac crest fracture etc.

**Aim of the study.** Evaluation of minimally- invasive method of harvesting the cortico-cancelous graft from iliac crest with using cylindrical device.

**Case report.** The study was axed on a patient of 34 years old, who suffered an accidental fall trauma at the age of 22, resulted in avulsion of superior incisors with horizontal and vertical defect of alveolar bone. To restore the defect, a bone augmentation using GBR technique with particulated autogenic and xenogenic grafting material has been performed, in relation of 50/50%, 7 cm<sup>3</sup> in volume. The autograft, harvested from iliac crest with minimally- invasive approach, was particulated in bone-mill. For the graft stabilization, a resorbable membrane fixed with screws was used.

**Results.** The wound healing in receptor site took place in conventional terms, without peculiarities, but on the donor site a faster healing and an insignificant scar formation has been noticed. The clinical and radiological examination (panoramic X-ray, CBCT) at 3 month post-operative period showed a good bone volume formation, absence of complications both on the donor and receptor sites. The advantage of the used method comparatively to the classical one consists in following: the incision line reduction, limited decoloration with minimal trauma of soft tissues; directed bone graft harvesting in the inter-cortical space, that has reduced the traumatic impact on iliac crest, avoided fracture, hematoma, peritoneum perforation or abdominal organs hernia. By this way, the morbidity of donor site has been significantly reduced and allowed early rehabilitation of the patient.

**Conclusions.** The minimally- invasive method of iliac crest bone harvesting is easy and rapid, well-accepted by the patient and with good results and reduced morbidity.

**Key words:** autogenous bone, GBR- Guided Bone Regeneration, minimally- invasive

## 285. CONTOUR BONE AUGMENTATION IN IMPLANT-PROSTHETIC REHABILITATION

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**Introduction.** In cases of moderate lateral atrophy of the crest bone splitting, sausage technique or other grafting procedures like bone blocks are recommended. However, in case of ridge expanding, subcrestal positioning of implants is necessary while in case of bone blocks the terms of rehabilitation are longer.

**Aim of the study.** To evaluate the possibility of contour buccal grafting with simultaneous implants placement in one and two surgical steps.

**Materials and methods.** The study was performed on 5 patients in which 10 implants were installed in one and two surgical steps in the lateral sides of the jaws. Due to horizontal bone atrophy, grafting procedures were performed with simultaneous implants placement. In one case, collagen membrane was used to isolate the grafting material and non submerged technique was applied for implant. In the others, implants were installed in one and two surgical steps with grafting material (collagen and hidroxyapatite) without collagen membranes. At the end of healing, for the implants installed in two-steps, the second stage was performed and the evaluation of the grafted volume was appreciated. In cases with one step protocol, the level of buccal soft tissues was appreciated.

**Results.** All implants successfully integrated. In one case, solitary graft particles were observed in the soft tissues. The augmented sites shrank insignificantly, and a good profile from buccal site was observed in all the cases. No significant effect was observed in the usage of collagen membrane as well as in one or two-steps protocol.

**Conclusions.** The usage of contour grafting in case of implants placement in posterior sides of the jaws seems to be a good method of augmentation. In case of a good periosteum, the collagen membrane isolation is not mandatory. Due to the lack of difference between one step and two steps protocol, the one step placement is more favorable because of the reduced number of surgeries and a mature biological width at the end of healing period. Further studies are necessary to appreciate indications and contraindications for such kind of augmentation.

**Key words:** implants, contour grafting

## **286. THE USE OF PLATELET- RICH FIBRIN IN ORAL SURGERY**

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Scientific adviser: Andrei Mostovei, MD, PhD, Associate professor, Department of Oral and Maxillo-facial Surgery and Oral Implantology *Arsenie Gutan*

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**Introduction.** The blood supply and growth factors are essential factors in postoperative healing. Platelet-Rich Fibrin (PRF) is a relatively new concept of natural tissue regeneration, which is widely applied in oral and maxillofacial surgery. Its' advantage consists in increased concentration of autogenous growth factors. It may be used alone or in combination with grafting materials, in order to facilitate wound healing, bone growth and tissue maturation after different types of surgeries.

**Aim of the study.** The aim of this study is to analyze the effect of Platelet- Rich Fibrin (PRF) regarding specific clinical cases, in patients with different diagnosis.

**Material and methods.** A clinical study has been performed in four patients with different clinical diagnosis: wound dehiscence, oro-antral communication, mandibular cyst, free gingival graft from palate. These patients were treated using standard treatment protocols and the Platelet-Rich Fibrin membranes as biological seals with and without grafting materials.

**Results.** The use of PRF membranes as biological seal after soft tissue grafting as well as tooth extraction with cystectomy appeared to be stable and protected the socket and grafting material during healing. The same effect was observed after closing of oro-antral communication. Furthermore, the application of PRF membranes seems to promote tissue healing in case of postoperative wound dehiscence.

**Conclusions.** The use of PRF membranes has a positive effect upon soft and hard tissue healing. Moreover, it seems to facilitate the healing process and decrease the risk of postoperative complications.

**Key words:** Platelet- Rich Fibrin (PRF), regeneration, oro-antral communication, cyst, wound.

## **287. COMPARISON OF BONE REGENERATION IN THE EXTRACTION SOCKETS**

Author: **Alexei Gulpe**

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**Introduction.** The resorption and remodeling of alveolar ridge after tooth extraction is a natural, physiological phenomenon, which might affect irreversibly and negatively the perspective of oral rehabilitation. Different materials have been suggested for augmentation of sockets after tooth extraction.

**Aim of the study.** The purpose of this study is to compare the regenerative properties of a biomaterial used in extraction sockets as an augmentation technique.



**Materials and methods.** The study group comprises patients who benefit from the application of platelet-rich fibrin and some of them who do not.

**Results.** It is proved that regeneration of the sockets can be achieved using a non-expensive method of augmentation and prevent the reduction of bone size in future oral rehabilitation.

**Conclusions.** The benefits of using platelet-rich fibrin are to stimulate bone regeneration, increase osteogenesis and to deal with postextractional complications.

**Key words:** augmentation, platelet-rich fibrin, extraction, socket, tooth.

## 288. IMMEDIATE IMPLANT PLACEMENT AFTER EXTRACTION

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**Introduction.** Nowadays, the implant-prosthetic treatment is a globally accepted, well-defined rehabilitation option for edentulous patients. According to the classical implantation method, the implants are installed in two stages, after the final cure of the post-operative alveolar (6-12 months after extraction). During this time, the alveolar apophysis is atrophic, especially on the vestibular side, and the implant installation becomes difficult.

Considering patient's expectations and requests for reducing the number of procedures and increasing the aesthetic results, a widely recommended procedure is the immediate implantation. A tooth extraction followed by dental implant insertion and a fixed temporary restoration has many advantages for soft tissue preservation.

This study describes the surrounding implant structures, their advantages and disadvantages, contraindications and specific features of the immediate implant placement regarding the post extraction alveolar ridge anatomical and structural elements.

**Aim of the study.** Determination of efficiency of immediate implantation versus the classic method of implantation.

**Materials and methods.** The study included 20 patients- 9 males and 11 females, aged between 27 and 60 years old, with 20 extracted teeth. The group of 20 patients was divided into 2 groups. There were 10 patients in the two-step implantation protocol group and 10 patients in one-step implantation protocol group.

**Results.** At the end of the first year, in the group of patients with the two-step implantation method, all implants had good stability, except of one lost implant at the end of the second month. We determined the loss of bone tissue of  $1.0 \pm 0.70$  mm after the radiological control. Implants in the one-step implantation group were clinically stable without mobility. Loss of bone tissue was  $0.8 \pm 0.40$  mm after 1 year.

**Conclusions.** Planned and executed correctly, immediate implant placement after extraction can offer a range of benefits, such as: reduced number of procedures, preservation of the width and height of the alveolar bone, preservation of soft tissue, obtaining an ideal location for the implant.

**Key words:** tooth extraction, bone desorption, implantation

## 289. ESTHETIC AND MORPHOFUNCTIONAL REHABILITATION OF PATIENTS WITH RADICULAR CYST

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**Introduction.** Surgical treatment of patients with radicular cysts often lead to poor offer of soft and hard tissues after healing which may jeopardize further implant-prosthetic rehabilitation. In such cases, the implant treatment planning should be performed even before the cystectomy and teeth extractions.

**Aim of the study.** Evaluation of aesthetic risk factor and obtained aesthetic and functional results in patients rehabilitated with implants after cystectomy and teeth extractions.

**Materials and methods.** The study focuses on 5 patients with odontogenic radicular cyst (mean age  $38.45 \pm 2.67$  years). The dimensions of cysts varied between 1.5 -2.5 cm. The following procedures were performed: teeth extractions and cystectomy with augmentation using collagen and PRF (4 cases), delayed bone grafting with bone block from ramus and xenograft (1 case). The insertion of implants was performed after the healing period. The aesthetic risk factor was evaluated for all patients before the implant placement. On the fifth day after the implantation, the wound surface was assessed by the Early Wound Healing Index (EHI). The obtained results were appreciated using Furhauser's scale Pink Aesthetic Score (PES).

**Results.** The restauration of implants installed in posterior regions were easy to predict, as no major problems occurred regarding esthetical results. However, in the cases with defects in anterior region, the results showed a smaller risk aesthetic factor ( $\leq 2$ ) and a good PES (close to 10) only for single unit implants. The defects restoration of two nearby teeth or more in anterior region are difficult to predict and showed a higher aesthetic risk ( $> 2$ ) and lower PES values (7), which are considered at the limit of success/failure. The bone defects and the lack of periodontal ligaments affected the maintaining of soft tissues between implants and decreased the esthetic results.

**Conclusions.** The surgical treatment of radicular cysts and GBR for further implant prosthetic rehabilitation can lead to good predictable results with high PES values in case of single tooth defects. The two- teeth defects may jeopardize the esthetic results due to papilla maintaining between implants. This risk became emphasized for defects in anterior region of jaws.

**Key words:** radicular cyst, surgical treatment

## 290. SURGICAL TREATMENT OF APICAL CHRONIC PERIODONTITIS

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**Introduction.** Until nowadays the main cause of dental extractions and of odontogenic inflammatory processes on the maxillo-facial region is the apical chronic periodontitis. More than that, periapical infectious processes are a source of auto- and heterosensibilization of the body, reduce the immune resistance resulting with the loss of work capacity, which becomes an important social problem. It is important to mention that the surgical method of treatment is an alternative one in case of failure of the conservative treatment when the total removal of inflammatory process was impossible. Surgical treatment of periapical lesions has as the main objective the removal of apical and periapical pathological tissues by surgical methods with the preservation of the tooth. Even though the surgical method of treatment is just an alternative one, in case of the failure of conservative methods, we cannot say that it is the most optimal. Along with the removal of the tumor, we obtain a functional reduction of the tooth, the possibility of reinfection, but also the lack of bone tissue, which reduces the resistance of the maxilla bones and also the functional and aesthetic modifications.

**Aim of the study.** The evaluation of the effectiveness of surgical treatment dynamics and the development of diagnostic and therapeutic principles accordingly.

**Materials and methods.** In this study were included 853 of patients treated in the Republican Dental Clinic during one year – 2017, 481 of them were men and 372 women aged from 18 to 70; Out of 853 of patients, 345 were with apical chronic periodontitis, 842 extractions were performed - 247 of the them because of apical chronic periodontitis.

**Results.** After statistical analysis of 345 patients with apical chronic periodontitis, information collected from the observation sheets of the Republican Stomatologic Polyclinic, we noticed an increase of the periapical lesions with the aging.

**Conclusions.** In case of failure of endodontic treatment and the impossibility of the removal of the periapical process using other methods, it was concluded that apical resection is a rational method of treatment that patients easily approve. Surgical treatment methods have satisfactory results, which allows us to keep the tooth in the oral cavity and perform proper function. Nevertheless firstly, we have to opt for a qualitative endodontic treatment before a surgical method. Only after the failure of the endodontic treatment, we can choose a surgical one.

**Key words:** apical chronic periodontitis, periapical lesions, surgical treatment

## 291. THE USE OF SURGICAL GUIDES IN ORAL IMPLANTOLOGY

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**Introduction.** In recent years, the development of computer-aided design / computer – assisted manufacture (CAD/CAM) technology has allowed great improvements. Computer assisted approaches have enhanced planning and provided accuracy in transferring the virtual plan to the surgical area, which is higher compared to freehand protocols. Thus, a strong cooperation between the prosthodontist, surgeon, and dental technician through the developed technology can lead to precise treatment planning, predictable, and accurate results.

**Aim of the study.** To assess the applicability of surgical guides in implant-prosthetic rehabilitations of edentulous patients.

**Materials and methods.** The study is based on clinical and paraclinical analysis of 10 patients (4 men and 6 women, mean age  $53 \pm 2.4$ ) with different types of edentulism rehabilitated using dental implants by All-on-4 concept.

The virtual planning and surgical guide printing were made using the Blue Sky Plan software. A special attention was paid to the positioning of the distal angulated implants in close proximity to the mental foramen. The postoperative CBCT was analysed to appreciate the accuracy of the obtained position of implants upon initial treatment plan.

**Results.** The results were uneventful. All the implants were installed according to the initial plan made by the medical team. However, in one case, due to a short passive part of the surgical guide and a small number of teeth supporting it, the drilling process required complementary checking of the implants area due to the moving of the surgical guide. Another difficulty was observed during the drilling process of the distal implants caused by the height of the guiding drills and the limited mouth opening.

**Conclusions.** The use of surgical guides in implants placement lead to a good and precise positioning of implants especially in cases with limited bone offer. This method allows to insert implants in exact required angulation and to avoid some complications like nerve damage. However, appropriate design of the surgical guide as well as the local limitations of the mouth should be taken into consideration in order to achieve the desired results.

**Key words:** implantology, surgical guides, CBCT, dental implants, All-on-4

## **292. PREOPERATIVE MANAGEMENT ASPECTS OF MEDICALLY COMPLEX PATIENTS DIAGNOSED WITH MAXILLOFACIAL INFECTIONS**

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**Introduction.** Inflammatory processes in the maxillofacial region are a pressing problem in a specialist surgeon's daily work due to the high number of patients with this diagnosis, but also because of the life-threatening complications that may occur - airway compromise, cavernous sinus thrombosis, mediastinal spread of infection, and even death. These complications occur even at "healthy" patients, with no other comorbidities. what about medically complex patients, who besides the current infection have multiple chronic diseases?

**Aim of the study.** Identify the differences in the preoperative management of medically compromised patients and review the literature to gather up-to-date solutions and protocols for the better management of various patient categories.

**Materials and methods.** A retrospective epidemiological study was conducted on 50 patients diagnosed with maxillofacial infections, who were hospitalized in the maxillofacial department of the IMSP IMU during 2015-2017 and 28 out of 50 have been found to have comorbidities.

A review of the literature was done and there were systematized protocols for each chronic condition, with an emphasis on drug interactions and possible complications.

**Results.** The research conducted confirmed the initial hypothesis that medically complex patients require a different approach while treating maxillofacial infections. Preoperative evaluation is of extreme importance and the oral surgeon should possess good clinical skills and knowledge of internal medicine, as there is a large number of patients who are unaware of their chronic medical conditions. A complete blood count, bleeding time and complete metabolic panel are crucial prior to the surgical intervention, as well as an electrocardiogram and blood pressure monitoring. Based on lab results, the operator will assess the risks and follow an individual protocol, altering the medication dosage or prescribing medication that would diminish possible surgical complications. Knowledge of drug interactions with agents used in oral surgery has been proven to be of great importance and have been systematized in this study, allowing clinicians to prevent further side effects.

**Conclusions.** Most chronic diseases have a significant impact on the evolution of maxillofacial infections and every oral surgeon should always follow individualized protocols in order to prevent complications. For a better patient care, the operative team is encouraged to request the consultation of internists in every complex case.

**Key words:** maxillofacial infections, comorbidities, complications, preoperative assessment

### **DEPARTMENT OF THERAPEUTIC DENTISTRY**

## **293. INFLUENCE OF VARIOUS TYPES OF ODONTOPREPARATION ON MORPHOLOGICAL ORGANIZATION OF TOOTH TISSUES**

Author: **Volodymir Radchuk**

Scientific adviser: Hasiuk N.V., MD, associate professor, Hasiuk P.A., MD, professor, Department of Therapeutic Dentistry

*SHEI. Horbacevsky* Ternopil State Medical University

**Introduction.** Due to complications in prosthetics with non-removable dentures, orthopedic treatment of teeth and dentition defects requires further improvement of non-removable prostheses' design and methods of preparation of supporting teeth. In this regard, the issues of theoretical validation of teeth preparations methods for metal-ceramic dentures make the study relevant and appropriate.

**Aim of the study.** To study the condition of dental tissues, resulting from traditional methods of preparation for cermet structures. The morphological changes in the teeth tissues should be expanded based on the outcomes.

**Materials and methods.** The material of the study served premolars, initially pre-prepared by creating a classical ledge and its symbol, covered with cermet crowns, and accordingly, divided into two groups. Thick and thin sections of these teeth were made and histochemical marking ShIK-alcian blue and hematoxylin-eosin was carried out.

**Results.** In the first group, significant blood flow disorders occurred in the pulp immediately after the cermet structure was fixed onto the pre-prepared premolar with a ledge in the cervical region, some of which are irreversible in the form of hemorrhages and sludge eradication in the venules. In the second group, less significant circulatory disorders are noted in the form of stasis of capillaries and edema of connective tissue, while preserving the enamel in the cervical region with odontopreparation of premolars without a ledge.

**Conclusions.** In the first group, irreversible changes occurred in the pulp, causing disturbances in neurotrophic processes in the pulp and initiate inflammatory processes. Vibration fluctuations during preparation in the tooth's neck region disorganize dentin leading to development of local angioedema disorders of the pulp. The results obtained in the second group initiate disorganization of the dentin without extension to the lateral and root parts of the dentin, while bearing a reversible character. Based on the above, the results of our research allow us to propose to preserve the odontopreparation for cermet structures to the cervical part, creating a symbol of the ledge.

**Key words:** teeth tissues, odontopreparation

## DEPARTMENT OF ORTHOPEDIC DENTISTRY

### 294. PRINCIPLES OF PROSTHETIC PLANNING OF FULL-IMPLANT SUPPORTED RESTORATIONS

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**Introduction.** Implant-prosthetic rehabilitation is popular and fast growing treatment care opportunity with development of new products and techniques. This offers a new possibility for patients with completely edentulous jaws to get rid of complete dentures. However, the lack of a well-defined and prosthetically driven approach may result in total failure of rehabilitation procedure.

**Aim of the study.** To highlight the main prosthetic element of full mouth rehabilitation on implants.

**Materials and methods.** The paper is based on analysis of medical literature and treatment of 35 patients (aged between 32 and 73 years old) with full edentulous upper and/or lower jaws using implant-supported prosthesis (39 prostheses). The patients were mainly rehabilitated with tilted implants according to all-on-4 protocol. The treatment time was divided in two parts, provisional treatment, and final one. The first one had a 6-12 months period. After treatment, seven elements

have been identified as key factors in prosthetic planning of full edentulous cases whose ignorance can lead to complete failure of aesthetical and functional aspects.

**Results.** To have predictable and functional results, the patients must be investigated by the prosthodontist to identify their needs and expectancies. The key indicative factors are position of incisal edge of upper frontal incisors, restorative space, lip support, smile line and lip length, contour and profile emergence, contact with soft tissues, and occlusal scheme.

**Conclusions.** The prosthetic planning of complex cases in full mouth rehabilitation is essential for aligning the treatment plan along with patient's expectations. By missing out the key planning factors, unpredictable and unfavorable results for both the doctor and patient could occur.

**Key words:** dental implants, prosthetic planning, tilted implants

## DEPARTMENT OF ONCOLOGY

### 295. DIAGNOSIS OF LOWER LIP CANCER

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**Introduction.** Lower lip cancer is a visual form and can be evaluated for many years in precancerous forms such as chronic fissures, ulcers, oral leucoplakia, papillomas, keratoacanthomas, Bowen's disease, Cheilitis Manganotti, hyperkeratosis. Depending on the microscopic growth patterns, cytological and histological methods of diagnosis can be applied.

**Aim of the study.** Establishing modern methods of lower lip cancer diagnostics; applying modern diagnostic imaging methods at different stages of lower lip cancer.

**Materials and methods.** The research was performed on a group of 58 patients who were investigated and treated in the Head and Neck, Microsurgery Department of of the MPHI Oncological Institute of the Republic of Moldova in the period 2015-2017 with the diagnosis of lower lip cancer. The most informative method in establishing the diagnosis was tumor biopsy. The imaging methods used were USG, Chest X-ray, CT, scintigraphy, orthopantogram.

**Results.** The histopathological results found at patients with inferior lip cancer were of two types: squamous keratinized carcinoma in 43 cases (74.1%) and non-keratinized cacinoma in 15 patients - 25.8%. To assess the spread of the malignant process, cervical lymph node status, the USG examination of the cervical region was performed in 58 patients, of which in 6 patients (10.3%) enlarged lymph nodes were detected. X-ray of the affected region and chest X-ray were carried out in 100% of cases and lung Mt were diagnosed in two case, or 3.4 %. TC was performed on 17 patients - 29.3% and bone scintigraphy in 12 cases, or 20.6%. In stages II, III and IV, the orthopantogram in two projections was performed on 40 patients or 68.9%.

**Conclusions.** The diagnosis of lower lip cancer is based on the biopsy of the tumor with the histopathological examination. Diagnostic imaging tests are important in assessing the spread of malignant process.

**Key words:** cancer, oncogenes, squamous keratinized carcinoma, lymph nodes

## DEPARTMENT OF ODONTOLOGY, PERIODONTOLOGY AND ORAL PATHOLOGY

### 296. ACUTE PULPITIS. ETIOLOGY AND TREATMENT

Author: **Marin Groza**

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**Introduction.** Dental pulp inflammation (pulpitis) represents a totality of functional and structural biochemical reactions and processes, having an adaptive, compensatory and restorative character and evolving in a succession of phases due to the pathogen action. All acute and chronic diseases of the pulp and periodontium are the cause of the formation of odontogenic inflammatory processes, which cause pain and serve as foci of infection, either exacerbating or triggering general or systemic illnesses. Dental pulp diseases are treated in a well-established order, taking into account all the aspects, such as etiology, epidemiology, prophylaxis, diagnosis and treatment. The success in pulp diseases depends on the ability to choose the optimal methods and techniques for each type of diagnosis and clinical picture. In the case of non-qualitative endodontic treatment, the organism sensitization occurs and in some cases complications develop, such as: massive destruction of bone tissue, which can trigger septicemia, meningitis, sinus thrombosis, endocarditis, mediastinitis etc. It is unacceptable to have bad or superficial knowledge of topographic anatomy of teeth, by the endodontist. It is also worth noting that besides the knowledge of endodontic instruments and materials, it is of great importance to know the techniques of mechanical and medicated preparation as well as the root canal filling.

**Aim of the study.** To determine the most rational and effective methods of treatment of acute pulpitis.

**Materials and methods.** Ten patients (4 women and 6 men) aged 19-40 years (10 teeth - 1 canine, 5 premolars and 4 molars) were subjected to complex examination and treatment. Following the clinical and paraclinical examination, 4 patients with acute diffuse pulpitis and 6 patients with acute focal pulpitis were diagnosed. In the treatment we applied the direct capping method, vital pulp amputation and extirpation in acute focal pulpitis and the method of vital pulp extirpation in diffuse acute pulpitis.

**Results.** Of all the cases with the diagnosis of acute focal pulpitis, the relapse was observed only in patients who were treated by the direct capping method (2 patients). In the case of the other patients, both acute focal pulpitis and acute diffuse pulpitis were treated by surgical methods (vital pulp amputation and extirpation), positive results being obtained, without relapses or complications.

**Conclusions.** The method of vital pulp amputation and extirpation resulted in a higher efficiency of the treatment of acute pulpitis, compared to the conservative method.

**Key words:** pulpitis, treatment, relapse, direct capping

## DEPARTMENT OF DENTAL PROPEDEUTICS *PAVEL GODOROJA*

### 297. CLINICAL EVALUATION OF METAL-CERAMIC FIXED PARTIAL DENTURES.

Author: **Dumitru Cheptanaru**, Olga Cheptanaru

Scientific adviser: Bajurea Nicolae, MD, PhD, Associate Professor, Department of Dental Propedeutics *Pavel Godoroja*

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**Introduction.** Edentulism - a pathological condition characterized by the absence of one or more teeth in the dental arch - is a major health problem regardless of societies, regions, ethnicities and social stratification. A fixed bridge (called also as fixed bridge prosthesis, bridge or fixed partial denture) is attached to remaining teeth to replace a missing tooth, and teeth serving as attachments for a fixed bridge are called abutments. The part of the fixed bridge, which veneers the abutment tooth is called a retainer and the part which replaces a missing tooth is called a pontic.

**Aim of the study.** The study aims to evaluate the treatment need of fixed bridges according to the distribution of pontics in dentition, in different age groups and to investigate the primary and late complications and survival of the conventional fixed metal ceramic prostheses, as well as patients' satisfaction with the prosthetic treatment.

**Materials and methods.** An electronic MEDLINE search supplemented by manual searching was conducted to identify prospective and retrospective cohort studies on FPDs with a mean follow-up time of at least 5 years. The whole material consisted of the patients treated with fixed metal ceramic prostheses at the Department of Dental Propaedeutics, *Nicolae Testemitanu* State University of Medicine and Pharmacy, during the years 2014–2018. Patients had to have been examined clinically at the follow-up visit. The study included 18 patients (6 men and 12 females) with partial edentulism. After clinical and paraclinical examination, patients were divided into two groups: first group consisted of 8 patients with dental bridges fixed on vital teeth. The second group consisted of 10 patients with dental bridges fixed on endodontically treated teeth.

**Results.** Fixed bridges are most often prepared to replace upper first premolars and lower first molars also in the future. The most usual primary complications related to fixed bridges occurred during preprosthetic endodontic treatment of abutment teeth and during the preparation of the root canals. Patients were satisfied with aesthetics and function of the fixed metal ceramic prostheses. Late complications found in clinical examinations were few, and the survival rate for the fixed metal ceramic bridge prostheses was calculated to be 84 % after 10 years, long fixed bridges having a lower survival than the shorter ones. The treatment need for conventional fixed bridges seems to be highest among patients over 50 years of age in the future. No patients reported adverse reactions to the material.

**Conclusions.** The success of prosthetic rehabilitation with metal-ceramic fixed partial dentures is the result of a medical reasoning based on theoretical and practical skills. Avoidance of tempestuous preparation, deficitary marginal closing, partial filling of the root canal, crown perforation with interradicular pivots, pushing the filling material by apex can prevent pulpitis, necrosis, gangrene and other severe complications appearance, occurred in the post-prosthetic belated period.

**Key words:** metal-ceramic, fixed, partial, dentures

## **298. GENERAL ASPECTS OF DIAGNOSIS OF ORAL MUCOSAL DISEASES OF THE PATIENTS WITH CHRONIC VIRAL HEPATITIS B AND C**

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Scientific adviser: Diana Uncuța, MD, PhD, Associate professor, Department of Dental propedeutics *Pavel Godoroja*

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**Introduction.** Some oral mucosal diseases appear as a result of immunodeficiency of the organism caused by systemic diseases. In recent years, it has been shown that chronic hepatitis B and C infection, in addition to causing liver disease, is also responsible for several extrahepatic manifestations and immune abnormalities. Chronic viral hepatitis B and C was found to be involved in the pathogenesis of some oral diseases. The diagnostic process includes some sequential steps to elucidate the cause itself and to provide an adequate plan of treatment.

**Aim of the study.** To provide general aspects in diagnosis of oral mucosal diseases of the patients with chronic viral hepatitis B and C using the review from literature.

**Materials and methods.** The dates found in five scientific articles from different countries were selected in this study. An overview from literature on the diagnosis data of the oral mucosal diseases of the patients with chronic viral hepatitis B and C was done.



**Results.** The analysis of the methods used to diagnose the oral mucosal diseases revealed the important role of knowing their etiology on establishing the correct treatment plan. Besides the clinical diagnostic, a big importance in diagnosis has the paraclinical examination, which includes: biopsy of the affected tissues, microbiological tests, radiological examinations, immunofluorescence tests. In addition to these examinations, the tests for chronic viral hepatitis B and C have to be done, such as: serologic examination (hepatic markers), molecular-biological and immunologic testes.

**Conclusions.** According to the five scientific articles, the diagnosis of oral mucosal diseases of the patients with chronic viral hepatitis B and C involves four sequential steps: 1. obtaining of comprehensive overview of the patient's local and general status; 2. evaluation of all the findings to correlate the chief sight of symptoms with the current history, 3. physical findings and medical history; 4. establishment of differential diagnosis.

**Key words:** oral mucosal diseases, diagnosis, viral hepatitis B and C

### **299. USE OF CALCIUM HYDROXYDE IN A DEEP CARIOUS LESION- CASE PRESENTATION**

Author: **Diana Trifan**

Scientific adviser: Diana Unçuța, MD, PhD, Associate professor, Department of Dental propeedeutics *Pavel Godoroja*

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**Introduction.** Caries remains the most widely spread dental disease. Because of the low rate of addressability and late detection the carious lesions are mostly deep carious lesions. Frequently this leads to losing the tooth vitality. In order to maintain the tooth vitality, we can use the method of direct or indirect pulp capping.

**Aim of the study.** The aim of this study is to present a case of use of calcium hydroxide in a deep carious lesion.

**Material and methods.** A clinical study was performed on one patient with the clinical diagnosis: deep carious lesion. The patient was treated by the method of indirect pulp capping using calcium hydroxide.

**Results.** The usage of calcium hydroxide in deep carious lesions has proven to be a very good material, showed high biocompatibility. The treated tooth showed no post-operative sensibility and vitality of the tooth was preserved.

**Conclusions.** The usage of calcium hydroxide has a positive effect on new dentine bridge creation in order to maintain the tooth vitality. Moreover, it seems to facilitate the healing process and decrease the risk of postoperative complications.

**Key word:** calcium hydroxide, tooth vitality, indirect pulp capping, deep carious lesion

### **DEPARTMENT OF PEDIATRIC ORO-MAXILLO-FACIAL SURGERY, PEDODONTICS AND ORTHODONTICS**

### **300. THE VALUE OF ORTHODONTIC STUDY MODELS FOR TREATMENT PLANNING**

Author: **Veronica Grosu**

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**Introduction.** In order to establish an accurate diagnosis and proper therapy planning in orthodontics, it is necessary to perform the analysis of dental records. The only non-invasive three-dimensional record that provides important information in orthodontics is the study cast. The present study was conducted to determine the Linder Harth, Korkhaus and Bolton analyses on dental casts before and after treatment, in two different cases with different approaches to treatment plan.

**Aim of the study.** The aim of the present study is to determine the contribution of study casts in orthodontic treatment planning.

**Material and methods.** Dental records of two patients were selected, one case treated with extraction of upper first premolars and with non-extraction therapy in another one. These cases were selected randomly, without malocclusion restriction, from the Chair of Pediatric Oromaxillo-facial surgery, Pedodontics and Orthodontics, SUMPh *Nicolae Testemitanu*. Two sets of dental casts with permanent dentition were examined in the transverse and sagittal plane. Manual measurements were done with a digital caliper directly on the dental casts, and the obtained values were compared to those defined by the formula.

**Results.** For the first case (with extraction of upper first premolars) in the pre-treatment stage, for the maxillary arch, Linder Harth analysis showed that in the premolar arch the width is 3,6 mm less than the expected value and in the molar one 3,2mm less. Korkhaus analysis established for the upper arch in the anterior segment a deficiency of 3mm and 5,5mm in the posterior one. The Bolton's anterior ratio was 76% and the overall ratio 88%; this indicates maxillary tooth material excess. For the second case (non-extraction case) in the pretreatment stage, for the maxillary arch, Linder Harth analysis showed that in the premolar arch the width is 1,25mm less than the expected value, but for the molar one with 4,1mm more. Korkhaus analysis established for the upper maxillary, only in the anterior segment (-1,5mm) a relative narrow dental arch, but for the posterior segment the values are within the normal range. The anterior ratio of Bolton is 80%, and indicates mandibular anterior excess.

**Conclusions.** The data collected and analyzed from these study casts in order to evaluate the differences in pre-treatment and post-treatment stages, established the value and the contribution of study casts in determination of best approach in treatment planning. Orthodontic treatment planning is more than just deciding on extraction or non-extraction case. It requires an individual approach, despite the great importance of biometric standards.

**Key words:** Linder Harth analysis; Korkhaus analysis; Bolton analysis

### 301. CONSERVATIVE TREATMENT ASPECTS IN FLUOROSIS AND POST ORTHODONTIC LESIONS

Author: **Ina Guidea**

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**Introduction.** Modern dentistry evolution trends are based on development of new treatment methods that must guarantee hard dental tissue preservation, that can be used for aesthetic and functional rehabilitation. Conservative methods ensure a comfortable treatment, without local anesthesia, with a long term perspective of maintaining teeth integrity. These new treatment methods that approach the post orthodontic lesions and fluorosis through the prism of enamel demineralization allow to point on their efficiency and advantages regarding to other methods.

**Materials and methods.** The study included 15 patients that acused enamel demineralization. Eligibility criteria: mild forms of fluorosis or post orthodontic incipient caries lesions. Patients were divided in 2 groups: group I- 9 patients, group II- 6 patients. The first group was subject for conservative fluorosis treatment, and the second one- conservative treatment for post orthodontic

lesions. Both groups were treated using ICON system. Data were analysed by photostatic examination, before and after treatment.

**Results.** There was a significant improvement in clinical status, characterized by macula disparition and reduction in brown striations intensity in group one and complete treatment for the second group.

**Conclusions.** The conservative therapeutic method used in this study offered good results in enamel demineralisation treatment, manifested by caries in macula stage, but additional research are necessary in case of dental discoloration.

**Key words:** conservative treatment, fluorosis, incipient caries, ICON

### **302. THE USE OF “BULK FILL” TECHNIQUE FOR POSTERIOR TEETH RESTORATION**

Authors: **Victoria Bordian, Victor Profor, Corneliu Gorea, Dragoş Cucu**

Scientific adviser: Ciobanu Sergiu, MD, PhD, Professor, Department of odontology, periodontology and pathology

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**Introduction.** Modern dentistry, by continuous development of biomaterials and treatment techniques, opens up new possibilities of approach for dental affections, aiming to implement the most effective methods of treatment and to achieve revolutionary results in the treatment and prophylaxis of dental caries. The “Bulk fill” technique helps us to achieve a qualitative restoration of posterior teeth in a shorter time than using traditional techniques, due to the simplified process of restoration and last generation materials used.

**Aim of study.** The analysis of the advantages of „bulk fill” technique, used in posterior teeth restoration.

**Materials and methods.** A clinical study has been performed on a group of 36 patients, 12 of them female and 24 male, aged 21 to 48 years. Of the total amount of 52 treated teeth, 34 were molars and 18 premolars, 28 were diagnosed with chronic medium caries and 24 with chronic deep caries. Treatment protocol: clinical and radiological examination, loco-regional anesthesia, operating field isolation using rubber dam, preparation of dental caries and treatment of the dentinal wound, dental cavities filling, using „bulk fill” technique and materials, finishing and polishing of the restorations, radiological examination.

**Results.** The filling of the dental caries using the “bulk fill” technique allows the material stratification up to 5mm, incomparision with the classical technique of 2mm limit, avoiding multiple stratifications and reducing the working time by near 25%. The reduced contraction (3.6%) and the very low (1.5 Mpa) polymerization stress reduce the possibility of postoperative sensitivity.

**Conclusions.** The results of the study proved the superiority of the “bulk fill” technique in the posterior teeth restoration due to the simplified filling procedures, the good adaptation of the material to the formed cavity and the reduced time spent on the restoration process.

**Key words:** dental caries, bulk fill, stratification

### **303. MANAGEMENT OF TEMPOROMANDIBULAR DYSFUNCTIONS USING OCCLUSAL SPLINTS**

Author: **Larisa Rosca**

Scientific adviser: Vitalie Pantea, MD, University assistant, *Ilarion Postolachi* Department of Orthopedic dentistry

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**Introduction.** Temporomandibular disorders represent a group of dysfunctions that involve the relationship of the mandible to the maxilla, characterized by articular, muscular and orofacial pain, bruxism, locking of the jaw, crepitus and crackles. With a various etiology, this condition is widely treated nowadays by using occlusal splints- removable artificial devices, that affect the mandible position and allow it to reseal in a physiological position, by creating a mechanical impediment for parafunctions.

**Aim of the study.** To determine efficiency of splint therapy in treatment of temporomandibular disorders.

**Materials and methods.** Five patients with temporomandibular dysfunctions were examined clinically and paraclinical, with the following complaints: headache, neck ache and ear ache, signs of orofacial pain, tinnitus and ear fullness, bruxism and teeth abrasion. The clinical examination revealed a set of signs and symptoms: pain in temporomandibular joint (TMJ) and facial muscles, observed during palpation, especially in the lateral pterygoid muscle, limitation in mouth opening up to 18 mm, deviation in mandibular path of motion, pathological sounds: crepitus and crackles. The paraclinical examination was performed for all patients and included: study models, electromyography and CT of TMJ. In order to fabricate occlusal splints, CR was determined using leaf gauge technique and impressions were taken for the upper and lower jaw. The patients were instructed to wear the appliance as long as possible during 1 month.

**Results.** We observed an improvement of pain symptoms, bruxism and muscle tension. CT revealed the reposition of condyles in CR.

**Conclusions.** Splint therapy ensures an efficient treatment of temporomandibular disorders, allow muscle relaxation and guide the condyles in a physiological position, improving the pain symptoms.

**Key words:** TMJ- temporomandibular joint, CT- computed tomography, CR- centric relation

### 304. RESTORING OF FRONTAL TEETH USING SILICONE TEMPLATE

Author: **Victoria Potinga**

Scientific adviser: Danici Alexandr, MD, Univeristy assistant, Department of odontology, periodontology and pathology

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**Introduction.** For centuries, the literature and art have indicated that the smile represents a key role in facial aesthetics and thus in the integration into society of the individual. The technological progress has made modern dentistry to seek less invasive methods to restore masticatory apparatus functions. For modern dentist, the challenge is to conciliate the aesthetic and functional objectives, trying to get the best result. Thanks to a variety of options for dental restoration , we have many choices for repairing, worn, decayed, demaged or missing teeth restoring a healthy and beautiful smile.

**Aim of the study.** The silicone guide with wax up technique allows the placement of direct composite on the palatal surfaces of upper anterior teeth in an efficient and accurate manner. We planned to realize a smile analysis and method of frontal teeth restoring, exploring techniques of manufacturing silicone template and to achieve esthetic and long- term results.

**Materials and methods.** The study was performed on a group of 12 patients (5 female and 7 male), aged between 24-27, showing aesthetic impairment. Of the 12 cases, 8 were diagnosed with non-caries lesion on anterior teeth and 4 cases with caries lesion. 8 were treated by simple preparation for better retention and 4 were treated by preparation and removing of necrotic dentin in the tooth cavity. The silicone key was made according to the wax up.

**Results.** The results of the aesthetic analysis were collected from the level of face, lips, dental arches and occlusal level.

**Conclusions.** Restoration using the Silicone Guide technique and wax technique are combined to give an aesthetically conservative and beautiful result, benefiting from a considerable saving in time and cost.

**Key words:** anterior teeth, composite, silicone template

### **305. CONSERVATIVE AND SURGICAL TREATMENT OF CHRONIC PERIODONTITIS**

Author: **Vadim Gutu**

Scientific adviser: Marcu Diana, MD. PhD, Associate professor, Department of odontology, periodontology and pathology

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**Introduction.** It is well known the fact that untreated chronic periodontitis will increase the level of destruction of surrounding tissues, progressing from one one type to another, finishing frequently with dental extractions and following measures of tertiary prevention – prosthetic interventions or implantology, both of them being expensive. In order to finish the conservative endodontic treatment, we apply to a kind of treatment called apical resection when it is impossible or is not recommended, saving 2/3 from the root minimum.

**Aim of the study.** Studying the methods of conservative and surgical treatment in chronic apical periodontitis in order to ensure the future functionality of the tooth and saving its integrity.

**Materials and methods.** The research is based on data obtained as the result of treatment applied for 43 patients with chronic apical periodontitis, during the 2017 and 2018 years, who addressed to University Clinic Nr. 1, to private dental studio “ExpoDent”, Chisinau city, including 24 (56%) males and 19 (44%) females between 18 and 46 years.

**Results.** One of the priority directions of research in modern dentistry is prophylaxis, diagnosis and treatment of chronic apical periodontitis. Although they have been used as a object of study for a long time, until now chronic apical periodontitis is a professional problem, for which were proposed new methods and remedies in the conservative treatment. Therefore, it is important that the most advisable methods for the removal of apical and periapical pathological outbreak to be known, thus creating conditions for healing pathological processes for the full tissue restructuring, in all cases endeavoring to keep the causative tooth. In this paper we have studied the medical records of 60 patients who have been treated during 6 months by the therapeutic method-58 patients (96,4%), and conservative surgical method-2 patients (3,3%). The reference group included three patients, two among received a therapeutic treatment and one of them a surgical treatment (apical resection). In order to achieve the periapical regeneration was used the calcium hydroxide lotion “UltraCal”, with a treatment success rate of 80%. Conservative surgical treatment should be performed only after the therapeutic one.

**Conclusions.** After treatment with calcium hydroxide “UltraCal”, during 6 months, including more visits we obtained approximative 80% recovery from all patients. In some cases of chronic periodontitis with sever lesion types, those with root canal secretion is absolutely necessary association of surgical intervention.

**Key words:** conservative treatment, surgical treatment, chronic periodontitis

### **306. PREDICTION OF DIFFICULTY IN IMPACTED LOWER THIRD MOLARS EXTRACTION**

Author: **Andrei Donica**

Scientific adviser: Motelica Gabriela, MD, University assistant, Department of Oral and Maxillo-facial Surgery *Arsenie Gutan*

*Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** Mandibular third molar impaction remains a current topic of dentistry due to the frequent complications it causes and contradictions in treatment behavior.

**Aim of the study.** The aim of the paper is to establish the attitude and tactics of surgical treatment of lower molar inclusion. According to Rock and Elsey third mandibular molar impaction meets 73% of young people. Many theories of inclusion of mandibular M3 have been proposed: phylogenetic, mendelian, nodin, endocrine, but the most popular is the insufficient development of retromolar space. Some authors claim that M3 extraction should only be performed when complications may occur, others say that M3 should be extracted if there are no contraindications, but Martin Kunkel is the advocate of the prophylactic extraction of the third molar.

**Materials and methods.** In order to achieve the proposed goal, the frequency of inclusion of three mandibular molars and their relationship with neighboring anatomical formations was evaluated. There were statistically processed data of medical records and radiographic examination. This study was axed on 565 patients treated in the University Dental Clinic nr.2. Of these, 263 patients were selected: 108 patients with M3 impacted and 156 patients with M3 apparently erupted in the correct position. We noticed that M3 inclusion is most common among young people aged 18-25, predominantly female. The most common complication caused by M3 was pericoronaritis, followed by M2 caries.

**Results.** This study concluded that prophylactic extraction at a young age leads to the reduction of postoperative complications and faster regeneration of the tissues. Paraclinic examination is indispensable in determining the mandibular M3 ratio with neighboring anatomical elements, correct diagnosis and treatment tactics. The degree of difficulty in extracting mandibular M3 varies greatly: sometimes it is simple as a regular extraction; but sometimes, extraction is extremely difficult due to deep inclusion, bleeding, tooth shape, posterior posture and tooth decay.

**Conclusions.** We recommend practicing the extraction procedure of M3 only by specialists in domain that possess both practical and theoretical abilities.

**Key words:** third molar, impaction, extraction

### 307. DIAGNOSIS AND TREATMENT OF CHRONIC CATARRHAL GINGIVITIS

Author: **Alex Yosupov**

Scientific adviser: **Eni Lidia, MD, PhD, Associate professor, MD; Ciobanu Sergiu, MD, PhD, professor, Department of odontology, periodontology and pathology**

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**Introduction.** The diseases of the marginal periodontium are among the first places in periodontal diseases. The timely detection of these diseases requires imperative implementation of some effective and contemporary diagnostic methods and the choice of an appropriate treatment tactics to prevent relapses.

**Aim of study.** To make an efficient diagnosis of localized chronic catarrhal gingivitis, mild form and to select the optimal methods of treatment.

**Materials and methods.** The study included 20 patients with the diagnosis of localized chronic catarrhal gingivitis, mild form. The average age of the patients enrolled in the study was 18-35 years. The patients were subjected to the following methods of investigation: orthopantomogram, bleeding indices test, and determination of soft dental deposits.

The diagnosis-based treatment tactics was: removal of tartar, professional brushing and applications with antiseptics and antimicrobials.

**Results.** Most patients were identified during dental care-routine check-ups. After the treatment, the gum bleeding was ceased and the inflammatory process was stopped. Professional cleaning

of affected areas was performed and follow-up control over the dental tartar formation was done.  
**Conclusions.** The asymptomatic evolution of the initial stages of inflammatory gum diseases leads to late dental check-ups and professional dental care.

**Key words:** gingivitis, periodontal disease, dental tartar

### **308. THE ART OF LATERAL TOOTH RESTORATION**

Author: **Mihai Sirbu**

Scientific adviser: Bodrug Valentina, associate professor, MD. Department of Odontology, Parodontology and Oral Pathology

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**Introduction.** Artistic restoration of occlusal surface using modern methods (Stamp technique) and using of SDR (SMART DENTINE REPLACEMENT) for filling of cavities up to enamel-dentine border, followed by sectional modeling of each cusp. Reestablishing of contact point using a custom ring.

**Aim of the study.** Researching methods of application of composite filling materials and ensuring esthetic conditions in lateral teeth restorations in conformity with anatomical morphology, color and age particularities.

**Materials and methods.** In conformity with set goals, 12 patients have been examined and treated, age varying from 20 to 45 years, 8 male and 4 female. During examination of these patients, 35 caries were found, superficial caries- 7, medium caries- 20, deep caries- 8. Restoring of Class I cavities with reduced opening was performed using stamp technique. Class II were restored using custom ring and SDR material. Used materials: SDR and Ceram-X -class of nano-ceramics.

**Results.** The success of restoration mostly depends on the nature of material, consistency of dentine wall next to future restoration and possibility of preventing marginal micro fissures. Modern techniques help reducing operating time and provide better functional and esthetic outcome. Through cleaning the infected dental tissue, performing correctly all techniques for composite application and regular check-up once in 6 months for professional hygiene, the lifespan of restoration can be up to 10 years.

**Conclusions.** The most efficient technique in restoration of occlusal surface in cavities with reduced opening is using an individualized occlusal form. SDR is a quick filling method, which has fluid consistency and good adhesive capacity to hybrid layer. Can be used as thick as 4 mm, which leads reduced operating time and eliminates errors found in layered approach. After finishing of restoration it should be checked by Ryge criteria, after that it can be considered final if it scores Alpha in all categories.

**Key words:** SDR, Custom ring, Stamp technique

### **309. THE USE OF COLLAGEN SPONGE IN SOCKET PRESERVATION**

Authors: **Vlad Badan, Marina Cretu**

Scientific adviser: Andrei Mostovei, MD, PhD, Associate professor, Department of Oral and Maxillo-facial Surgery and Oral Implantology *Arsenie Guțan*

*Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** Due to the development of oral implantology, socket preservation became a widely discussed theme in the professional literature. Different augmentation materials are used for it. The use of collagen sponges as a filler is considered a good alternative for socket preservation with a minimum impact upon bone formation.

**Aim of the study.** The aim of this study is to analyze the effect of Collagen sponge upon postextractional socket healing.

**Materials and methods.** A clinical study has been performed on three patients with periapical chronic inflammatory processes. All these patients were supposed to tooth extraction and collagen sponge has been applied after antiseptic preparation of the socket. In order to maintain the sponge in the socket, X sutures has been applied. The healing process was evaluated during 3 months. Clinical and radiographical examinations were performed to appreciate the healing process.

**Results.** The usage of collagen sponge for socket preservation appeared to be a good support for the stabilization of the formed blood clot. No complications occurred during healing. Clinical and radiographic evaluation during healing process revealed a good integration of the sponge.

**Conclusions.** The usage of Collagen sponges can be considered a good alternative for socket preservation. However, in case of bone walls defects, further studies are necessary in order to assess the volume maintaining with this method.

**Key words:** collagen Sponge, socket preservation, tooth extraction

### 310. PARTICULARITIES OF DEEP CARIES TREATMENT. FILLING MATERIALS AND TECHNIQUES

Authors: **Crinela Balan, Rebeca Bularu**

Scientific adviser: Ciobanu Sergiu, MD, PhD, Professor, Department of odontology, periodontology and pathology

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**Introduction.** Deep dental caries is a localized pathological process characterized by demineralisation of the inorganic part of enamel, destruction of its organic matrix and softening of hard dental tissues with the subsequent formation of cavity defect, the lesion area extends beyond the tooth enamel and can extend to the root, affecting the dentine which is adjacent to the pulp chamber. The development of the pathological process leads to the thinning of the parapulpal dentine, slightly permeable in pathogens. The protective layer is diluted and destroyed, which causes the infection to penetrate through the root canals in the periodontal tissue and even in the maxillary bone tissue. The nature of tissue changes determines the choice of treatment method that is effective due to biomechanical preparation of the carious cavity, medicated processing, application of curative and insulating fillings, as well as the choice of filling material for permanent dental crown filling.

**Aim of the study.** To study the particularities of the development of deep dental caries and to select treatment materials and techniques.

**Materials and methods.** A group of 10 patients (5 women and 5 males) aged 20-45 years (10 teeth - 2 canines, 2 premolars, 6 molars) underwent complex examination and treatment. Following clinical and paraclinical examination, the patients were diagnosed with deep caries. To ensure the treatment efficiency and safety, we opted for the treatment using the indirect capping technique in two visits. To avoid dental pulp excitability, we applied the curative calcium hydroxide-based filling Ultra Blend on the bottom of the carious cavity. It stimulates reparative dentine formation, having antiseptic, bactericidal and antitoxic action.

**Results.** Of all the cases studied, only 1 patient (1 molar) had complications resulting in acute pulpitis, so we can state that calcium hydroxide-based preparation Ultra Blend corresponds 90% to its properties, being effective in the treatment of deep caries.

**Conclusions:** The two-visit treatment using the indirect capping technique and the application of curative paste Ultra Blend based on calcium hydroxide - determined high efficiency of the treatment of deep caries due to the stimulation property in reparative dentine formation.

**Key words:** deep caries, cavity, indirect capping.



### 311. ORAL CANDIDOSIS. CLINICAL AND THERAPEUTIC ASPECTS

Author: **Catalina Ciubotaru**

Scientific adviser: Marcu Diana, MD, PhD, Associate professor, Department of odontology, periodontology and pathology

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**Introduction.** Despite the modern medicine benefits, the significant increase of mycotic infection is caused by a large number of determinant factors that convert the saprophytic *Candida* flora into a pathogenic one. The immune system suppression induced by administration of antibiotics, cytostatics drugs and glucocorticoids have determined an increment in incidence of oral candidosis, considered by Wenzel an “illness produced by treatment”. Although there is a large number of antimycotic drugs, selecting a rational remedy is still a key problem for pharmacotherapy. In order to investigate these aspects, we studied the clinical features of oral candidosis and evaluated the obtained results of a complete antimycotic treatment.

**Materials and methods.** 20 patients with oral candidosis were selected for the study group, diagnose confirmed by clinical and laboratory examination (cultivation on Sabouraud medium and gram microscopy), among them 12 women (60%) and 8 men (40%) of different age, most of the affected persons of 30-49 years old (50%). All patients from the study group have been subject of a complex treatment: etiotrop, imuno-stimulating, hygienic and dietetic.

**Results.** In the study group, oral candidosis was found together with concomitant illness: endocrine (40%), cardiovascular (25%), gastrointestinal (45%), respiratory (30%). There was established a relation between candidosis and certain periods of the year, with an increased frequency during winter-spring season (25-40%), explained by respiratory pathways illness and antibiotic therapy treatment. Locally, the lesions were found on tongue, palatal and angular mucosa. Treatment efficiency was of 90%, number confirmed by clinical examination and laboratory tests.

**Conclusions.** The efficiency of oral candidosis treatment is based on a complex therapeutic approach, focused on etiology and interruption in the pathogenic chain, rebalancing the immune capacities, prophylaxis of relapses and prolonging the remission period.

**Key-words:** oral candidosis, complex treatment

### 312. SURVEY OF CARIES PREVALANCE AND INTENSITY IN CHILDREN

Authors: **Catalina Petrasco, Lucia Avornic, Cristina Hmelnitcaia, Gheorghe Mihailovici**

Scientific adviser: Ciumeico Igor, MD, PhD, Associate professor, Department of Maxillo-Facial Surgery, Pedodontics and Orthodontics

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**Introduction.** This survey was determined by the high incidence of dental caries, its severity, local and general complications that are caused. Harndt defines dental caries as a chronic destructive process that occurs without any inflammatory signs, generating dental tissue necrosis, and in the end, pulp and periodontal tissue inflammation. As the dental pulp is infected, it opens a gate for the microorganisms and toxins to the entire body. Dental caries, a chronic disease with insidious evolution, causes frequent pulpar and periodontal septical complications, spread of the infection in the near-by regions, triggering and maintaining different systemic diseases, the reason why Pickerill called it the disease of modern society.

**Aim of the study.** Evaluation of the frequency and intensity of dental caries in children during the prophylactic examination.

**Materials and methods.** The survey was conducted among 224 subjects from “Mihail Bârcă” Highschool, from Mileștii Mici, Ialoveni, aged 7 to 15, average age of 9,64±0,14. The total

sample size comprised 119 boys (53,12%) and 105 girls (46,88 %). The examination was made according to WHO practice, by direct and indirect inspection with a dental mirror. The results and observations were recorded in dental charts (Blanck 0/43e).

**Results.** During the examination of 224 subjects, the presence of dental caries was determined in 194 subjects, accounting 86,6% from the total number. The DMF index of dental caries was determined as  $4,28 \pm 0,17$ .

**Conclusions.** 1. Prevalance of dental caries in the surveyed children is high, being 86,6%.

2. Intensity of dental caries in the surveyed children is average, being  $4,28 \pm 0,17$ .

**Key words:** dental caries, prevalance index, intensity index

### 313. RADIOLOGICAL DETECTION OF OSTEOPOROSIS IN FEMALE PATIENTS IN REHABILITATION FOR MANDIBULAR IMPLANT PROSTHESIS

Author: **Chiril Voloc, Evelina Corcimari**

Scientific advisers: Sirbu Dumitru, MD, PhD, Associate professor; Topalo Valentin, MD, PhD, Professor, Department of Oral and Maxillo-facial Surgery and Oral Implantology *Arsenie Guțan Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** Implant prosthesis rehabilitation may be affected by osteoporosis, which occurs more frequently in women than in men in a 4:1 ratio. Early radiological changes of osteopenia/osteoporosis determined on orthopantomography and CT-scans provides data that can be taken into account when planning implant treatment.

**Aim of the study.** The aim is to determine the correlation of osteoporosis with peri- implant bone resorption based on the data obtained by radiological examinations.

**Materials and methods.** In this study, we have included 158 female patients with mandibular edentations, which underwent radiological examination (576 OPGs and 162 CTs). After processing the information from OPG on the available equipment offered by the OPG digital image processing software (Sidexis 4.0) using Klemetti's classification, in four age-based study groups we have determined the presence of osteoporosis, its correlation with peri-implant bone resorption during the surveillance period.

**Results.** The results obtained in the age-based groups allowed us obtaining data on the proposed subject, highlighting the correlation between age – number of implants – osteoporosis – resorption. The examination period was 3-72 months, a period sufficient to analyze and determine peri-implant resorption occurring over time in patients form all study groups. The number of implants in the general characteristic of the patients was equal to 655 implants divided into 4 groups. A moderate direct statistical correlation was observed between the age and the number of inserted implants ( $r_{xy}=0.231$ ,  $p < 0.01$ ). This phenomenon is also confirmed by a strong direct correlation between the age and the degree of osteoporosis ( $r_{xy}=0.676$ ,  $p < 0.001$ ). We have determined a dependence between the female patients' age, the detection of peri-implant resorption in relation with the number of implants, their location, and functional overload.

**Conclusions.** The examination using the OPG allows establishing an accurate, clear and correct diagnosis, as well as choosing a safe treatment plan acceptable in each clinical case. In case of edentation in female patients of an elderly age, prosthetic rehabilitation through dental implants for its controlled functional load on the bone can be considered a pathogenetic treatment to prevent regional atrophy and osteoporosis of the jaws.

**Key words:** osteoporosis, edentation, orthopantomography, mandible, implant prosthesis rehabilitation

### 314. TRAUMATIC ISOLATED AND ASSOCIATED FACIAL INJURIES

Authors: **Dita Corina, Irina Armas, Severina Baci, Aliona Teletin**

Scientific adviser: Dumitru Hitu, MD, PhD, Associate professor, Department of Oral and Maxillo-facial Surgery and Oral Implantology *Arsenie Guțan*

*Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** Facial injuries generate a set of problems and the implementation of treatment-diagnosis algorithm of patients with traumatic isolated and associated facial injuries, could lead to earlier recovery.

**Aim of the study.** Assessment of comparative observational descriptive study of recent cases of traumatic isolated and associated facial injuries.

**Materials and methods.** For the implementation of proposed objective for years 2014-2015, 712 people affected by traumatic isolated and associated facial injuries, traumatic isolated and associated mandibular traumas and maxillofacial injuries have been examined and have benefited from medical assistance, received at Oral and Maxillofacial Clinic (ChOMF) that is located within the Institute of Medical Emergency from Chisinau city.

**Results.** For two years, recent facial injuries cases have constituted 18, 73 of all cases at ChOMF Department. Recent traumatic facial isolated injuries cases have been registered in - 72% and associated in - 28%. Recent cases of traumatic isolated and associated mandibular injuries were present in ratio 3 to 1. Patients with isolated traumas constitute 2,41 % in comparison with one patient with facial associated injuries. The only facial fracture which has showed the opposite proportion is related to one patient with isolated fracture of superior maxilla, in comparison with 2 patients with associated injuries.

**Conclusions.** Ratio of recent facial isolated injuries to those associated is 3 to 1.

**Key words:** traumatic, isolated facial injury, associated facial injury

### **315. DIRECT DENTAL RESTORATIONS OF FRONT TEETH WITH FLOWABLE COMPOSITE MATERIALS**

Authors: **Corneliu Gorea, Ion Roman, Alexandru Danici**

Scientific adviser: Ciobanu Sergiu, MD, PhD, Professor, Department Odontology, Paradontology and Oral pathology

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**Introduction.** Dental aesthetics is a very wide field, which allows each subdomain of the dental medicine to be approached through the aesthetic component.

**Aim of the study.** Restoration of odontous lesions of different degrees of damage to composite fluids.

**Materials and methods.** The study was based on the treatment of 20 patients with odontous lesions. Direct dental restorations with CLEARFIL AP-XEstheticsFlow flowable composite materials were performed. The restoration protocol included: oral hygiene; anesthesia when needed; isolation of the field by application of cofferdam; preparation of carious cavity by minimal invasive technique; treatment of dental wound with sol. 0.05% Chlorhexidine; engraving dental tissues (orthophosphoric acid 37%, 15-30 seconds) and removing it with a jet of water; application of bonding and light-curing; restoration with ONE-Shade flowable composite materials; polishing the restoration.

**Results.** The following study found the benefits of odontous lesion treatments with the use of flowable composite materials by the direct method of restorations using the minimal invasive technique. Patient monitoring was performed (clinically and paraclinically) at 3 months, 6 months and 12 months.

In the treatment of odontous lesions, this protocol was selected using composite materials based on their properties: reduced viscosity (good handling and easy placement); exhibits increased

mechanical properties (wear resistance, durability); high radioopacity and very low polymerization shrinkage.

**Conclusions.** Dental composites are complex restorative materials, but for lasting restorations and very good aesthetic results we must rely on scientific considerations.

**Key words:** dental restorations, CLEARFIL AP-XEstheticsFlow, odontous lesions

### **316. MODEL ANALYSIS BY GERBER`S PRINCIPLE VERSUS CLASSICAL ANALYSIS**

Author: **Cosmin Stan**

Scientific adviser: Dorina Cerasella Șincar, Associate professor; Gabriel Valeriu Popa, University assistant

*Dunarea de Jos University, Faculty of Medicine and Pharmacy, Galati, Romania*

**Introduction.** The model represents the exact positive copy of the total edentulous prosthetic field. The models are analyzed both separately, before mounting in the articulator, and simultaneously, as a whole, from the front and the side view after being mounted in the articulator.

**Aim of the study.** Total edentulousness is a dental disease becoming more common in the population. Through oral rehabilitation of total edentulous patients the aim is to reestablish the functions of the stomatognathic system: mastication, phonation, deglutition and patient physiognomy.

**Materials and methods.** The study was conducted over a period of 4 months, June-September 2017, on a number of 30 complete edentulous patients in Galati county, 18 patients received dentures made by the classical method of mounting the teeth of Gysi, and 12 patients received dental prosthesis made according to Gerber`s modern method of mounting the teeth.

**Results.** The outcomes were assessed taking into account the patient satisfaction regarding mastication, phonation, improvement of esthetic appearance and acquiring a greater comfort in wearing the denture in the case of denture wearer patients according to Gerber`s modern method of mounting the teeth.

**Conclusions.** The Gerber method uses teeth mounting placing the last molar before the red line and ensuring a better stability of prosthesis on the total edentulous prosthetic field. A dental prosthesis made to reproduce as accurately as possible the stomatognathic system functions and to be easily accepted by the patient, guarantees the treatment`s success.

**Key words:** total edentulousness, model analysis, Gerber`s method

### **317. THE USE OF COLLAGEN SPONGE IN SOCKET PRESERVATION**

Authors: **Marina Cretu, Vlad Badan**

Scientific adviser: Andrei Mostovei, MD, PhD, Associate professor, Department of Oral and Maxillo-facial Surgery and Oral Implantology *Arsenie Guțan*

*Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova*

**Introduction.** Due to the development of oral implantology, socket preservation became a widely discussed theme in the professional literature. Different augmentation materials are used for it. The use of collagen sponges as a filler is considered a good alternative for socket preservation with a minimum impact upon bone formation.

**Aim of the study.** The aim of this study is to analyze the effect of Collagen sponge upon postextractional socket healing.

**Materials and methods.** A clinical study has been performed on three patients with periapical chronic inflammatory processes. All these patients were supposed to tooth extraction and

collagen sponge has been applied after antiseptic preparation of the socket. In order to maintain the sponge in the socket, X sutures has been applied. The healing process was evaluated during 3 months. Clinical and radiographical examinations were performed to appreciate the healing process.

**Results.** The usage of collagen sponge for socket preservation appeared to be a good support for the stabilization of the formed blood clot. No complications occurred during healing. Clinical and radiographic evaluation during healing process revealed a good integration of the sponge.

**Conclusions.** The usage of Collagen sponges can be considered a good alternative for socket preservation. However, in case of bone walls defects, further studies are necessary in order to assess the volume maintaining with this method.

**Key words:** collagen Sponge, socket preservation, tooth extraction

### 318. ROOT CANAL IRRIGATION DURING ENDODONTIC TREATMENT

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**Introduction.** Root canal irrigation aims to clean and disinfect root canal system by removing organic tissue, smear layer and microorganisms. The most commonly used irrigants are: NaOCl 0,5-5,25%, EDTA 17%, MTAD, CHX (0.2%, 1%, and 2%), citric acid (10%).

**Aim of the study.** To monitor over the time the effectiveness of endodontic treatment using different irrigants in combination with sonic and ultrasonic activation systems.

**Materials and methods.** The study was based on the treatment of 15 patients with pulpitis and periapical processes who were subjected to endodontic treatment of 9 single rooted teeth and 10 multiple rooted teeth. The irrigation protocol of pulpitis treatment entailed: 2,5%NaOCl; 17%EDTA;5,25%NaOCl; final irrigation: 5,25%NaOCl+ultrasonic activation;17%EDTA+sonic activation; distilled water; drying and filling. In the treatment of patients with periapical processes, the root canals were irrigated as follows: 5,25%NaOCl ;17% EDTA ;2%CHX, temporary filling with calcium hydroxide for 10 days. The second visit entailed removal of the temporary filling, irrigation with 17%EDTA; distilled water; 2%CHX drying and filling, X-ray.

**Results.** The patients were examined at 3, 6 and 12 months. The study showed that treatment by using different irrigants in combination with sonic and ultrasonic activation had a high rate of success (95-97%).

This protocol of irrigation was selected in treatment of pulpitis and periapical lesions due to the properties of each irrigant: NaOCl has bactericidal cytotoxicity, dissolves organic material, it has no effect on the smear layer. EDTA effectively removes the smear layer by chelating the inorganic components of the dentine. It does not have any antibacterial activity and does not dissolve the organic tissues. CHX has a wide antimicrobial spectrum and is effective against Gram-positive and Gram-negative bacteria, especially against *E.faecalis*.

**Conclusions.** Successful endodontic treatment depends on the correct use of the irrigants, respecting the consecutivity, concentration and application time of each irrigant and also a tridimensional filling of root canal.

**Key words:** NaOCl, EDTA, CHX

### 319. NURSING CARIES. INCIDENCE STUDY

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**Introduction.** Nursing caries occurs at an incidence of 19.7% in the USA (Jeffrey Dean, 2016) and 15% in Romania (Luca R., 2017). Nursing caries is a specific form of dental decay that affects the deciduous dentition. The onset of nursing caries is at an early age and progresses rapidly both in depth and on surface. The risk factors in the development of nursing caries can be divided into three main categories: pathogenic microorganisms of the oral cavity, fermentable carbohydrates and dental substrate.

**Aim of the study.** To evaluate the incidence of nursing caries during the prophylactic examination.

**Materials and methods.** This study was conducted at the PMSI Municipal Stomatologic Center for Children, Department of Maxillo-Facial Surgery, Pedodontics and Orthodontics, Nicolae Testemitanu State University of Medicine and Pharmacy, Chişinău, in 2017. The total sample size of the cross-sectional study constituted 39 children aged between 1 and 3 years (average age  $1,9\pm 0,21$  years). The evaluation, performed according to the World Health Organization methodology, involved direct visual inspection and indirect one using dental mirrors. The periodontal probe was also used to examine nursing caries on the dental surfaces. The results and observations of the inspection were collected in the dental medical records (form № 043/e).

**Results.** Among the 39 examined subjects, 6 children were found to have nursing caries (15.38% of cases).

**Conclusions.** Based on the conducted research on 39 subjects (average age  $1,9\pm 0,21$ ), the incidence of nursing caries accounts for 15.38% (6 out of 39). The survey findings correspond to the data of other international studies involving the evaluation of nursing caries.

**Key words:** nursing caries, index of incidence, dietary habits

### **320. RADIOGRAPHIC ANALYSIS OF ANGULATION OF CURVATURE OF ROOT CANALS AND THE PROBABILITY OF COMPLICATIONS OCCURRENCE USING SCHNEIDER AND WEINE'S METHODS**

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**Introduction.** The knowledge of the endodontic system by the practitioner, is the success of the reliable root canal treatment.

**Aim of the study.** This study provides the evaluation of radiographic angulation of root canals and the risks of making errors and complications during endodontic treatment by using Schneider and Weine's examination methods.

**Materials and methods.** Radiographic evaluation was based on examination of orthopantomographic images of 12 patients, which needed endodontic treatment, and presented obvious curved anatomy of the roots. There were analyzed 22 molars and 7 premolars, in order to determine the angulation of root canal curvature by using Schneider's method, and Weine's method, which are the most practically to apply in the daily practice.

**Results.** The data obtained, based on the analysis of the 22 molars and 7 premolars with different degree of root curvatures, by the method of Schneider, were compared with the results obtained by the method of Weine. We can observe the prevalence of root canals with a degree of angulation greater than  $20^\circ$ , at the premolars and the molars which indicates the presence of severe curvatures and great risk of developing the complications. The most common separations of endodontic instruments can be found in the mesial root canals of molars, which are showing a greater degree of angulation of  $300^\circ$ . According to obtained data, 5 out of 7 premolars and 20 of

22 molars analysed in study, have an increased risk of fracture (> 50%) of endodontic instruments and creating ledges during work in the root canal.

However, both methods have a percent of errors, which is due to buccal or oral orientation of curvature and not always can be determined by radiographically as they present 2D plans, but is still a real value, and it is useful for planning a root canal treatment.

**Conclusions.** Schneider and Weine's methods of radiographic analysis, proved to be easy to apply in daily endodontic practice, by allowing to elaborate an individual plan of treatment, to visualize and to outline a proper endodontic access, and to avoid complications during endodontic treatment like: separation of the instruments, perforations and formation of the ledges. These two methods of radiographic analysis are easily applicable and have a major importance in achieving a qualitative endodontic treatment.

**Key words:** radiographic, analysis, Schneider, Weine, methods

### 321. CAD/CAM IN MODERN ORTHOPEDIC DENTISTRY

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**Introduction.** CAD/CAM (Computer - aided Design, Computer - aided manufacturing) is a perspective branch of digital dentistry. The whole CAD/CAM technological process from taking impressions until fixation is performed by chairside and can take only one visit. According to polls (2016), 89% of dentists consider that CAD/CAM technology has to replace conventional process of modelling and manufacturing of prosthetic constructions in the nearest future.

**Aim of the study.** to analyze technological possibilities of CAD/CAM in orthopedic dentistry, to reveal advantages and disadvantages of CAD/CAM technology on the example of a clinical case.

**Materials and methods.** Was carried out a review of the publications of the last 10 years on the selected theme using PubMed system. According to a key phrase "CAD/CAM" 1862 publications were found, 80 publications were selected and analyzed. Research includes data from 20 publications. Examination of a patient at the age of 32 years with partial defect of solid tissues of lateral teeth of the maxilla was performed. Defect was treated with the help of zirconium crowns manufactured by means of CAD/CAM technology.

**Results.** The analysis of literature allowed to define the main advantages of CAD/CAM technology: 1) accuracy of marginal fit and occlusal contacts; 2) high esthetics; 3) concept of one-visit dentistry; 4) decrease of human factor; 5) stability and predictability of treatment. Presented clinical case confirms mentioned advantages of CAD/CAM technology. According to five sources, marginal discrepancy of the CAD/CAM crowns varies from 30 to 60 microns. At the same time traditional full ceramic crowns have an average discrepancy 90 microns. Researches demonstrate maintaining of 95-98% of CAD/CAM crowns for the 6-year period of clinical observation (R. Van Noort, 2012, M. Fages, 2017, Alqahtani, 2017). The analysis of literature revealed fact that rather small significance is attached to applying of CAD/CAM digital workflow in treatment of handicapped people and other categories. Possibility to minimize the number of visits for this group of patients is the greatest advantage. Were defined the following shortcomings of CAD/CAM technology: 1) high cost; 2) increased material consumption; 3) limitations in several types of prosthetic constructions.

**Conclusions.** 1. The analysis of literature showed that CAD/CAM the technology has large prospects in modern dentistry due to constant perfecting. 2. The quality of CAD/CAM crowns and bridges surpasses the quality of conventional constructions of the same type. However, partial and complete CAD/CAM dentures, as well as some other constructions, still have lack of precision.

**Key words:** CAD/CAM, zirconium crowns

### **322. SURGICAL TREATMENT OF MANDIBULAR FRACTURES**

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**Introduction.** Due to its position, shape and function, the mandible is most often exposed to trauma across the whole oro-maxilo-facial area. The mandible fractures take the first place in facial trauma, so their treatment requires a comparative analysis of all treatment methods and the choice of the optimal variant. The most common used method is conservative-orthopedic treatment, used on average in 60.86% cases. In situations when it is impossible to reduce and fix fractured fragments with orthopedic devices, the surgical method of treatment is used. As a rule, the exooral approach is used being the best visibility method, but it also has disadvantages, such as excessive trauma to tissues adjacent to fracture and prolonged healing time. To remedy these disadvantages, the method of osteosynthesis is used by endooral access, but as a treatment method it continues to be used much less frequently.

**Aim of the study.** To perform a comparative analysis of several sources of information on the methods of surgical treatment of mandibular fractures and their effectiveness.

**Materials and methods.** The research material of the statistical study comprised a group of 580 patients with mandibular fractures, female and male, aged between 20 and 89 years, which is 70.55% of viscerocranial fractures. Clinical cases were selected from 5523 records for the last three years during 2015-2017, examined, operated and treated in the Oral and Maxillofacial Surgery Department of the Emergency Medicine Institution (EMI) in Chisinau. Clinical case data have been taken from patient records in the archives (EMI) and examined using Microsoft Excel.

**Results.** Surgical methods were used in 227 patients, 123 surgical interventions were performed by osteosynthesis with miniplates, with exobuccal access - 69.1% and endobuccal access - 30.9%). Osteosynthesis with metallic wire was performed in 76 patients, with exobuccal approach - 73, 68% and endobuccal approach - 26.32%. In other 38 interventions, fractures were managed by combined method.

**Conclusions.** The mandibular fractures occupy the leading position in facial trauma due to mandible position, shape, and function. Surgical treatment using various methods of osteosynthesis was applied in 39.14% of patients with mandible fractures.

**Key words:** mandibular fractures, osteosynthesis, surgical treatment

### **323. CLINICAL EVALUATION OF PERIODONTAL STATUS IN POSTPARTUM WOMEN**

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**Introduction.** Due to significant hormonal changes during pregnancy, clinical consequences can be noticed in the oral cavity, mostly in the third trimester of pregnancy and immediately after.

**Aim of the study:** The paper intended to demonstrate the clinical modifications of oral cavity in postpartum period, especially those of the periodontium.



**Materials and methods.** Twenty volunteers were recruited among postpartum women, of which two of them withdrew along the study. The subjects were patients from the Obstetrics-Gynecology Clinic of County Emergency Clinical Hospital Tirgu Mures. The participation in the study was voluntary and based on informed consent. The elements of the oral cavity were clinically examined, focusing on periodontal changes. The anamnestic data with significant relevance in the etiopathogenesis of these specific modifications in pregnancy and postpartum period were noted and afterwards analyzed in a questionnaire imagined by the author.

**Results.** Of the eighteen postpartum women from our study, 33% of them were giving birth for the first time. 61% came from rural area, 67% of them had medium educational studies and only 44% had a correct follow-up of the pregnancy (family doctor + OB-GYN). 22% had the last dental check-up before pregnancy, 56% were regularly smoking, 83 % presented bacterial plaque & calculus, 61% had caries, 67% claimed that brushed their teeth twice a day. Regarding the periodontal modifications, 82% presented red, swollen gums with soft consistency, 78% were bleeding on brushing, 17% were spontaneously bleeding, 28% had dental mobility, 17% superficial periodontal bags and at 11% of the patients gingival epulis was found.

**Conclusions.** The periodontal modifications specific to pregnancy can also be observed postpartum. The inflammatory phenomena were less emphasized at the patients that had their last dental cleaning and check-up right before pregnancy. Moreover, the statistical results represent a certainty of the fact that the educational, hygiene and sanitation factors, as alimentary noxae and vicious habits have a significant impact on the periodontium. Having a dental check-up before pregnancy seems to be crucial to periodontal health.

**Key words:** periodontal, postpartum, pregnancy

### 324. ANGLE MALOCCLUSION CLASS II/1

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**Introduction.** Class II / 1 malocclusion is a quantitative and directional growth disorder, produced at the jaw or dental level, whose essential characteristics are: insufficient development in the transverse plane (mono or bimaxillary, symmetric or asymmetric), distalized occlusion type, sagittal inoclusion with a normo, hyper or hypodivergent facial pattern, associated with functional and aesthetic disorders.

**Aim of the study.** Studying and evaluating etiology aspects, diagnostic methods such as photostatic exam, digital cephalometrics and biometric study of models in dento-maxillary abnormalities Class II / 1 Angle.

**Materials and methods.** The basic material for the research performance is the result of the biometric analysis and model study according to the methods proposed by Pont, Korkhaus, Nance, Linder Hart, Bolton, where eight patients with class II / 1 Angle malocclusion were analyzed.

**Results.** The analysis of Pont's modeling models, Linder Hart, determined that in the class II / 1 Angle abnormalities, both jaws suffered transversal shortage. At the premolar (at the maxillary: Pont -100% Linder Hart -80%, mandible: Pont -80% Linder Hart -33.33%), at the molar level (at the maxilla: Pont and Linder Hart -93.33% at the jaw: Pont -60% Linder Hart -33.33%) Nance lists both excess space in 60% and 40% deficit which demonstrates the variety of class II / 1 Angle malocclusion. The Korkhaus analysis found elongation of the anterior maxillary sector in 66.67%. **Conclusions.** Class II malocclusion Angle is one of the most common and difficult to treat anomaly compared to others because of a wide variety, and the interaction between different etiological factors

**Key words:** malocclusion, model analysis, Pont index

### **325. RECONSTRUCTION OF THE CONTACT POINT WITH THE PALODENT V3 SYSTEM.**

Author: **Ecaterina Borta**

Scientific adviser: Iurie Marina, MD, University assistant, *Pavel Godoroja* Dental propedeutics *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova

**Introduction.** The contact point has a very important role in protecting the interdental papillae; it spreads uniformly the masticatory pressure that is developed during the mastication act.

**Aim of the study.** To achieve a three-dimensional restoration of the proximal surface with punctiform contact.

**Materials and methods.** The study was based on the use of matrices with anatomical relief from the Palodent V3 system, with the control of matrix adherence at the cervical and lateral sides on clinical simulators. Reconstruction of the contact point on the clinical simulators was performed by the direct method, using atraumatic pins, anatomic relief matrices and strong Ni-Ti rings. The titanium nickel rings are long lasting, surpassing the stainless steel rings. The strength of the ring retainer improves the retention in the tooth. Rings and wedges can overlap and work well in complicated class II restorations, such as those with a missing cusp. The matrices, wedges and protection wedges are anatomically designed to provide a better seal and narrower contacts.

**Results.** The Palodent V3 system components work together to seal and shape the restoration, minimizing the required time to finish it, as well as the possibility to re-do the restoration due to a poor contact. The system can be configured for multiple restorations at once, and the WedgeGuard provides added efficiency by protecting the adjacent tooth, allowing the clinician to prepare the cavity without complications. The tines on the rings help to provide excellent retention on the tooth and the system seals the restoration to minimize the amount of finishing required. It was noticed that adapting the wedges to the matrix leads to firm gingival closure and firm predictable contacts. The narrow rings adapt the matrix to the lateral teeth and enlarge the interdental space at the micron level.

**Conclusions.** The use of the Palodent V3 system allows us to get a predictable, easy and fast result.

**Key words:** contact point, wedge, matrix, rings

### **326. MEDICO-LEGAL ASPECTS OF DENTAL FLUOROSIS AMONG CHILDREN OF ENDEMIC AREAS FOR FLUOROSIS**

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Scientific adviser: Elena Stepco, MD, PhD, Associate professor, Department of Maxillo-Facial Surgery, Pedodontics and Orthodontics

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**Introduction.** Dental fluorosis presents an important medical and social problem. The results of drinkable water surveys in the Republic of Moldova show that in about 17% of the pre-university institutions located in more than 2/3 of the administrative territories, where do study 13.5% of the total number of students, the water samples are inadequate because of the excess of fluoride in water. As a result, every 7th student in the country is at risk of developing fluorosis.

**Aim of the study.** The aim of the research is to analyze the patients' right to information about the risk of dental fluorosis and to develop measures to remove obstacles on the subject and promote oral health in endemic communities.

**Materials and methods.** In accordance with the aim and objectives of the study, a selective transversal epidemiological study of dental fluorosis was performed, in which 93 children aged 12 and 15 years from the village of Parlita, Ungheni district were examined.

**Results.** The incidence of dental fluorosis in children in the endemic area - Parlita, IF represented 83.54%. The Community Fluorosis Index, CFI is 1.17, dental fluorosis having a repercussion on public health of medium significance. The study found all forms of fluorosis according to WHO classification, from questionable to severe in different proportions. Thus, following the analysis of the results, the following values were obtained: the questionable form - 27 (40.9%) cases, very mild - 14 (21.21%) cases, mild - 11 (16.6%) cases, moderate - 13 (19.6%) cases and serious - 1 (0.15%) case.

**Conclusions.** The value of the collective COE indicator consisted of 96 teeth and the index of caries intensity was 1.21, so the level of this nozology's intensity was estimated to be low (1.2-2.6) according to the WHO (1980) standards for children in the area endemic fluorosis.

Every second interviewed student considered his right to information on dental fluorosis prophylaxis to be denied, only 25% were informed by the dentist and 36.4% by the physician, motivated by very low ensuring with physicians and dentists in the endemic district.

**Key words:** dental fluorosis, Community Fluorosis Index, COE indicator, endemic areas, right to information

### **327. THE IMPACT OF THE FAMILY ENVIRONMENT RISK BEHAVIOR ON ORAL HEALTH IN PRE-SCHOOL AGE, IN EARLY CHILDHOOD**

Authors: **Eudochia Traista, Elena Hristea, Olga Balteanu, Svetlana Plamadeala, Svetlana Grec**

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**Introduction.** Early Childhood Caries (ECC) represents one of the important problems in children from a very early age and it is a major public health problem. The basic concept of individualized prevention is to recognize high-risk patients and individual behavioral risk factor modification by establishing an efficiently preventive program.

**Aim of the study.** The aim of the study is to determine the relationship between behavioral risk factors in the family environment and susceptibility to dental caries in young children.

**Materials and methods.** The clinical material of this paper includes the investigation data of 126 children of 1-3 years. There were estimated the frequency and intensity indices of dental caries, behavioral risk factors in the family environment of the children who took part in the study. Acidogenic bacterial plaque has been observed, also the *Streptococcus mutans* concentration in the saliva and salivary pH had been determined, using the kit standards of GC. Complex evaluation of caries risk was performed with Cariogram software. The study was performed according to ethical requirements, with written consent of parents of children, or their legal representatives.

**Results.** ECC was found in 30.16% of examined children. There were determined the cumulative influence of a complex of risk factors: high exposure to sugar- in 42.86% of cases, early exposure to common oral mouth germs due to poor oral health which accidentally spreads germs in children - 49.21%, poor oral health habits (such as lack of regular tooth brushing - in 51.59%, night time bottles with milk - in 53.97% of cases). The direct relationship between increased susceptibility in dental caries in pre-school age and unhealthy family habits environment there was established.

**Conclusions.** Complex evaluation of behavioral factors of risk caries from family environment represents an important measure contributing to the better understanding of the caries profile in

patients and a first step in developing of the individualized prevention program of dental caries in young children dental caries.

**Key words:** early childhood caries, factors of risk, caries risk assessment

### **328. ENDO-SINUS BONE GAIN IN LATERAL SINUS FLOOR ELEVATION WITH SIMULTANEOUS IMPLANT PLACEMENT WITHOUT GRAFTING MATERIAL**

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**Introduction.** Many studies describe the necessity of using grafting materials in case of lateral sinus floor elevations. Besides the advantages of it, an important role plays the autogenous bone which is often mixed with xenograft or synthetic materials in order to achieve a better quality tissue. However, these methods are often related to complications like sinusitis or failures.

**Aim of the study.** To appreciate the endo-sinus bone gain in case of lateral sinus floor elevation with immediate implants placement without any grafting material.

**Materials and methods.** The study was axed on 5 patients (mean age  $38.23 \pm 3.12$  years) who received 12 implants in posterior sides of upper jaw. The implants insertion was performed simultaneously with lateral sinus floor elevation using the trap door technique. Before implants insertion the sinus cavity formed after elevation were filled only with blood collected from peripheral vein. After suturing, platelet rich plasma was injected from buccal aspects. Six months later, the second surgical step was performed, and the prosthetic treatment was performed after another 4 weeks. Periimplant bone loss as well as endo- sinus bone gain during healing and 1 year postprosthetic has been evaluated. Statistical analysis was made by calculating mean values, standard errors and Pearson correlation test.

**Results.** All implants successfully integrated. Residual bone height from mesial and distal aspects was  $5.96 \pm 0.4$ mm and  $5.05 \pm 0.21$ mm, while the length of implants protruded into sinus were  $5.81 \pm 0.35$ mm and  $6.15 \pm 0.19$ mm respectively. At the end of healing period, the endo-sinus bone gain consisted  $7.38 \pm 0.402$ mm (mesial) and  $8.17 \pm 0.11$ mm (distal), but radiographically it had a lower opacity than the native one. One year later, the bone became mature with good corticalization of the new sinus floor, with dimensions of  $5.93 \pm 0.56$ mm and  $6.65 \pm 0.087$ mm from mesial and distal aspects. During this period, a shrink of  $1.45 \pm 0.16$ mm and  $1.51 \pm 0.19$ mm occurred. The cortical periimplant bone loss around implants from mesial and distal aspects was:  $0.23 \pm 0.086$ mm and  $0.21 \pm 0.043$ mm during healing;  $0.4 \pm 0.12$ mm and  $0.68 \pm 0.07$ mm during 1 year. A strong correlation between implant protruded length and endo-sinus bone gain was observed: 0.92 and 0.682 (from mesial and distal aspects).

**Conclusions.** In appropriate conditions, the lateral sinus floor elevation without grafting material and with simultaneously implant placement lead to formation of an adequate amount of endo-sinus bone. By this way, it is possible to avoid the use of grafting materials. However, more studies and longer follow-up periods are necessary in order to appreciate the limits and indications of this method.

**Key words:** lateral sinus lifting, dental implants

### **329. LOCAL MEDICATION IN ACUTE PERICORONITIS**

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**Introduction.** Acute pericoronitis is an inflammatory acute infection that appears as a complication of the eruption process of the wisdom lower teeth, that interests tissues surrounding the crown. The cause of the occurrence of pericoronaritis is the combination of the microbial and traumatic factors due to the partial eruption. Knowing the particularities of the etiology, pathogenesis and evolution of this disease as well as knowing the problems of oral microbiology is of great importance for the dentist in establishing the treatment plan and the more effective control of the infection prevention measures.

**Aim of the study.** Determination of the microbial etiological spectrum, involved in the etiology of acute pericoronaritis, for the evaluation of some pharmaceutical agents, like antibiotics, antiinflammatory drugs or their combination in the septic site elimination.

**Materials and methods.** A prospective clinical trial was conducted on 30 patients with low grade molar eruption pathology, who were referred for surgical treatment to the Dento- Alveolar Surgery Department of the University Dental Clinic nr.2 during 2017-2018. An important direction of the research was to identify the etiological spectrum of microbial agents involved in acute pericoronitis from serous or purulent collections within the 30 patient group. In our study, an antibiogram was made for every patient after collecting the secretions under the third lower molar's flap. In the laboratory was determined the sensitivity, resistance or indifference to 13 antibiotic agents.

**Results.** The results of microbiological analysis have identified positive polymicrobial cultures in 32.58% of cases and unimicrobial cultures in 67.42% of cases. Unimicrobial cultures showed the presence of Streptococci from the Viridans group. Following the antibiogram, were established that the microbial cultures identified were 100% susceptible to the following drugs: Amoxicillin, Amoxiclav, Ampicillin, Levofloxacin, Cefotaxime and Cefepim .

**Conclusions.** Considering the laboratory tests on the antibiotic susceptibility of microbial flora in the dental inflammation , penicillins (amoxicillin / amoxiclav), cephalosporins, erythromycin, clindamycin, and tetracyclines are the most useful and used antibiotics for the identified microflora.

**Key words:** pericoronitis, microorganisms, antibiogram, treatment

### **330. EFFECTIVENESS OF CAUSATIVE TOOTH EXTRACTION IN MAXILLARY SINUSITIS OF DENTAL ORIGIN**

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Scientific adviser: Sirbu Dumitru, MD, PhD, Associate professor, Department of Oral and Maxillofacial Surgery and Oral Implantology *Arsenie Gutan*

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**Introduction.** Odontogenic maxillary sinusitis (OMS) is an inflammatory disease caused by the spread of dental inflammation into the sinus. The rate of OMS was reported to be 25-40%. A lot of methods of treatment were proposed starting with medicine administration only, till radical sinusotomy. The question is what is the efficacy of the initial treatment, the one that includes the treatment of causal tooth only.

**Aim of the study.** The purpose of this study was to identify the factors of significance that may contribute to the results of the initial treatment of OMS.

**Materials and methods.** Twenty four patients were studied, which were divided in 2 groups, depending on the result of the treatment: effective and non-effective. Efficacy of the treatment was evaluated 3 months after causative tooth treatment with CT scan, which was compared with initial one. First group included 21 patients and the second one 3 persons, that required surgical treatment.

**Conclusions.** 1. Causal tooth treatment of OMS is an effective and miniinvasive method.

2. Maxillary ostium obstruction is an important factor to predict outcome of the treatment

**Key words:** Odontogenic maxillary sinusitis- OMS, treatment, causal tooth

### **331. THE PRACTICAL IMPORTANCE OF THE CBCT IN DIMISHING THE RISK OF OCCURRENCE OF INTRAOPERATIVE AND POSTOPERATIVE COMPLICATIONS IN ORAL AND MAXILLOFACIAL SURGICAL TREATMENT**

Authors: **Mihai Coadă, Stanislav Strisca**

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**Introduction.** CBCT (Cone Beam Computed Tomography) – a modern device, crucial in oral maxillofacial surgical treatment. CBCT uses X-ray beam that diverges, thus forming a cone. It is a form of X-ray computed tomography. All of these images are save in the DICOM (digital imaging and communication in medicine) format, where they are then studied and edited of special software and/or in correlation with other modern techniques, like as CAD/CAM system.

**Aimof the study.** Demonstration of the practical importance of application of CBCT (Cone Beam Computed Tomography) with the aim of prevention of intraoperative and postoperative complications in oral and maxillofacial surgery.

**Material and method:** This study was conducted in the Dental Clinic “Omni Dent” and the OMF Surgery Section of the National Scientific and Practical Centre of Emergency Medicine (CNȘMPU), where 10 clinical cases have been studied, in the process of treatment of which the CBCT was applied. Therefore, the study included examination of medical documents, multimedia files (photo, video), radiological images, medical software projects. Also, based on the obtained data, we consulted specialty literature, scientific journals and medical staff. As methods of study, we used the descriptive and analytical method and the synthesis of literature data.

**Results.** By effectuating the study, we observed that the usage of CBCT in the oral and maxillofacial surgical treatment of 10 patients allowed the precise establishment and confirmation of the diagnosis, as well as planning and monitoring of the treatment evolution without occurrence of the intraoperative and postoperative complications.

**Conclusions.** The application of CBCT is a crucial factor in the oral and maxillofacial surgical treatment, by virtue of what the doctor, with the aid of the obtained data, has the possibility of raising considerably the rate of success of the surgical intervention, by careful and thorough formation of the treatment plan and its practical application.

**Key words:** CBCT, complications, treatment, surgery, imaging

### **332. THE REASONABLE POSTOPERATIVE DRUG THERAPY OF PATIENTS WITH LOWER THIRD MOLAR IMPACTION**

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**Introduction.** Clinical forms of lower third molar impactions are extremely varied; generally erupt between the ages between 18 and 35 years old. In majority of cases, surgical treatment is supplemented with antimicrobial medication with the aim to reduce the risk of complications. Empirical prescribing of systemic antibiotics lead to increasing resistance of microorganisms and disruption of saprophytic microbial flora in organism.

**Aim of the study.** Determining the effectiveness of anti-inflammatory medication after extraction in reducing the risk of complication, reducing the Celsian signs of inflammation and in the same time to avoid systemic use of antibiotics.

**Materials and methods.** This study is a prospective record based study of the patients with symptomatic impacted mandibular third molars that were treated during 2017 and up to January 2018. The 60 panoramic radiographs and the patient's clinical record files were retrieved for evaluation. To systematize the diagnosis and establish the difficulty degree of the surgery, there were taken measurements of the radiological space formed by the distal surface of the second molar and the temporal crest of the mandibular ramus. Also it was measured the mesio-distal diameter of the inferior third molar crown by introducing panoramic radiographs in Adobe Photoshop and making their digital analysis. The patients were divided in two research groups, according to the collected data. In 30 patients was performed lower third molar extraction with systemic use of antibiotics and in the other 30 patients were prescribed only anti-inflammatory drugs after the tooth extraction.

**Results.** According to the obtained data at the end of the study, it was found that the impaction degree influences the surgical extraction method, as it determines the post-operative antimicrobial indications. In addition, there are no significant differences between the results of the two groups.

**Conclusions.** The use of systemic anti-inflammatory therapy reduce the risk of complications, reduce postoperative swelling, reduce the trismus, but it does not have the same side effects of systemic administration of antibiotics, such as increasing resistance of microorganisms and intestinal flora disruption.

**Key words:** third molar, anti-inflammatory medication, antibiotic

### 333. TECHNIQUES AND PROCEDURES OF ISOLATION OF THE WORK FIELD IN DENTAL TREATMENT

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**Introduction.** In the contemporary dental literature we find very often questions about isolation dental technique. When performing dental restorations with hydrophobic composite materials there are problems with biological fluids like: saliva, gingival fluid, blood, condensation of vapors from the exhaled air. Some of this issues might be avoided by using wool rolls, saliva vacuum cleaners, gingival retraction yarn, thread but when the issue is about condensation of vapors from the exhaled air the only solution is high quality isolation of teeth. To have best isolation of operative field the best choice is to use rubber-dam isolation system.

**Aim of the study.** Argumentation of the importance of using the rubber-dam isolation system and familiarization of dentists with the particularities, components and methods of using this system.

**Materials and methods.** The study was based on a complex of questions given to dentists from different areas of the Republic of Moldova. A total of 140 doctors were questioned out of which 95 doctors were from Chişinău and 45 doctors were from the North and the South of the country. The questions they answered were:

1. Do you know about the isolation rubber-dam system?
2. Do you use this system in your daily work?
3. Are you satisfied with the quality of the operative field with this system?
4. The quality of isolation of the operative field?

There were three options of answers: yes, no, other answer. Positive answers have the following percentage: 1- 97,7%; 2- 86,2%; 3-90,8%; 4-75,9%.

**Results.** After the study was completed, we determined that most of the dentists from the country know about this isolation system and they are using it in daily work being satisfied about its quality and results. Even if the cost of the system and the instruments used for it is high, 90% of specialists prefers to bear these costs in favor of good quality of work and also in favor of patients safety.

**Conclusions.** After a detailed study of the dental methods of isolating the working field from the biologic fluids, the rubber-dam isolation system appeared to have more advantages, if compared to the wool rolls, vacuum cleaners and other methods. Also, the doctor has the possibility to apply the working technique depending on the clinical case and doctor's skill.

**Key words:** isolation, rubber-dam, contemporary, comfort, dentist

### 334. PARTICULARITIES OF ATYPICAL DENTAL EXTRACTIONS

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**Introduction.** Dental extractions are the most frequent procedures in oral surgery, which interest future rehabilitation with prosthetic or implanto-prosthetic treatment. Therefore, we pay attention to atypical dental extractions in order to preserve soft tissues, minimizing traumatic effect in order to facilitate prosthetic or implant-prosthetic rehabilitation.

**Aim of the study.** The aim of study is to analyze the efficiency of different techniques of teeth extractions.

**Materials and methods.** A clinical study has been performed to evaluate the following teeth extractions techniques: with Periotome, Piezotome, Benex Root-Control and Shield technique. The efficiency of each device has been analyzed regarding the working time, difficulty of manipulation and traumatic effect.

**Results.** The usage of Periotome, Piezotome, Benex Root-Control and Shield techniques, appeared to be effective procedures in atypical extraction to monoradicular teeth with minimal traumatic effect, preserving soft and hard tissues. However, the upper mentioned techniques are not suitable alone for the molars with divergent roots, due to the necessity of roots separation before extraction. A combination of drilling burs and extractions devices are necessary in such cases.

**Conclusions.** The usage of different devices for minimally invasive teeth extractions has a positive effect upon soft and hard tissues healing and creates the possibility of immediate implant inseration in particular cases. A combination of techniques is necessary in case of molar extractions. Further studies are necessary to evaluate the efficiency of shield technique.

**Key words:** atypical extraction, Periotome, Piezotome, Benex root control

### 335. PERIODONTAL MANIFESTATIONS IN MANDIBULAR CRANIAL SYNDROME

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**Introduction.** The mandibular cranial dysfunctions are pathological entities in which at least one of the components of the dento-maxillary apparatus is not structurally or functionally adapted to its own activity. These disorders include manifestations in the temporomandibular joint or neuromuscular system and occlusal disharmony manifested in the dento-periodontal component of the dento-maxillary apparatus. Unfavorable occlusal relations causes changes to the fundamental positions of the mandible, resulting in non-physiological forces exerting a negative impact on the periodontium manifested clinically and radiologically through: dental mobility, gingival retraction, periodontal bags, widening of the desmodontal space.

**Aim of the study.** The purpose of this study was to identify periodontal signs produced by occlusal trauma and to remove potentially harmful paradontm factors by obtaining a mandibular-maxillary relationship that maintains the health of the dento-maxillary apparatus.

**Materials and methods.** A study based on the clinical, paraclinical and dental treatment of the patients included in the study group was performed. A lot of 20 people with at least one of the following signs considered to be inherited from mandibulo-cranial disorder: dental mobility, pathogenic dental wear, root resorption, widening of the desmodontal space, Stielmann cracks, occlusal parapuncture (bruxism), hypercementosis, false or true periodontal pockets. The age range most commonly experienced by periodontal suffering from occlusal trauma is between 15 and 45 years with an average of 32.9 years. The study was conducted between 01-02-2016 and 01-02-2018, the ratio of women and men being 16 to 4 in favor of women.

**Results.** During the study, we were able to highlight that primary or secondary occlusal trauma is a cofactor in the production of periodontal disease. In the absence of microbial plaque, occlusal trauma, does not produce gingivitis or periodontitis, and minor periodontal lesions are reversible. The treatment of dysfunctions of the cranio mandibular system is aimed at: occlusal stability, satisfactory mastication, satisfactory phonation and the absence of signs of marginal periodontal suffering.

**Conclusions.** Occlusive trauma occurs when one or more teeth are harmful to excess strain, by intensity, duration, frequency, direction. Occlusal trauma is a cofactor in the production of periodontal disease; therefore, treatment should begin early by correctly identifying the causes of occlusal disharmony and removing them. The purpose of the treatment is to establish the morpho-functional integrity of the dento-maxillary apparatus with minimal biological sacrifice.

**Key words:** cranial mandibular disorders, periodontium, occlusal trauma, occlusal disharmony

### **336. CEMENTED-RETAINED VERSUS SCREW-RETAINED FIXED IMPLANT-SUPPORTED PROSTHESES**

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Scientific advisers: Chele Nicolae, MD, PhD, Associate professor, Department of Oral and Maxillo-facial Surgery and Oral Implantology *Arsenie Gutan*; Diana Uncuta, MD, PhD, Associate professor, Department of Dental Propaedeutics *Pavel Godoroja*

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**Introduction.** Prosthetic rehabilitation of partial edentulous patients is today a challenge for clinicians and dental practitioners. A satisfying aesthetic result may not only depend on a visually pleasing prosthesis but also to natural surrounding peri implant soft tissue architecture and emergence profile. The application of dental implants in order to recover areas of missing teeth is going to be a predictable technique, however some important points about the implant angulation, the stress distribution over the bone tissue and prosthetic components should be well investigated for having final long term clinical results. There are two different methods of retaining a fixed implant-supported restoration: screw retention and cementation. All of the two restoration techniques give to the clinicians several advantages and some disadvantages.

**Aim of the study.** To evaluate the survival and success of screw versus cement-retained implant crowns and to compare the long-term outcome and complications of cemented versus screw – retained implant crown prostheses.

**Materials and methods.** The study included 20 people with single missing tooth, who received implant prosthetic treatment. Patients were divided into two groups: the study group with 10 screw retained restorations and the control group with 10 cemented-retained restorations. The following parameters consisted of PES, WES, ceramic fracture, abutment screw loosening, metal frame fracture and radiographic bone level were evaluated.

**Results.** Twenty patients were treated with implant supported crowns, 10 in the cemented group and 10 patients in the screw-retained group. Significant differences between groups were not found. There were no metal frame fractures, ceramic fracture or abutment screw loosening in either type of restoration.

**Conclusions.** Single tooth implants seem to be an achievable treatment option for functional rehabilitation of tooth loss. There is no significant difference between cement- and screw-retained restorations for major and minor outcomes with regard to

**Key words:** implant, cement- retained, screw- retained

### 337. TREATMENT OF DEEP CARIES USING MODERN TECHNIQUES

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**Introduction.** Deep caries is treated using Stepwise technique with subsequent application of calcium hydroxide filling (Base.it, Spident). Mineral trioxide aggregate (ProRoot MTA, Dentsply) is used in the treatment of deep caries, inducing pulp cell proliferation and high-strength tissue formation.

**Aim of the study.** To evaluate the success rate of modern techniques in the treatment of deep caries.

**Materials and methods.** The study was based on the treatment of 18 patients diagnosed with deep caries. Half of the patients were treated with Stepwise technique using calcium hydroxide, while mineral trioxide aggregate was used to treat other patients. The operative protocol was performed at a single visit: X-ray, professional teeth cleaning, vitality tests, isolation of the operative field, cavity preparation, applying the medicated and insulating filling, applying the final filling and control X-ray.

**Results.** To carry out a correct and successful treatment of deep caries it is important to establish the right diagnosis. Compliance with all stages of clinical and paraclinical examination will allow to minimize diagnosis errors. Treatment entailing compliance with all stages increases the chance of preserving dental vitality. Each method of treatment needs to be staged and assessed over time. Periodic control increases the rate of success and prevents the occurrence of complications.

**Conclusions.** The study results demonstrate that the treatment of deep caries by using mineral trioxide aggregate has a higher success rate as it induces pulp cell proliferation, cytokine release, formation of very high-strength tissue, and synthesis of dentin interface that resembles hydroxyapatite. The treatment of deep caries with Stepwise technique using calcium hydroxide shows a lower success rate due to the fact that calcium hydroxide does not offer a sealed adaptation to dentin, it is cytotoxic in cell cultures and reparative dentin is characterized by "tunnel defect".

**Key words:** deep caries, Stepwise technique, calcium hydroxide, mineral trioxide aggregate

### **338. CLINICAL EVALUATION OF DENTAL STATUS REGARDING SIX-YEAR MOLARS AT CHILDREN AGED BETWEEN 8 AND 11 YEARS OLD**

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**Introduction.** The first permanent molar, also named "the six-year molar", is well-known for its importance in the oral cavity because it is key factor in occlusion. It bears the maximum occlusal load, it maintains arch perimeter, has maximum surface area, provides best anchorage and it is most commonly decayed.

**Aim of the study.** The purpose of this study was to evaluate and analyze the dental status of six-year molars at children aged 8 to 11 years.

**Materials and methods.** An analytical study was conducted on 54 children aged between 8 to 11 years old from a primary school in Ludus, Mures county, Romania. We performed the clinical examination and completed a dental research chart. The participation in the study was voluntary and based on parental informed consent. For the clinical examination, we used disposable gloves and sterile, single-use dental instruments. After the examination, questionnaires were applied to each participant.

**Results.** Of the children participating in our study, 46% were 10 years old and 56% were girls. 48% of the permanent molars were clear and complete, 21% were decayed, 14% were filled, 8% were sealed, 7% were radicular rests, and only 1% were missing. Regarding oral hygiene, the answers from the questionnaire revealed that 61% of the children brushed their teeth every day, 44% once and twice a day, 74% in the morning. 83% visit the dentist only if needed and 43% did not remember when the last dental visit was.

**Conclusions.** The dental status of six-year molars is closely correlated with oral hygiene and dental check-ups. Having the first permanent molars sealed and treated in time is necessary, especially at young age.

**Key words:** dental status, six-year molars, children

### **339. IMMUNOGLOBULIN LEVEL IN ORAL FLUID AND BLOOD SERUM IN CARIORECEPTIVE CHILDREN**

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**Introduction.** Dental caries are the most common affection of the human population, at the same time, the mechanism by which some people are carioreceptive, and others remain free of caries, is of interest to researchers in the field.

**Aim of the study.** assessing the level of immunoglobulins in oral fluid and blood serum and highlighting their influence on the susceptibility of children to dental caries.

**Materials and methods.** In the case-control study 162 children, aged between 7 and 18 years have been examined. In the research group (L1) were included 81 children with severe carious activity, and the control group (L0) was made up of 81 caries-free children. Also, were evaluated dental caries prevalence indexes (IP) and indices of caries experience (dft, dfs, DMFT and DMFS). Was identified acidogenic bacterial plaque, concentration of the *Streptococcus mutans* in saliva, dental biofilm and in salivary pH with the use of standart kits GC. Complex assessment of caries risk was done using Software Cariogram. Immunoglobulin level in oral fluid (OF) and

blood serum was determined by the immunoenzymatic method of analysis (Vectior-Best, Russia). The study was conducted in accordance with ethical requirements, with the written consent of the children's parents or legal representatives. Analysis of statistical data, using parametric and nonparametric tests, was done using Microsoft® Excel® 2013 programs with the help of the function and of these programs.

**Results.** In children in group L1 there was a significant decrease in the level serum IgA, IgG, IgM and OF sIgA, IgA, IgG, being in reverse with the number of strains *Streptococcus mutans* in saliva, dental biofilm and indices of caries experience.

**Conclusions.** significant decrease in immunoglobulin levels in oral fluid and blood serum found in carioreceptive children is one of the important factors of carious risk and an unfavorable indicator of aggressive evolution of dental caries, which must be considered when planning individualized preventive measures.

**Key words:** immunoglobulins, dental caries, carious risk

#### **340. MALOCLUSION PATTERNS IN PHYSICALLY, AUDITORY AND VISUALLY HANDICAPPED PATIENTS IN REPUBLIC OF MOLDOVA**

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**Introduction.** The main problems of orthodontics from Republic of Moldova is to determine either the genetics or enviromental factors influence the development of malocclusions

**Aim of the study.** The purpose of the study is to determine the prevalence of malocclusion in children with special needs and relation with neurological disorders in the process of social behavoir of children.

**Materials and methods.** It was examined 2057 children with special needs (physically, visually, auditory, others) aged between 7-15 from diferent orphaned school from Republic of Moldova. Clinical examination of children included: disponsable dental mirror, chemical pencil, wooden spatula, calipser, portable light. Control group were selected 1345 children from normal school who did not have any neurological disorders and treatment of malocclusions.

**Results.** In sagital plan malocclusion was associated with 69 (9,75%) cases with auditory handicapped, 74(14,8%) children with visually handicapped, but in 33(18,33%) - with physically handicapped children. Mostly, malocclusion have been detected in physically handicapped children in vertical and transversal plan. Malocclusion varied in boys between 58,8% and 63,89% and in girls between 36,11% and 41,21%. The most affected age is 12-15 in visually handicapped children, 9-12 – auditory handicapped children and 7-9 age- in physically handicapped children.

**Conclusions.** Auditory, visually and physically disorders can be considered as key predictors and risk factors in appearance of malocclusion in children. Children with special needs may be treated according to the age and the nature of malocclusions.

**Key words:** malocclusion, children, special needs, orthodontic treatment

#### **341. NEW METHODS OF RESTORING INTERDENTAL CONTACTS**

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**Introduction.** Interdental contacts are an important factor to keep dento-alveolar system healthy. Its basic functions are protecting the underneath papilla and periodontal structures, prevention of carries and dispersal of masticatory forces. Studies show that distribution of dental caries is unequal, approximal surfaces being affected in up to 77%. Approximal caries may be difficult to diagnose and treat, even for an experienced dentist due to its hidden location. Diagnosing requires use of other methods than visual-tactile examination, such as: bitewing radiographs, fiberoptic-transillumination or fluorescent system like Saprolife. It is impossible to restore approximal surfaces with tight interdental contacts without using specially designed systems, like Palodent or Bioclear Biofit. This leads to an increased treatment time, especially when multiple teeth are affected.

**Aim of study.** To study the possibility of decreasing time necessary for restoring interdental contacts, using new materials and methods, preventing further complications.

**Material and methods.** In this study, 6 teeth (4 molars and 2 premolars) with approximal caries were divided into 2 groups. One group, consisting of 2 molars and 1 premolar, was treated with dental composite of low viscosity (Tetric N-ceram, Ivoclar) using “layered” technique. Another group was treated with bulk-fill composite of high viscosity (SDR, Dentsply) using “injection molding” technique. Total treatment time and approximal wall restoring was measured for every tooth of both groups. Post-op radiographs were taken.

**Results.** Due to increased polymerization depth of SDR composite (4 mm), fewer steps are required for core build up. As a result, total treatment time decreased on average by 4 minutes 50 seconds, along with wall restoring time decrease on average by 7 minutes 15 seconds, using “injection molding” technique. Post-op radiographs showed the presence of bubble in 1 tooth, restored by “layered” technique.

**Conclusion.** The “injection molding” technique requires fewer steps, less time, and reduces the possibility of further complication such as bubbles.

**Key words:** approximal caries, interdental contacts

#### **342. PARTICULARITIES OF MEDIUM CARIES TREATMENT. MATERIALS AND TECHNIQUES OF TREATMENT**

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**Introduction.** Dental caries (tooth decay) is an infectious and transmissible disease, which produces changes through demineralization in the mineral content of hard mineral tissues and which, under certain conditions, has the capacity to recur as well as to recover through demineralization processes. It is characterized by the demineralization of the inorganic part of the enamel, the destruction of its organic matrix and the softening of the hard dental tissues, with the subsequent cavity defect formation. The relevance of this topic is determined by the increasing incidence of dental caries, its severity, as well as local and general complications produced by dental caries. Also, the changes in tissues determine the type of material, the treatment methods used, and the attitude of the dentist in establishing the diagnosis and treatment plan.

**Aim of the study.** To study the particularities of medium dental caries manifestation and to select the appropriate filling materials and techniques.

**Materials and methods.** The study lot comprised 10 patients, of which 3 women and 7 men, aged 18-35 years, who were subjected to examination and treatment. After the examination, the diagnosis of chronic medium caries was established, the process being located on the occlusal

and proximal surfaces. In 4 cases, caries Class II was found (according to the Black classification) and in 6 cases - Class I was determined, respectively. To ensure an effective treatment, Seek&Sable Seek Caries Indicator - Ultradent caries detector was used to highlight the hidden areas affected by caries. It was also used Calcimol lc - base liner. As a treatment method, the layered filling technique was used.

**Results.** According to the study, the efficiency of the treatment was 99.99%, the results being kept until now. Due to the filling material used for the final filling of dental caries - Gradia direct, both the tooth function and aesthetics were restored.

**Conclusions.** The use of caries detector greatly facilitates the preparation of the carious cavity ensuring total removal of the altered dentin.

**Key words:** dental caries, carious cavity, layered filling technique

### **343. CONTEMPORARY CLINICAL AND TECHNOLOGICAL ASPECTS OF THE METAL CARCASSES OF FIXED DENTURES**

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**Introduction.** The development of technology forces us to analyze the manufacturing techniques we use daily. Thus, classical manufacturing techniques are increasingly being replaced by automated production systems that optimize the quality and accuracy of finished work. Initially, the casting technique was based on gold alloys, which were replaced by alloys such as nickel-chromium (Ni-Cr) and cobalt-chromium (Co-Cr). In the last decade, new manufacturing processes using computer-aided design / computer-aided manufacturing (CAD / CAM) are becoming increasingly important for producing biomedical devices and dental prostheses. Co-Cr alloy dental carcasses can be manufactured using two technologies based on CAD / CAM processing: substrate manufacturing and addition manufacturing.

**Aim of the study.** Comparative evaluation of contemporary technological processes in order to optimize the use of fixed dental prosthesis with metal casing.

**Materials and methods.** The present work is based on the results of the complex clinical, paraclinical and prosthetic treatment with fixed works of 10 patients (6 m., 4 w.) and the analysis of the ambulatory files of 50 patients (32 m., 18 w.) with the age between 35 and 65 years, with different types of edentation. Selection of patients included: patients with severe systemic disease, patients with dental injuries coronary patients with fixed dentures, partial edentation patients with different classes according to Kennedy of maxilla and mandible, patients with financial means. In order to study comparatively different metal carcass manufacturing technologies, a Geller study model was developed, the metal mobilizable bin being standard. On this metallic shroud the metal carcass was made by three techniques (casting, milling and SLM). The obtained metal carcasses have been scanned and studied electronically in order to obtain objective data on the comparative accuracy of metallic constructions.

**Results.** According to the data obtained at the end of the study it was found that following scanning and electronic measurements, we obtained the following data: the size of the standard bin V-O 8,435 mm M-D 6,752 mm. Metal frames were made and the internal part measured by casting method the V-O 8,545mm M-D 6,944mm; by SLM printing method V-O 8,305 mm M-D 6,702 mm; by milling method V-O 8,438 mm M-D 6,748 mm.

**Conclusions.** Following the study and obtaining the electronic measurements of all Co-Cr alloy metal carcasses in order to make the fixed works by various manufacturing techniques (casting, milling and SLM) it was proved that all the techniques fall within the clinically acceptable range

(<120 µm). The automated metal carcassing system is more precise than the classic technique, which motivate us to switch to automated dental prostheses.

**Key words:** SLM, milling, casting

#### **344. SEPTICEMIA AS A COMPLICATION OF DIFFUSE PHLEGMON OF THE MOUTH FLOOR**

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**Introduction.** Despite all the steps made in recent decades in the knowledge of pathogenesis, in improving diagnosis and therapy of septicemia, this disease, regardless of the age at which it occurs, is a complex medical problem. We need a multidisciplinary team to solve it, which besides the infectious disease doctor, microbiologist, biochemist, and radiologist, often requires specialists in intensive surgery and surgeons of various profiles. Bacteriology of septic shock records: Gram-negative germs 50-60%, Gram-positive germs 6-24%.

**Aim of the study.** The assessment of clinical and paraclinical picture in patients with phlegmon of the mouth floor, complicated with sepsis.

**Materials and methods.** Analysis of 50 patients who suffered from phlegmon of the mouth floor, who were hospitalized in the Oral and Maxillo-facial Surgery department of IMSP IMU Chisinau between the 2016 and 2017 years. Patients were clinically and paraclinically investigated. Literature analysis of 17 articles, 5 PhD thesis, 3 books.

**Results.** 6 % of all patients examined with phlegmon of the mouth floor were diagnosed with sepsis. Approximately two patients diagnosed with oral phlegmon and complications of this disease die each year in the Republic of Moldova, which accounts for approximately 7% of all patients with this diagnosis. The untreated septic shock lasts for several hours to 1-2 days, with a fatal outcome in 30-60% of cases. According to M. Baş, septicemia occurs in people with a reasonable defense capacity, which is strong enough to fight, develop a local and general inflammatory process, but insufficient to stop the infection from the beginning. In people with collapsed defense, the clinical picture of septicemia is not developed, the infection leads to septic shock violently.

**Conclusions.** 1. There is an imbalance between pro-inflammatory vs anti-inflammatory, coagulation vs. anti-coagulation, oxidative vs anti-oxidative, apoptotic vs. anti-apoptotic systems in patients with severe sepsis. 2. Signs and general symptoms of sepsis are fever higher than 38.3 degrees Celsius; hypothermia lower than 36 degrees Celsius; heart rate higher than 90 beats/minute; tachypnea, hyperglycemia 7.7 mmol/l. 3. The cause of over 90% of the deaths of patients with inflammatory processes in the Oral and Maxillo-facial department is the septic shock resulting in polyorganic insufficiency.

**Key words:** phlegmon, septicemia, oral and maxillo-facial surgery

#### **345. PLATELET-RICH PLASMA UTILIZATION IN DENTAL AND ORAL SURGERY**

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**Introduction.** Indications for the use of platelet-rich plasma (PRP) in modern medicine are expanding every year, thanks to the high success of this technology. This article provides answers to questions: the essence of the method and its safety.

**Aim of the study.** To analyze the efficacy of using platelet-enriched plasma in surgical treatment (sinus lifting, dental extraction, implantology), as well as in the treatment of the diseases associated to periodontal tissues (gingivitis, periodontitis) of the oral cavity.

**Material and methods.** In accordance with the proposed purpose and objectives, we analyzed medical records and photographic data base of 20 patients and the sulcus bleeding index (SBI) before and after the treatment, this way we demonstrated the ability of healing and tissues regenerations. The method represents application the injection form of plasma which is obtained from the patients own blood and containing platelets which is accomplished by centrifugation using tubes and the separation gel. They contain growth factors which affect conjunctive, osseous and epithelial tissues and initiate their regeneration also they stimulate the formation and activation of fibroblasts producing collagen, hyaluronic acid and elastin, synthesizing a young tissue that normalizes tissue respiration and balances metabolic processes.

**Results.** At the end of the study with the two groups of patients, we determined the reduction of the papillary bleeding index (SBI) after the complex treatment of platelet-rich-plasma (PRP) by MeaPlasma method, for the patients who have been treated with an implant treatment and for patients with diseases of periodontal tissues.

**Conclusions.** Activating all components of natural regeneration processes, platelet-rich plasma represents a convenient and safe biological remedy that accelerates regenerative processes and for improvement of hygienic and periodontal indices, reduction of gingival bleeding, edema, reduction of dental mobility, normalization of gingival shape and color.

**Key words:** platelet-rich plasma (PRP), platelet , growth factors , injection method , stimulation of regeneration processes

### **346. EFFECT OF DECOMPRESSION USING CAD/CAM TECHNOLOGY VS. ANALOGUE METHODS FOR PATIENTS WITH VARIOUS JAW CYSTS**

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**Introduction.** Various odontogenic and nonodontogenic cysts can occur either in the upper or lower jaw, these entities are an important chapter of the oral and maxillo-facial pathology. Treatment methods for cystic lesions depends on the size, location, patient age, as well as proximity to vital structures such as teeth, inferior alveolar canal, and maxillary sinus. Radical treatment may be associated with numerous complications, such as facial deformity, missing teeth, infection of bone graft, and numbness if during surgery the nerve is harmed. Conservative treatment, such as decompression is recommended in case of large cysts or when it contains vital structures.

**Aim of the study.** The aim of this study is to assess the effectiveness of decompression using the CAD/CAM technology in comparison to traditional analogue methods by measuring cystic lesion volume changes using computed tomography.

**Materials and methods.** This study was axed on 4 patients, 2 of them had undergone traditional decompression for a cystic lesion of the jaw at the Department of Oral and Maxillofacial Surgery, and in 2 cases a CAD/CAM decompression device was fabricated at the SRL. „OMNI DENT”, study was conducted between 2015 and 2017. CT scans were taken in all patients before and after decompression at 3 and 6 months. Each scan was analyzed to evaluate the volume



changes of cystic lesions to determine the time of enucleation, by using the threshold method, each cyst was virtually segmented.

**Results.** In all 4 cases semi-automatic virtual segmentation of the cystic lesion, was performed. The duration of decompression ranged from 6 to 24 months. The reduction rates of cystic lesions in analogue group ranged from 39,64% to 87,23% with a mean of 63,43%, and in CAD/CAM group ranged from 60,47% to 98,32% with a mean of 79,39%.

**Conclusions.** Even though traditional analogue methods have shown good results in reduction rates of cystic lesions, CAD/CAM is a subject of significant interest in the last years, which had shown promising results. The main advantages include the possibility to obtain a patient specific implant with increased precision which is less invasive with fewer surgical procedures, but further studies are necessary in order to confirm this statement.

**Key words:** cyst, decompression, CAD/CAM technology

### **347. CHRONIC GANGRENOUS PULPITIS. METHODS OF DIAGNOSIS AND TREATMENT**

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**Introduction.** Gangrenous pulpitis is characterized by septic modifications of the dental pulp and its decomposition under the action of aerobic and anaerobic germs that strictly involve the teeth and apical periodontium. The fermentative decomposition of proteins in dentinal canals and the organic substance in the tooth structure causes a decreased tooth resistance. Pulp gangrene can be an infection focus for the whole organism. It is therefore necessary to remove the infection focus in time, endodontically and effectively. The effectiveness of endodontic treatment depends on several factors: biomechanical preparation, irrigation, medicated dressings, endodontic space sealing and restoration of the anatomical shape of the dental crown.

**Aim of the study.** To study the etiology, pathogenesis and clinical evolution of chronic gangrenous pulpitis and the optimal treatment methods.

**Materials and methods.** A group of eight patients (3 women and 5 males) aged 25-50 years, were subjected to complex examination and endodontic treatment, being diagnosed with chronic gangrenous pulpitis. To increase the treatment efficacy, APEXDENT preparation was used, being applied on temporary dressings. It has an effect of inducing the formation of calcified tissue, antimicrobial action, decomposition and elimination of necrotic material and its discharge from the root canal. In the treatment we have applied modern technologies of permeabilization, sterilization and filling of the root canals.

**Results.** Of the 8 patients treated endodontically, only 2 relapsed. The study confirms that APEXDENT preparation corresponds to 75% of its properties and is effective in the treatment of chronic gangrenous pulpitis.

**Conclusion.** Temporary application of APEXDENT paste in the root canal resulted in a good sterilization of the root canals. Most importantly, the obtained results allowed us to use APEXDENT paste in the treatment of chronic gangrenous pulpitis.

**Key words:** pulp, pulp gangrene, infection focus, endodontic treatment

### **348. CHRONIC APICAL PERIODONTITIS. METHODS OF CONSERVATIVE AND SURGICAL TREATMENT**

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**Introduction.** One of the priority issues of contemporary dental therapy is chronic apical periodontitis. This disease presents an inflammatory reaction of the periapical tissues and mass destruction with the bone tissue resorption in the root apex region. Despite the fact that endodontic treatment is performed with a perfect sterilization of the root canal system, there are cases when surgical treatment is indicated - with the resection of the affected root apex.

**Aim of the study.** To determine the effectiveness of calcium hydroxide preparations in the regeneration of periapical tissues as well as the role of surgical treatment of teeth that do not respond to endodontic treatment.

**Materials and methods.** The study included 12 patients who were clinically and paraclinically examined. The root canal therapy was performed using calcium hydroxide preparation Metopex. Following the root canal treatment, 2 of the 12 cases with clinical forms were not managed therapeutically, being subjected to surgical treatment.

**Results.** The use of endodontic curative material contributed to the pathogenic flora destruction in the root canal system. In cases where the pathological process was not stopped using the curative material, surgical treatment was performed.

**Conclusion.** The clinical trial highlighted the favorable treatment with calcium hydroxide curative materials, but there are cases when the treatment can not be stopped and the surgical treatment is used.

**Key words:** periodontal diseases, root canal system, curative treatment, apical resection

#### 349. DIAGNOSTIC AND TREATMENT ERRORS IN DENTAL CARIES

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**Introduction.** Dental caries is a common disease of dental hard tissues and is a major problem among the population. The dental caries errors occur quite frequently, and being not treated in time they can lead to severe complications. Their late detection implies the implementation of contemporary diagnostic methods and the choice of an appropriate treatment tactics.

**Aim of the study.** To assess scientific literature with reference to possible errors in the diagnosis and treatment of dental caries.

**Materials and methods.** There were selected and analyzed the clinical cases and X-rays of 25 patients aged 20-50 years, who received dental care at University Clinic of Nicolae Testemitanu State University of Medicine and Pharmacy, in Chisinau. The patients enrolled in the study were subjected to clinical investigations to make the right diagnosis prior to the treatment in order to determine the condition of the dental hard tissues, and to evaluate the treatment performed by the dentist after the investigations.

**Results.** According to the studied cases, it was found that although the level of dental care is relatively high, with the implementation of multiple modern treatment technologies, in some cases there are a number of errors in the doctors` tactics, resulting in severe complications.

**Conclusion.** The study determined that the most common errors were found during the diagnosis, being followed by the errors in preparation and filling methods.

**Key words:** dental caries, errors, complication.

#### 350. LATERAL SINUS LIFTING: POSTOPERATIVE REABILITATION OPTIONS

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**Introduction.** Complete or partial maxillary posterior edentulism is frequently encountered in dentistry. These conditions occur 35 times more frequently than complete mandibular edentulism opposing maxillary teeth. Functional and aesthetic rehabilitation following tooth loss in the posterior maxilla necessitating dental implant placement and implant-supported reconstructions are widely accepted and well established in reconstructive dentistry.

**Aim of the study.** Optimization of implant-prosthetic rehabilitation of patients with severely atrophic posterior edentulous regions of maxilla by elaborating minimal invasive procedures of endosseous dental implant placement.

**Materials and methods.** Were examined 2 patients with severely atrophic posterior edentulous regions of maxilla. The common complaints include difficulty during mastication, esthetic and phonetic disorders. The clinical examination revealed the lack of teeth in the lateral areas of the maxilla. The para-clinical examination was performed, including: panoramic radiographs and CT scans, general and biochemical analysis of blood. Patients were treated using sinus grafting procedure by lateral access with simultaneous implant placement.

**Results.** Creation of a new concept for protection of physiological reparatory forces in order to facilitate the osseointegration process of implants.

**Conclusions.** Sinus augmentation surgery with simultaneous implant placement is a predictable procedure that enables implant-prosthetic rehabilitation of the edentulous atrophic posterior maxilla with a very high implant survival rate.

**Key words:** lateral sinus lifting, augmentation, implant

### **351. MEDICAL CASE REPORT ABOUT THE GOLDEN NUMBER IMPACT ON FACIAL AESTHETIC PROPORTIONS**

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**Introduction.** Pi, the golden number, the embodiment of the concealed key of the Universe, has been influencing architecture, painting, sculpture, music and nature since time immemorial. Amongst its many applications, the golden number has had the greatest impact on the harmony of the human body, particularly to Dento-Maxillary Device.

**Aim of the study.** To enunciate the importance of the golden ratio in dental aesthetic and the necessity of keeping the Divine Proportion when undertaking dental treatments.

**Material and methods.** The study involved 71 patients from different ages, which were checked with a golden compass, taking measurements to establish in what respect the noncompliance to the golden proportion affects the patients' physiognomy.

**Results.** The results indicated that the patients showing a noncompliance to the golden dental proportion also display variations of facial features and physiognomy.

**Conclusions.** According to the study, it was noticed that respecting the golden proportion in the size and arrangement of the teeth, especially the upper frontal teeth, has a great effect on the outside perception of their smile and their pleasant look.

**Key words:** Pi, golden proportion, facial aesthetics

## PHARMACY

### DEPARTMENT OF PHARMACOLOGY AND CLINICAL PHARMACY

#### 352. THE PHARMACOTHERAPEUTIC ASPECTS OF METABOLIC DISEASE CAUSED BY HYPERTENSION

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**Introduction.** Among cardiovascular diseases with an important impact on the general population, hypertension (HTA) is also found. Considering the association of HTA with risk factors such as diabetes and the level of impact on public health spending, the European Society of Hypertension has developed a guide to the evaluation and treatment of hypertension and associated diseases. Starting from the idea that atherosclerosis is the most common cause of hypertension and that at the base of the pathophysiology of atherosclerosis is the dyslipidemic process, and following dietary habits with excess fat and often consumption excess alcohol, accompanied by smoke and lesser movement and all of these are spreading to younger age, we have given greater interest to these findings.

**Aim of the study.** To identify the risk factors and their influence on hypertension in a group of 100 patients over the two years.

**Materials and methods.** The work was based on the random incorporation of displaced patients from the Public Health Care Institution Institute of Cardiology from Chisinau after the screening of more than 200 clinical observation sheets.

**Results.** We calculated the mean value of cholesterol, LDL-C, HDL-C, triglycerides and each of these were reported based on glucose, blood pressure, body mass index, smokers, personal history of early cardiopathy, and their dispersion according to the age in order to be able to capture the maximum incidence and to appreciate the extent to which new behavioral movements (increased smoking among women) have a consequence, and depending on the background of the sick, knowing that in rural areas the diet is richer in animal fat, but physical effort is more engaging, while in urban areas food often becomes hypercaloric compared to the lower level of exercise. We compared dynamically, the evolution of clinical symptoms, the value of laboratory and imaging results, and the relation to smoking, respectively the body mass index, as well as the measurement of their results in the number of coronary events.

**Conclusion.** Metabolic syndrome includes symptoms related to a hyperactivity of the sympathetic system, with hypertension being the most important of these disorders, but also obesity, insulin resistance, glucose intolerance, and blood lipid abnormalities. According to the analysis of predisposing factors in the occurrence of metabolic syndrome-induced HTA, dyslipidemia was the most common risk factor (87,6%), obesity was 66%, smoking at 58,0%, and hyperglycemia at 51,6%. Basic treatment includes inhibitors of the angiotensin converting enzyme,  $\beta$ -blockers, angiotensin receptor blockers (sartans), antidiabetic agents, platelet antiaggregants and hypolipemics.

**Key words:** hypertension, diabetes, metabolic syndrome, dyslipidemia

#### 353. PHARMACOEPIDEMIOLOGICAL ASPECTS FOR HIV INFECTED PATIENT

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**Introduction.** HIV produces a chronic, progressive and irreversible infection, altering the host defense mechanisms, installing AIDS and opportunistic infections, with invariable progression to death, in absence of treatment. HIV infection rapidly affects young and fertile people, who are receptive to injectable drugs use, and practicing unprotected sexual intercourse that favors the spread of the epidemic. AIDS is a global epidemic with about 40 million infected people. Twenty million people have died since the early 1980s because of AIDS-related complications. Every ten seconds, in the world, a person dies of AIDS. According to WHO, the most common cause of women's mortality worldwide is AIDS. 50% of newly infected people are aged between 15 and 25 years. At the end of 2016, 11.043 HIV-infected were registered in Moldova, and during the first nine months of 2017, 614 patients were newly diagnosed. The estimated number of all bearers is about 15 thousand citizens of Moldova.

**Case report.** Patient M., 31 years, driver, was hospitalized with the diagnosis of HIV and many coinfections: chronic viral hepatitis B, toxic hepatitis, ascites, chronic pancreatitis, and chronic cholecystitis. Clinical picture: general weakness, periodic pronounced pain in the right side of abdomen, loss of appetite, nausea, and asthenia. Period of hospitalization: 27 days. The diagnosis was confirmed in 2009, the route of infection was sexual, but the patient also used injectable drugs. During the hospitalization he received antiretroviral treatment: Darunavir 600 mg once a day, Ritonavir 600 mg twice a day, Tenofovir + Lamivudine 1x1, and symptomatic: Mezymb, Verospiron, Panangin, Furosemide, Hepasol, Sorbilact, Infusol, Hemodez, Lipesol, Arginine. The patient was discharged with the recommendation to be under the supervision of the infectious disease doctor, and to continue the antiretroviral and symptomatic treatment, repeated control over 3 months.

**Conclusions.** HIV / AIDS is a chronic, lifelong disease without known healing, and infected people have to be medically monitored for the rest of their lives. Antiretroviral therapy aims to prolong lifetime duration and improve the quality of life of patients.

**Key words:** HIV, coinfections, antiretroviral treatment, symptomatic treatment

## DEPARTMENT OF PHARMACEUTICAL AND TOXICOLOGICAL CHEMISTRY

### 354. EVALUATION OF COMBINED PHARMACEUTICAL MEDICINES USED IN HYPOPOTASSEMIA

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**Introduction.** The fixed dose combined pharmaceutical medicine represent an association of two or more drug substances, using in several branches, including the hypopotassemia treatment (potassium concentration in the blood plasma is below 3.5 mmol/l). For example: Panangin, Asparcam, Antikircel. The single-component therapy with potassium chloride, potassium iodide or other potassium salts ensures the essential pharmaco-therapeutic in up to 50% of the medical treatment cases, therefore it is less effective, than using of combined pharmaceutical medicine, that shows better results in hypopotassemia. In particular, those combinations of pharmaceutical substances are plausible which achieve not only the removal of the hypopotassemia symptoms (cramps, cardiac arrhythmias), but also the causal treatment.

**Aim of the study.** Evaluation of the combined pharmaceutical products market used in hypopotassemia in the Republic of Moldova (RM).

**Materials and methods.** The analysis of the pharmaceutical market of RM, the study of the State Nomenclature of Medicines.

**Results.** As a result of the detailed analysis of the pharmaceutical market in the RM it was determined that the basic producters of the combined medicines, using in the treatment of hypopotassemia, are Romania - 42%, Ukraine - 21%, Russia - 17%, Germany - 9%, US - 6 %, Hungary - 5%. Unfortunately, the monocomponent potassium medicines predominate (70%) on the pharmaceutical market of the RM, which provides only a daily dose of this electrolyte. There is not any native combined medicine in RM. Basing on this fact, it is proposed to elaborate a new combined pharmaceutical product containing potassium aspartate, magnesium aspartate, potassium orotate and spironolactone, which will be able to ensure adequate causal treatment in hypopotassemia due to stopping of the potassium losses (renal or extrarenal) and regulation of metabolic disorders, which generates the normalization of potassium potential in cells.

**Conclusions.** The actuality and usefulness have demonstrated the necessary of the research initiating to elaborate the native combined pharmaceutical product, which would be accessible, effective, convenient and low in toxicity

**Key words:** hypopotassemia, combined product, pharmaceutical market

## DEPARTMENT OF DRUGS TECHNOLOGY

### 355. PREPARATION OF SUPPOSITORIES WITH PROPOLIS EXTRACT

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**Introduction.** Propolis is known as one of natural products with multiple therapeutic effects, such as: antimicrobial, antibiotic, anti-inflammatory, analgesic, antioxidant, antifungal and anti-tumor. This apiculture product has a very complex composition, consisting of the following groups of active principles: phenols, flavonoids, amino acids, volatile oils, steroids, minerals, etc. The development of pharmaceutical forms with propolis extract is a very actual problem.

**Aim of the study.** Technology development and standardization of suppositories with soft propolis extract.

**Materials and methods.** Analysis of State Nomenclature of drugs of the Republic of Moldova. Use of hand rolling and molding methods and different excipients to prepare suppositories with propolis extract.

**Results.** The analysis of State Nomenclature of drugs of the Republic of Moldova denotes a very low content of preparations with soft extract of propolis. Most of the suppositories have anti-inflammatory action (25%); followed by analgesic-antipyretic (15%); immunomodulators (14%), etc.

Suppositories with soft propolis extract were formulated in the compounding department of Vasile Procopisin Pharmaceutical University Center. The excipients used were cocoa butter, PEG 4000:400 (9:1) and PEG 4000:1500:400 (6:3:1). The performed quality tests on appearance, melting rate, dissolution rate and uniformity of mass met the quality standards required by European Pharmacopoeia.

**Conclusions.** The technology of preparation of suppositories with soft propolis extract by two methods, using different excipients was elaborated and quality assessment was performed. The results of the research will allow the introduction of suppositories with soft propolis extract in assortment of Vasile Procopisin Pharmaceutical University Center as elaborations.

**Key words:** propolis, suppositories, extract

### 356. NANOCARRIERS IN COSMETIC TECHNOLOGY

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**Introduction.** It is always known that a beautiful skin is a cared skin. For this reason, the cosmetic products used for effective skin care have enjoyed a constant popularity. Nanotechnologies are often used for the development of new-generation cosmetics. A nanocarrier commonly found in modern cosmetics technology is liposome. It gives to the product some additional benefits that are not found in common products. Hyaluronic acid is a leader substance in plastic surgery and anti-aging products. It has many advantages for the skin, including the guarantee the strength, elasticity and tonus of the skin; protection and hydration of skin tissues etc. We suppose that a product that contains liposomal hyaluronic acid would be more effective than a traditional product.

**Aim of the study.** The study of applicability of liposomes in the formulation of cosmetics. Internal market research and study of population accessibility to cosmetic products containing liposomes. Elaboration of a cream containing liposomal hyaluronic acid.

**Materials and methods.** The market study of cosmetic products containing liposomes was carried out. It was elaborated the formula of the cream containing liposomal hyaluronic acid.

**Results.** The literature demonstrates several advantages of cosmetic products containing liposomes: a high degree of penetration, a more uniform distribution of the biologically active principles in the skin tissues and a high capacity retention of the active principle in biological tissue. Market research has elucidated a low presence of cosmetic products containing liposomes on market in the Republic of Moldova. This trend is found both in case of imported products (under 1%) as well as for those native (zero %). For the formulation of the cream containing liposomal hyaluronic acid has been taken into consideration role and nature of excipients as well as the method of incorporation of the active substance in nano-systems.

**Conclusions.** It is possible to develop a cream containing liposomal hyaluronic acid and placing it in market of the Republic of Moldova, such a product will be a welcomed novelty and also in line with the new trends in the field of cosmetology.

**Key words:** liposomes, moisturizer, hyaluronic acid

### 357. ANALYSIS OF NANO DRUGS

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**Introduction.** The properties of drug substances incorporated into nano-systems are often due not only to the properties of the substance but also to the nano-systems of which they are part. For this reason, the assessment of the quality of a nano drug requires a more complex check, which involves checking the structure of the nanoparticle. In particular, a rigorous control of their size is indispensable to ensure the improvement of the pharmacokinetic and pharmacodynamic behavior of the active substances. To meet these requirements, nano-drug analysis methods are supposed to be applied.

**Aim of the study.** Study of nano-drug analysis methods.

**Materials and methods.** The review of scientific literature on nanomedicine analysis methods has been performed.

**Results.** Information from literature demonstrates a number of advantages of using nano-drugs. The transport of the drug is directly to the biological target, bypassing the adverse effects and

maximizing the therapeutic effect. For a uniform distribution of dispersion sizes it is useful to use the calibration technique. An important reason is that nano-size offers a number of advantages such as: significant increase in total particle size, increased solubility, bioavailability and drug dose reduction.

**Conclusions.** The progress of nanotechnologies and the development of different types of nanoparticles offer new opportunities and challenges for medicine and pharmacy.

So the traditional methods of existing analysis that are applied in this area are not enough when it comes to nanomedicines. However, fortunately, technological progress has brought new, more sophisticated analysis technologies that open up new opportunities in nanomedicine research.

**Key words:** nano-drugs, analysis, nanotechnology

### 358. LIPOSOME FORMULATIONS' METHODS OF ANALYSIS

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**Introduction.** The pharmaceutical nanotechnologies represent one of the most progressive and promising branches of pharmaceutical technology. They permit the modification and directing of the properties of active substances without the modification of chemical structure. For the new nano-drug formulations, exists the need of implementation of new methods of analysis that will take into account not only the chemical structure of the substance, but also the macro-molecular formulation and its parameters.

**Aim of the study.** The aim of the study was the literature review of the existing methods for the analysis of liposome formulation and their application to a specific formulation with antibiotic substance.

**Materials and methods.** A literature review of existing methods of analysis of liposomes was performed. The methods of analysis were classified in classes, depending of the studied formulation parameter. If possible, the method was applied for the study of the parameters of the formulated liposomes with antibacterial substances.

**Results.** In order to establish the existing methods of analysis of for liposomes, a study review of 94 literature references was performed (basically from PubMed and Medline library). The methods of analysis were classified in 3 classes: optical, chemical and physico-chemical methods. Using some of these methods, that were applicable to our study object, the parameters of a prepared liposomic formulation were established. The methods were tested for linearity, repeatability and reproducibility.

**Conclusions.** The results have shown that a part of classical methods for analysis of a liposomic formulation sometimes are not enough to describe the studied preparation and to predict its efficiency. Also, different liposomic formulations have demonstrated different results at the application of the same method of analysis. This fact demonstrates the need of elaboration of specific technics of analysis for each individual liposomic formulation.

**Key words:** liposome, methods of analysis

### DEPARTMENT OF PHARMACOGNOSY AND PHARMACEUTICAL BOTANY.

#### 359. SPECIES SOLIDAGO CANADENSIS L. AS INVASIVE PLANT

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**Introduction.** Invasive plant species represent major threats to the conservation of ecosystems worldwide and have major impacts on economics. Due to their rapid rate of spread in plant communities and their ability to replace native vegetation, invasive species have been reported to directly alter landscape structure, biodiversity functioning and composition. Nowadays, with increasing globalization, plants species are currently being introduced to novel ecosystems at an unprecedented rate.

**Aim of the study.** The analysis of sp. *Solidago canadensis* L. as invasive plant in Europe and its threats to the local native flora of the Republic of Moldova.

**Materials and methods.** The bibliographic complex study of the issue including a database of scientific references.

**Results.** Goldenrod species native to North America are among the exceptionally successful worldwide invaders. Focus of this study is sp. *S. canadensis* L. (Canada goldenrod), which was introduced to Europe from North America as a garden ornamental in the 17th century, today being widely distributed across the whole European continent. Canada goldenrod invades a wide range of habitats: semidry grasslands, lowlands, abandoned fields, roadsides and pastures. In the introduced areas, sp. *S. canadensis* L. promotes monocultures due to its fast growth rate, prolific reproduction as well as strong allelopathic effects on native species. In the Republic of Moldova, sp. *S. canadensis* L. is included in the uncultivated synanthropic flora, being specific for degraded ecosystems and rural areas, particularly in ruderal and human-created habitats, also being cultivated as an ornamental plant.

**Conclusions.** Canada goldenrod is widely recognized as one of the most widespread invasive species in Europe, nevertheless there is a little knowledge on its distribution and threat invasion for the local flora of the Republic of Moldova. In these circumstances, understanding the distribution of invasive sp. *S. canadensis* L. is important for nature bioconservation and management.

**Key words.:** *Solidago canadensis* L., invasive plants, biodiversity

### 360. THE ROLE OF MINERALS IN THE METABOLISM OF SPORTSMEN

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**Introduction.** Mineral salts, similar to proteins, carbohydrates, fats and vitamins are indispensable to the human body. The human body can not "manufacture" mineral salts, they are received daily through diet. The food as a source of minerals is very important for body health.

**Materials and methods.** The profile literature and database was evaluated.

**Results.** Minerals have the ability to maintain cell membrane stability, osmotic balance, and enzyme catalysts. The body loses minerals through urine, feces, sweating daily. In the sportsmen, during physical effort, much of the minerals are eliminated more by sweating. That is why they require a daily intake of minerals much higher than sedentary and passive people. Ca is important for nerve and muscle cells, stimulates the release of acetylcholine, allows muscle contraction (in the absence total decontraction is impossible, resulting in uncontrollable muscle spasms and cramps). Ca activates vital enzymes and increases the permeability of cell membranes. For optimal Ca assimilation, Mg and P are required in a well-defined proportion. Mg activates enzymes, plays a role in the conversion of ATP into muscle. Contrary to Ca, Mg stops decreasing of skeletal muscle excitability limit. K is found in intracellular fluids and maintains osmotic balance, engages in muscle and liver glycogen formation. K acts the transmission of nerve impulses and the onset of muscle contraction. Zn participates in basic

metabolism, cell growth, digestion, testosterone production. Cu is involved in the transport of oxygen, promotes the resorption of Fe through intestine, and indirectly participates in the production of hemoglobin and myoglobin in muscle. The natural sources of minerals are: Mg – pumpkin seeds, spinach, dried plums, beans; K – dried apricots and plums, beans, baked potatoes, spinach, mushrooms; Zn – sprout wheat, pumpkin and sesame seeds, chickpea; Cu – sesame, sunflower seeds, walnuts; Fe – cereals, spirulina, plums, lentils, peanuts, spinach; P – nuts, algae, beans.

**Conclusions.** People who practice sports must use balanced natural sources of minerals daily.

**Key words:** sportsmen, minerals, role, natural sources

### **361. THE ORNAMENTAL PLANTS THROUGH THE LIGHT OF THE ACTIVE PRINCIPLES**

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**Introduction.** The ornamental plants are wide-spread due to their beauty, usually considered to be without any value than decorative one, but there are some of them that also possess spicy (thyme), aromatic (lavender) or food properties (rosemary, basil), not to forget about their therapeutic qualities and toxicity. At first sight, the decorative plants are very harmless with a pleasant smell and look, but their varied chemical composition and therapeutic spectrum does not exclude their toxic potential.

**Aim of the study.** The selection of ornamental plants with therapeutic potential through the light of the chemical compounds and usage in medicine.

**Materials and methods.** Analysis of bibliographical data concerning the selected decorative plants used in office or house, their therapeutic and poisonous properties according to the chemical compounds.

**Results.** The research of chemical composition of these plants showed that the most important substances which they contain are: alkaloids (*Aphelandra squarrosa*, *Scindapsus aureus*, *Acalypha hispida*, *Dieffenbachia maculata*); volatile oils (*Hedera helix*, *Coleus forskohlii*), tannins (*Spathiphyllum cochlearispathum*, *Abutilon pictum*, *Ficus elastica*); flavonoids (*Anthurium andraeanum*, *Colocasia esculenta*); saponosides (*Dizygotheca kerchoveana*, *Fatsia japonica*, *Schefflera actinophylla*) and calcium oxalate (*Philodendron verrucosum*, *Syngonium podophyllum*).

**Conclusions.** Choosing of ornamental plant is an extremely important decision. Besides their beauty, the decorative plants can have both beneficial and negative effects on the state of the human body. It is necessary to know what effects can have the plants which share with us the same air and space everyday, in order to prevent possible damage to our health.

**Key words:** ornamental plants, chemical compounds

### **362. DIETARY FIBERS: EFFECTS ON HUMAN HEALTH**

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**Introduction.** The simple term of dietary fibre originating with Hipsley (1953), but the most consistent definition is: non-digestible carbohydrates and lignin, functional fibers consisting of

isolated, non-digestible carbohydrates which have beneficial effects in humans and total fibre as the sum of dietary and functional fibers.

**Materials and methods.** The profile literature and database were evaluated and analyzed.

**Results.** Nowadays there are several classification systems of dietary fibers based on: role in the plant, type of polysaccharide, their simulated gastrointestinal solubility, products of digestion and physiological indicators. The accepted classifications are based on their solubility in a buffer at a defined pH, and/or their fermentability in an in vitro system. There are 2 groups of dietary fibers: water-insoluble/less fermented (cellulose, hemicellulose, lignin) and the water-soluble/well fermented fibers (pectin, gums, mucilages). Functions of dietary fibers in human body: add bulk to the diet; making feel full faster; attract water and turns to gel during digestion, trapping carbohydrates and slowing absorption of glucose; lower total and LDL cholesterol; regulate blood pressure; speed the passage of foods; add bulk to stool; balance intestinal pH and stimulate intestinal fermentation production of short-chain fatty acids. The benefits of dietary fibers on human health: may reduce appetite; lower variance in blood sugar levels; reduce risk of heart disease; reduce symptoms of metabolic syndrome and diabetes; reduce risk of colorectal cancers; alleviate constipation. The importance of food fibers has led to the development of a large market for fiber-rich products, there is a trend to find new sources of dietary for foods. Fiber supplementation of foods can change their consistency, texture, and sensory of the end products, can offer new opportunities in food industry.

**Conclusions.** Dietary fiber can be used in various functional foods. Influence of different processing treatments (like extrusion-cooking, canning, grinding, boiling, frying) alters their properties and improves their functionality.

**Key words:** dietary fibers, classification, function, benefits

### 363. MEDICINAL PLANTS AND PHYTODRUGS USED IN GASTROINTESTINAL TRACT DISORDERS

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**Introduction.** The digestive system is a morphological and functional ensemble of organs which is responsible not only for the digestion and absorption of the ingested food, but also for the evacuation of unassimilable residues. Diseases of the digestive tract can occur to any person, regardless of gender, age or social class and represent a problem both in the medical and socio-economic fields. In the R. Moldova, 8,8% of deaths are caused by the diseases of the digestive tract. The districts in the central area of the R. Moldova are the most affected by pathologies of the gastrointestinal tract, correlated with the quality of water and soil (salts, pesticide content). Today, there are many natural remedies that we can use before resorting medicamentous treatment.

**Aim of the study.** Analysis of vegetable products and phytodrugs used in the treatment of the diseases of the digestive system, with: anti-inflammatory, antidiarrheal, anthelmintic, tonic-bitter, laxative, carminative, regenerative, hepatoprotective activity.

**Materials and methods.** Evaluation of profile literature, the medicinal plants, active principles and phytodrugs according with the State Nomenclature of Medicines of Moldova.

**Results.** Among many medicinal plants used in digestive system diseases, we can mention: *Chamomilla recutita* L., *Linum usitatissimum* L. (antiinflammatory action through the content of volatile oils and polyholosides); *Vaccinium myrtillus* L., *Quercus robur* L., *Fragaria vesca* L., (antidiarrhoeal action is ensured by tanning substances); *Tanacetum vulgare* L., *Dryopteris filix-mas* L. (anthelmintic action – by the content of volatile oils and filicine); *Gentiana lutea* L.,

*Artemisia absinthium* L., *Taraxacum officinalis* L. (bitter tonic action); *Frangula alnus* Mill., *Senna angustifolia* Vahl. (laxative action due to anthracene derivatives); *Anethum graveolens* L., *Coriandrum sativum* L., *Foeniculum vulgare* Mill. (carminative action – by coumarins and volatile oils); *Glycyrrhiza glabra* L. (the saponosides with antulcerous effect), etc. Out of the 5446 drugs included in State Nomenclature of Medicines of Moldova, the share of phytodrugs (vegetable products, homeopathic preparations, medicinal species) represent 15,4 % of the total number of medicines.

**Conclusions.** Pathologies of the gastrointestinal tract represent 8.8% of the causes of deaths in the Republic of Moldova, occupying the third place after circulatory diseases and tumors. In the treatment of gastrointestinal tract pathologies, are used: bitter-tonic, laxative, anti-inflammatory, antidiarrheal, anthelmintic, carminative, antulcerous, antihemorrhoidal and hepatoprotective phytodrugs, that represent 15,4 % corresponding to the State Nomenclature of Medicines of Moldova.

**Key words:** gastrointestinal tract, medicinal plants, phytodrugs

### **364. ANTIOXIDANT ACTIVITY OF *HYPERICUM PERFORATUM* L. AND *HYPERICUM ELEGANS* STEPH. SPECIES**

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**Introduction.** Oxidative stress is an important risk factor in developing pathological conditions in human body. Numerous phenolic antioxidants in species of g. *Hypericum* have scavenging radical activities and are considered promising bioactive compounds for free radical pathologies related with chronic diseases (atherosclerosis, neurodegenerative disorders, cerebral and cardiac ischemia, and rheumatic disorders).

**The aim of the study.** The comparative determination of total phenolic content (TPC) in different species *H. perforatum* L. and *H. elegans* Steph and in various plant raw materials (*Hyperici herba* and *H. flores*) of the sp. *H. perforatum* L.

**Materials and methods.** TPC for analyzed samples was assessed by Folin-Ciocalteu method. The absorbance was measured at 765 nm with Meterthech UV/VIS SP 8001 spectrophotometer. As solvent it was used 80% ethanol. The antioxidant activity was determined by DPPH and ABTS assay. The results are calculated in terms of gallic acid equivalent.

**Results.** The total content of polyphenols in dry extracts was determined: *Hyperici flores* – 42,76 mg/ml, *Hyperici herba* – 23,89 mg/ml, *H. elegans* aerial parts – 23,14 mg/ml. The antioxidant potential determined by DPPH method showed: 11,65 µg/ml – *H. flores*; 19,08 µg/ml – *H. herba*; 19,95 µg/ml – *H. elegans*). ABTS method showed: *Hyperici herba* – 22,75, *H. flores* – 28,73 and *H. elegans* – 22,39 mM TEAC.

**Conclusions.** The most quantity of phenols is contained in *Hyperici flores*, which contributes to higher antioxidant activity. However, the content of phenols in aerial parts of both species of g. *Hypericum* are almost the same. This should be taken in account, because of the possibility of using *Hypericum elegans* as a medicinal plant.

**Key words:** *Hypericum perforatum*, *H. elegans*, antioxidant, DPPH, ABTS

### **365. ANTIOXIDANT ACTIVITY AND TOTAL PHENOLIC CONTENT OF SEA BUCKTHORN (*HIPPOPHAE RHAMNOIDES* L.) FRUITS AND LEAVES**

Authors: **Patrisia Litvicov, Sorina Vesiolii**

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**Introduction.** Hippophae rhamnoides L., the common sea buckthorn, deciduous shrubs in the family Elaeagnaceae. The plant is being used in different parts of the world for its nutritional and medicinal properties.

**Aim of the study.** The present study focused on the antioxidant activity determination and total phenolic content of leaves (fresh/dried) and fruits (fresh/dried) of Hippophae rhamnoides L.

**Materials and methods.** In vitro antioxidant activity of extracts was assayed by DPPH, ABTS, and Iron chelating activity (ferrozine) tests. Total total phenolic content was determined by using the Folin-Ciocalteu assay.

**Results.** In all assays, the leaves of H. rhamnoides L. showed higher value of antioxidant activity (fresh: DPPH – IC<sub>50</sub>=28.88 µg/ml; ABTS – 28.79 µM TE/g dried weight; Iron chelating activity – 33.40 %; dried: DPPH – IC<sub>50</sub>=25.67µg/ml; ABTS – 29.04 µM TE/g dried weight; Iron chelating activity – 53.06 %) than fruit extracts (fresh: DPPH – IC<sub>50</sub>=357.97 µg/ml; ABTS – 16.44 µM TE/g dried weight; Iron chelating activity – none; dried: DPPH – IC<sub>50</sub>=689.52 µg/ml; ABTS – 9.03 µM TE/g dried weight; Iron chelating activity – none). The total phenolic contents in the examined leaves and fruits of H. rhamnoides extracts were 2.91 (died) – 4.57 (fresh) and 0.54 (fresh) – 2.30 (dried) mg GAE/g, respectively.

**Conclusions.** H. rhamnoides leaf extracts have shown considerable antioxidant properties. The consumption of this may play a role in preventing several human diseases, which involve the free radicals, such as cancer, cardiovascular disease, and premature aging. Thus, further investigations on the in vivo antioxidant activity and other antioxidant mechanisms are warranted.

**Key words:** Hippophae rhamnoides L., antioxidant activity, phenols

## DEPARTMENT OF PHARMACOLOGY AND CLINICAL PHARMACY.

### 366. COMPLICATIONS OF ANABOLIC STEROIDS UTILISATION

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**Introduction.** The anabolic steroids are most controversial drugs in the world. It works as heroin and amphetamine. Young people turning to use steroids as away to improve or change their body shape and nowadays a lot of people likely to use more steroids to bulk up so the number of people that require the steroids has been increased in the last few years, because these kind of drugs are incredibly effective. Steroids can push the physiologic limits of the muscle making it bigger faster and stronger that it could get naturally but abuse of steroids comes with several undesirable effects and health problems including liver, heart and skin infections as well as physiological disturbances such as depression and dependence.

**Aim of the study.** To study the most important complications of anabolic utilization.

**Materials and methods.** I analyzed the bibliographic review and documents about steroid utilization last 5 years ago.

**Results.** Anabolic steroids are powerful hormone. Steroids increase muscle growth and recovery, strength and leanness. Many serious side effects and health risks are involved with using steroids. Early symptoms are cystic acne, increase in body weight, headache, dizziness, cramping

and premature hair loss, health risks involving the cardiovascular system include cholesterol modification, heart disease, high blood pressure, septic chock and even death. Effects to the reproductive system include genital atrophy, genital swelling, sexual dysfunction, impotence, fetal damage, sterility and menstrual irregularities. The liver and kidney are under constant attack by steroids. Effects to the liver include cancer, pelosis hepatitis and effects on the kidney that include kidney stones, kidney diseases. Taking steroids can also affect the skin producing acne, rashes, and red spots on the body, increase body hair and baldness and increase facial hair in the women. The steroids can also affect the users psychologically: they can become depressed, aggressive and very hostile. Steroids often cause shrinking of testicles, breast growth, and a higher risk of prostate cancer.

**Conclusions.** Steroids are serious drugs that produce a lot of complications. The discontinuing use often leads to withdrawal and depression, which creates a lack of physical drive or social interaction among users.

**Key words:** anabolic steroids, complications

## DEPARTMENT OF SOCIAL PHARMACY *VASILE PROCOPISIN*

### 367. OPPORTUNITIES TO IMPLEMENT GOOD PHARMACY PRACTICE IN THE REPUBLIC OF MOLDOVA

Author: **Ala Vataman**

Scientific adviser: Aduji Stela, PhD, Associate professor, department of Social Pharmacy *Vasile Procopisin*

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**Introduction.** Based on the recommendations of the Good Practice Pharmacy Standards as well as the requirements of the national regulatory documents, a list of requirements for the premises of the Community pharmacies has been developed, which includes 12 indicators: the access routes, the name and working regime, the scale for disabled, railing, showcase, illumination, waiting area for visitors, the pharmacist individual contact area with the visitors, the pharmacist's workplace, the glass partition. Based on this list, was elaborated the Community Pharmacy Observation Sheet. The study has enabled recommendations to be made on improving the fitting out of the community pharmacies in the Republic of Moldova. Hence, in the service room must be provided: fair access for all visitors; waiting area with seats where visitors can wait until they are served; the consultation area, allowing the patient and the pharmacist to talk without being heard by other visitors and to provide wheelchair access; the health promotion area where is various information; all areas must be aesthetically pleased and must be effective in the pursuit of pharmacists' activities. In the pharmacy there must be, if necessary, direction indicators to facilitate the "finding" of the searched areas.

**Aim of the study.** The aim of study is evaluation of current situation concerning professional services provided by community pharmacies, as well as their implementation, to assure the advanced level of pharmaceutical services provision to the population.

**Materials and methods.** The survey data was collected using structured questionnaires and the official statistical data of the Agency of Medicines, the Ministry of Health and the Department of Statistics. Two questionnaires were developed to collect information, using the opinion polls of the pharmacists. These tools were developed on the basis of the pilot qualitative study through target groups, which allowed identification of the fundamental aspects of a study problem.

**Results.** On the basis of the results obtained during the study, the recommendations for a quality of services and the measures necessary for their implementation in practice have been developed.

**Conclusions.** It was found that the role of the pharmacist in contemporary society has evolved significantly over the last 4-5 decades; its functions have expanded considerably in the field of

clinical pharmacy and pharmacotherapy. The range of services provided by the Community pharmacies is broadly comprising the following services: 1) essential: delivery of medicines, promotion of healthy lifestyle, responsible auto-medication, receiving unused drugs for their harmless destruction etc.; 2) advanced: review of drug use medical screening services, chronic disease management, etc.

**Key words:** good Pharmacy Practice, pharmaceutical services

### **368. EVALUATION OF NONSTEROIDAL ANTI-INFLAMMATORY DRUGS USE IN THE ELDERLY**

Author: **Cristina Turcanu**

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**Introduction.** According to National Bureau of statistics of the Republic of Moldova, 15,7% of chronic diseases in the geriatric population represent conditions of osteoarticular system. NSAIDs play a major role in the management of acute and chronic pain syndromes, they effectively relieve pain, but also these drugs are known to produce serious side-effects and can potentiate, increase or decrease the effect of many prescription and non-prescription drugs that elderly population takes. Tools and tips to monitor NSAIDs use provided by pharmacists can enhance understanding the benefits and the potential risks of pain relief medicines, help elderly patients be able to identify typical side-effects and cautions, avoid complications and be aware of use them correctly.

**Aim of the study.** The purpose of this study is to underscore how pharmacists appreciate NSAID drugs use in the elderly and to present tips for pharmacists that will help elderly patients to be aware of potential risks of NSAIDs inappropriate use.

**Materials and methods.** It is a longitudinal study in which all the variables were collected from December to March 2018. A standardized questionnaire, with 8 closed-ended and 2 open-ended questions, was applied. Participants, drugs consumers, were visitors of community pharmacy. A descriptive analysis was performed; descriptive statistics such as mean, frequencies and percentages were used to describe and summarize the data. All analyses were performed using SPSS for Windows version 22.0.

**Results.** Data suggest that current patient perception on NSAIDs is poor. In pharmacist's point of view, elderly patients practice self-medication with NSAIDs (71%) and only 11% of pharmacists reported that the knowledge of elderly about NSAIDs are sufficient; additionally, in 75% of cases elderly didn't report side effects caused by NSAIDs. The NSAIDs drugs requested by elderly are diclofenac and ibuprofen (80 responses), followed by paracetamol (34), nimesulid (29), desketoprofen (26), aspirin (22) and less than 20 responses – indomethacin, meloxicam, naproxen, metamizol and ketorolac. 66% of elderly patient return in particular pharmacy for counseling and select the NSAID drug according to pharmacist's recommendation (82,7%). The majority of pharmacists listed such abilities as empathy, patience, amiability, simple language, and professionalism necessary to enhance communication with elderly.

**Conclusions.** Before taking NSAIDs medication, elderly patients should be aware of the risks involved through detailed discussion with healthcare providers, including pharmacists. The community pharmacist can play an essential role in ensuring safe use of NSAID through regularly review pain relief medicines taken by older people, such as diclofenac, ibuprofen and paracetamol etc.

**Key words:** elderly, nonsteroidal anti-inflammatory drugs use, pharmacists

### 369. ADDRESSING ACCESS BARRIERS TO MEDICINES IN THE REPUBLIC OF MOLDOVA

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**Introduction.** In middle-income and low-income countries, average availability of medicines is 35% in public facilities and 66% in the private sector. The prices are often unaffordable, for the majority of population. Up to 50% of medicines are inappropriately prescribed or dispensed, and up to 50% are used incorrectly by patients. This leads to significant wasted resources, the potential to drive the development of drug resistance and to poor health outcomes. Many patients, especially the poor, rely on the informal sector for their health care needs including medicines, while respective vendors have little or no pharmacy training.

**Aim of the study.** Evaluation and addressing barriers of population from Republic of Moldova to medicines through health system perspective.

**Materials and methods.** Has been conducted a descriptive cross-sectional study of international practice on strengthen policy framework on access to medicines; secondly has been initiated a quantitative study on the population of Republic of Moldova regarding the access to medicines.

**Results.** According to UNDP, global access to medicines is: having drugs continuously available and affordable at public and private health facilities or drug outlets that are within one hour's walk of the population. Addressing access barriers to medicine has four dimensions: availability, geographic accessibility, affordability and acceptability. Availability: medicines supply-type and quantity and medicines demand type and quantity; affordability: prices of drug products and services, user income and ability to pay; acceptability: characteristics of products and services, user attitudes, expectations of products and services; accessibility: medicines supply location and user location. Another concept assume that access is defined by rational use: rational therapeutic choices and improved medicines' use by consumers; affordable prices: medicines pricing policies; sustainable financing: resource mobilization, pooling, reduction of out-of-pocket expenditures; reliable health and supply systems: medicines procurement and supply, regulation, human resources.

**Conclusions.** According with latest studies, the main health expenditure of population from Republic of Moldova are medicines – 73,5%. In case of hospitalisation 44% of population had to by supplementary medicines. To address barriers health system should ensure health equity, funds, universal health coverage, health insurance, provision of essential health care services, pay for performance, regulatory approaches, needs-based financing, integrated outreach services, abolishment of user fees, staffed peripheral health facilities, sensitive health care delivery.

**Key words:** medicines, access barriers, health system

### 370. ELDERLY PEOPLE AND OTC MEDICINES: PERCEPTION AND DRUG CONSUMPTION PATTERN

Author: **Tatiana Schiopu**

Scientific adviser: Adauji Stela, PhD, Associate professor, department of Social Pharmacy *Vasile Procopisin*

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**Introduction.** Optimizing OTC medications are an important component of caring for an older person. However there is surprisingly little information about how elderly people choose and use nonprescription medications. Community pharmacists are an essential resource and clearly play



a key role in geriatric population' use of OTC medications. To ensure that elderly patients are able to manage their non-prescription medicines and do not suffer from adverse effects caused by excessive or inappropriate consumption of this medicines, it is necessarily to achieve greater partnership in medicine taking between elderly patients and pharmacists.

**Aim of the study.** to determine the over-the-counter drug consumption pattern of elderly people in pharmacist's point of view and to highlight a need for improved pharmacy education around OTC drugs use in the elderly.

**Materials and methods.** The study was a cross sectional study on pharmacists dispensing OTC medicines for elderly visitors in community pharmacy. The pharmacies were selected randomly and then pharmacists were interviewed by using standardized questionnaires that includes 10 questions, with 7 closed-ended and 3 open-ended questions. Descriptive statistics (frequencies and percentages) were used to summarize the data. All analyses were performed using SPSS for Windows version 22.0.

**Results.** Data on the use of OTC medications in the elderly were collected by questioning pharmacists. The majority of pharmacists responded that elderly people visit community pharmacy to medication supply; 91.8% of them got drugs from medical prescription and 76,4% practiced self-medication. 73% of the elderly practiced to ask question about their medication, 95,4% of them ask about the right way to administer and 80,7% about indications (uses for the drug). Older adults used OTC medications to treat pain (73%), colds (51%), headaches (49%), constipation (31%), diarrhea (25%), fever (25%), coughs (22%), insomnia (20%) and others. Concerning OTC drugs used by elderly, the most of them took citramon (60%), acetaminophen (53,6%), pancreatin (44,5%), ibuprofen (42,7%) and others. 65% of the respondents indicated that elderly patients frequently return to their pharmacy for asking further counseling and appreciated the compliance to the OTC therapy as satisfactory (55%).

**Conclusions.** The results of the study indicate that it's important to encourage elderly patients further to seek pharmacist's professional advice before purchasing OTC medicines, especially on supporting effective use of NSAID medicines and promoting patient education on pain. Pharmacists are in an excellent position to continue education in geriatric care, which would increase the demand for pharmacists with the skills, knowledge, and experience to care for elderly people.

**Key words:** elderly people, pharmacist, community pharmacy, OTC drug

### **371. PHARMACEUTICAL CARE OF CHILDREN WITH TYPE 1 DIABETES MELLITUS IN REPUBLIC OF MOLDOVA**

Author: **Macari Doina**

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**Introduction.** Prevalence of type I diabetes mellitus (T1DM) among children and adolescents in Republic of Moldova presents 397 cases, signalling an annual increase of 5,8%. Poorly managed diabetes leads to serious complications and early death.

**Aim of the study.** Evaluation of pharmacists competencies in providing pharmaceutical care to children with type I diabetes and establishing the direction to improve level of competencies of them.

**Materials and methods.** As a method of study, has been used the quantitative analysis through the closed questionnaire, sample size: 100 pharmacists.

**Results.** As a result of the review of the literature has been identified the following competencies necessary for the pharmacists to provide pharmaceutical care to children with T1DM: general knowledge, blood glucose monitoring, drug administration, premedical and medical care, healthy

eating, physical activity, prevention of late complications. Pharmacists have general knowledge about the notion of T1DM (73%); 71% of those surveyed know that T1DM cannot be prevented and 86% know that this disease is manifested in children, adolescents and young adults. Blood glucose monitoring: 43.3% of respondents think, that the glycaemic targets in children is 3.8 and 8.3 mmol/l. Insulin injection sites: 55% of the pharmacists had answered to the abdomen, and as modern medical devices used, 50% know about the glucose meter. The treatment for T1DM involves: insulin injections and periodic self-monitoring of insulin (84.8%) and an average of 28% know all types of insulin. If a patient with hypoglycaemia is present in the pharmacy, 77% responded that they would call the ambulance and offer sugar to the patient. Speaking about healthy eating, 78% can provide nutrition counselling and on average 30% recommend fibers and protein. In T1DM, physical effort is recommended after the peak of insulin action (50 %) and they recommend walking and running (94%). On average 14% of pharmacists know all the long-term complications of diabetes and 87% would like to be trained to provide counselling to these patients.

**Conclusions.** Pharmacists could provide counselling to children with type T1DM about: healthy eating, physical activity, adherence to treatment, monitoring, problem solving, reducing risks. Fewer competencies are attested about: glycaemic targets in children, the types of insulin, the duration of their action, insulin injection sites, long-term complications. As the level of care increases, pharmacists' knowledge increases through experience, continuing education, individual study, and mentorship. There is a need of more strong collaboration with physicians, diabetes associations and development of special training courses for pharmacists.

**Key words:** type I diabetes mellitus, pharmaceutical care

## **372. COMPARATIVE ANALYSIS OF LEGAL PROVISIONS ON PRESCRIPTION OF DRUGS IN DIFFERENT COUNTRIES**

Author: **Diana Schiopu**

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**Introduction.** The medical prescription is a written document, addressed to the pharmacist, signed and initialled by the doctor, in which is indicated the patient's medication in ambulatory conditions. The prescription authorizes the release by a pharmacist of a specified quantity of drugs under the control of the legislation in the field.

**Aim of the study.** Comparative analysis of legislation on prescription of drugs in the Republic of Moldova and other countries.

**Materials and methods.** Have been evaluated State Drugs Nomenclature, regulation of medicines prescription in different countries, literature review of prescriptions forms of drugs.

**Results.** Currently, in Moldova, according to State Drugs Nomenclature are authorized 4952 drug names, of which 1430 are included in the OTC list, that constitutes 28.9%, respectively 3522 drug names, according to the legislation in force requires medical prescriptions to be released by the pharmacist. In Romania are authorized 35138 drug names, of which 2077 are OTC, that represents 6%. The family physicians and specialists are the ones who can prescribe a prescription, but the compensated drugs can only be prescribed by the family doctor. In the Republic of Moldova the prescriptions are made only on paper, in accordance with the provisions of the Order of the Ministry of Health no. 960 of 01.10.2012. In Romania and North Carolina most recipes are electronic, this helps to increase the quality of the medical act, significantly reducing the risk of error during the enrolment. The engine of medical rules (drug interactions, contraindications, correlations between diagnosis, age and prescription drugs), the

entire technical background of the electronic prescription reduces the risk of complications. When prescribing drugs, psychotropes and precursors, medicines under control, the patient receives the paper recipe in the Republic of Moldova and is written in 3 copies, in Romania - are 4 copies, using 2 types of prescription: the yellow color when prescribing the medicines of Table 2 and green - in Table 3 (Annex to Law 339/2005 RO). In Moldova the circulation of these drugs is regulated by the Law 382 of 06.05.1999, the Government Decision no.1088 of 05.10.2004 and the Order of the Ministry of Health no. 960 of 01.10.2012.

**Conclusions.** In the Republic of Moldova, the number of OTC drugs is lower than in Romania, but in relation to the total number of those authorized, then in Romania 1 out of 17 authorized is OTC, and in Moldova 1 out of 3.5. The use of electronic prescriptions in the medication process minimizes medication errors caused by prescription and release of drugs.

**Key words:** drugs prescriptions, pharmacy, OTC medicines

### **373. BENEFICIAL EFFECTS AND SIDE EFFECTS CAUSED BY ISOFLAVONES FROM FOOD SUPPLEMENTS AND DERMATOCOSMETIC CREAMS**

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**Introduction.** Isoflavones are bioactive substances, also called phytoestrogens, because their chemical structure is similar to that of the human estradiol hormone. Significant amounts are found in soy and red clover in glycosidic form: genistin, daidzein and glycitin. The main users of isoflavone products are menopausal women seeking an alternative to hormone therapy. Currently, there are an enormous number of dietary supplements and cosmetic creams with isoflavones. Advertising and prospectuses assure consumers that products are natural, safe, although neither their benefit nor their safety has been sufficiently demonstrated.

**Aim of the study.** Advanced bibliographic study on researches of the safety and risk-benefit ratio of isoflavones in food supplements and dermatocosmetic creams.

**Materials and methods.** 116 abstracts and articles from systematic research in the Cochrane Electronic Library, MEDLINE databases, CAB Abstracts © CAB, and SciSearch © The Thomson Corporation.

**Results.** Possible long-term carcinogenic effects and goitrogenic effects, by the thyroid inactivation of peroxidase by certain genistein concentrations (24% of the evaluated sources), have been identified. There are studies (21%) on adverse effects in fertility and reproductive tract toxicity in women. Experiments on mice after ovariectomy and implantation of breast cancer cells indicate stimulation of mammary tumor growth (5% of summaries). Several studies reveal an increased allergenic potential of isoflavones (9%). A large number of studies (27%) showed that genistein causes adverse effects on the female reproductive system, but also the involvement of isoflavones on central immune and central nervous systems (14%). However, a significant number of abstracts and articles can also be found, which also show beneficial effects in the improvement of vasomotor symptoms in the menopause.

**Conclusions.** It has been found that data on the increased impact of isoflavones on menopausal problems of women are not enough and convincing, and long-term intake of high doses of isoflavone supplements for them is very risky.

**Key words:** isoflavones, food supplements, dermatocosmetic creams

### **374. DIOXOINDOLINONĂ-A NEW AUTOHTON PRODUCT WITH ANTIDEPRESSIVE ACTIVITY**

Authors: **Cristina Cociorva, Tatiana Ștefanet**

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**Introduction.** According of American Psychiatric Association, mental health is defined by the simultaneous success in work, love and the ability to resolve with maturity and flexibility the conflict between instinct, consciousness, close persons and reality. There is no universal definition. However, neuropsychiatric disorders are the third cause of disability in Europe and represent 15.2%, after cardiovascular disease 26.6% and malignant neoplasms (cancers) 15.4%. The most common mental illnesses are anxiety, depression and dementia. It is estimated that by 2020 depression will become the second leading cause of disability worldwide, after cardiovascular diseases.

**Aim of the study.** In this study we have proposed as the objective the recipe of the medical scientific literature of the contemporary therapy of depressive states.

**Materials and methods.** The bibliographic and informative sources published in recent years, published both internationally and in the Republic of Moldova, have been used as study materials.

**Results.** Scientific dates demonstrate that treatment of depressive states includes several groups of preparations: selective serotonin reuptake inhibitors (SSRIs), noradrenaline and dopamine reuptake inhibitors (IRND), selective serotonin reuptake enhancers (SSRIs), noradrenergic and serotonergic antidepressants, serotonin and noradrenaline reuptake inhibitors (IRSN), monoamine oxidase inhibitors (MAOIs), tranquilizing benzodiazepines and non-benzodiazepine. Of the classes of organic substances with MAO inhibitors are involved and derivatives of 2-indolinone and 2,3-indolinedione. In this context, a new autohtone compound of the isatine group is investigated, with pronounced antidepressant and sedative-tranquilizing activity—1'-(2-oxo-propyl)-spiro[[1,3]dioxolane-2',3'-indolin]-2'-one with the common name "DIOXOINDOLINONE" synthesized in the Organic Synthesis and Biopharmaceutical Laboratory of the Institute of Chemistry.

**Conclusions.** Although there are already a large number of antidepressant drugs in the pharmaceutical market, the development of new structures remains in the topicality.

**Key words:** anxiety, depression, MAO

### **375. EVALUATION OF METHODS FOR DETERMINING THE OTOTOXICITY OF DRUG SUBSTANCES**

Authors: **Cristina Spinu, Roman Lupu, Ana Podgornii, Eugeniu Nicolai**

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**Introduction.** There are several options for monitoring ototoxic changes. Many ototoxicity monitoring protocols are based on the ototoxic profile of platinum in chemotherapy (eg cisplatin) and aminoglycoside antibiotics (Gentamycin, Tobramycin, Kanamycin, Streptomycin, etc.) because they are widely used and have a relatively high incidence in the ototoxic events. However, other ototoxins such as difluoromethylnitrite, loop diuretics and salicylates can cause a wide variety of other audiometric configurations. Therefore, for a drug with a poorly defined ototoxic or ototoxic profile, It is very important to monitor the ototoxicity of the drugs whether or not they cause hearing loss and cause changes that have met the criteria for adverse effects.

**Aim of the study.** Systematization of data about the methods and techniques for determining the ototoxicity of the drug by advanced bibliographic study.

**Materials and methods.** 167 abstracts and scientific articles from the Cochrane Electronic Library and the MEDLINE database.

**Results.** The bibliographic study highlighted three basic primary approaches in the monitoring of drug ototoxicity (87% of sources): conventional audiometry, high frequency audiometry and ototacoustic emissions. Another technique (present in about 13% of the investigated materials), such as the auditory brain response, can be used for a particular patient, but it is not a standard monitoring technique, although it can also be a criteria for detecting changes in auditory system.

**Conclusions.** A variety of methods exist for monitoring ototoxicity of drug substances in the local therapy of auricular pathologies. Some are designed either for the early detection of ototoxicity and some in a simple evaluation for obtaining additional information about ototoxic changes and its site of lesion.

**Key words:** ototoxicity, monitoring, methods, drug substances

### **376. THE EVALUATION OF SOME TECHNIQUES OF THERMAL ANALYSIS AT THE PREFORMULATION STAGE OF COMBINED DRUGS**

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**Introduction.** Thermal analysis includes several analysis techniques, which measure an analytical signal of the sample at a certain temperature. The analysis is based on thermogravimetric curves. The instrument used in thermal analysis consists of a microbalance surrounded by a electrically heated furnace equipped with a thermocouple to monitor the temperature.

**Aim of the study.** is to assess the use of of thermo-gravimetric and differential scanning calorimetry methods at the preformulation stage of combined drugs.

**Materials and methods.** Electronic databases: Medline, Cochrane, Embase and Springer. Also, the search was conducted by using printed, pharmaceutical and chemical journals. It was analyzed 150 bibliographic sources.

**Results.** In most of the researches (45%), thermogravimetric analysis was used in order to determine the decomposition temperature of the individual active substances and also from the mixtures of active substances with excipients or with other active substances. Also, most frequently (53.3%), thermogravimetric analysis has been combined with other techniques such as: differential scanning calorimetry. Less researches (1.7%) applied thermogravimetric method to determine water content and volatile substances.

**Conclusions.** Thermogravimetry and differential scanning calorimetry are physico-chemical methods which are widely used for compatibility research of active substances and excipients at the preformulation stage of drugs.

**Key words:** thermogravimetry, preformulation, combined drugs

### **377. APPLICATION OF IR SPECTROSCOPY FOR EVALUATION OF COMPATIBILITY OF DRUG SUBSTANCES WITH EXCIPIENTS**

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**Introduction.** The researchers conducted on interactions between different drug substances combined in the same dosage form are fundamental to avoid the instability of the finished medicinal product. IR spectroscopy is one of the oldest physical methods, being one of the most suitable for obtaining absorption spectra, which are then applied to determine the compatibility by using electromagnetic radiation to interact with the substances and to investigate, therefore, certain characteristics of the sample depending on the wavelength.

**Aim of the study.** The bibliographic evaluation of IR techniques applied for the Exploring of compatibility of drug substances with excipients.

**Materials and methods.** 68 abstracts and articles from systematic research in the Cochrane Electronic Library, MEDLINE databases.

**Results.** Based on the absorption of infrared radiation by substances, IR spectroscopy provides sufficient information about the possible interactions between the active substances and excipients of a multicomponent dosage form. In all bibliographic sources, the Fourier Transformation Infrared Spectroscopy (FTIR) method is associated and complementary with other techniques for compatibility determination such as Differential Scanning Calorimetry (DSC), X-ray diffraction. The study of possible interactions between drug substances and excipients by using FTIR is performed by the KBr pellet method, where the IR spectra are first recorded individually, then in binary mixtures in the scanning range from 4000 to 500 cm<sup>-1</sup>. The obtained spectra are indicative for the nature of chemical bonds in the sample test and for the mixtures of substances, that can be used to identify the chemical structures or composition of the investigated sample. Overlapping peaks of substances and excipients in mixtures are analyzed and compared to peaks of individual spectra.

**Conclusions.** It has been found that IR spectroscopy is a common, important and mandatory technique in assessing the compatibility of drug substances with excipients.

**Key words:** IR spectroscopy, compatibility, drug substances, excipients

### 378. COMPARISON OF FLUCONAZOL CAPSULES DISSOLUTION PROFILES

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**Introduction.** The dissolution test is the most used physico- chemical test in the evaluation of the quality of the medicinal product to assess the in vitro-in vivo correlation. In the development of drug formulation, is it used to select optimal composition, study of stability and physico-chemical parameters required in the technological process, and in quality control for verifying the reproducibility of in vitro release of series launched on the pharmaceutical market.

**Aim of the study.** is to investigate the dissolution profile of Fluconazole-RNP 50 mg capsules compared to another recognized manufacturer (Mycosyst 50 mg Gedeon Richter Ltd. (Hungary) capsules.

**Materials and methods.** "Shimadzu" HPLC Chromatograph with RID-10A Detector; electronic analytical balance; pH meter Consort C861; Fuconazole-RNP and Mycosyst Gedeon Richter capsules; acetonitrile; methanol.

**Results.** The dissolution test demonstrated the similarity of the dissolution profiles of the compared products.

**Conclusions.** All media used to compare the dissolution profiles of fluconazole capsules in the dissolution test show that the similarity factor (f<sub>2</sub>) is at least 50, which demonstrates the similarity of the fluconazole-RNP bioavailability compared to Mycosyst.

**Key words:** dissolution test, bioavailability, fluconazole, Mycosyst, similarity.

### 379. CONTEMPORARY MANAGEMENT OF OBESITY

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**Introduction.** Obesity has become a serious public health problem in most industrialized countries, affecting a growing segment of the population.

**Aim of the study.** Study of etiopathogenetic factors, consequences and strategies of obesity treatment in Moldova and Israel.

**Materials and methods.** 220 patients overweight were evaluated in 2017 aged 40-79. I used the questionnaire to investigate clinical cases.

**Results.** Our group is made up of 30% male subjects and the vast majority of 70% of female subjects. 76% of the subjects in the control group claim 3-5 meals per day, 13% consume 2-3 meals / day and only 14% - between 5-7 meals / day. It is noticed that 55% of patients have a sedentary activity at work 40% of people were diagnosed but dyslipidemia, 20% with diabetes, 15% with hypertension, and 25% with associated diseases. It was found that 37% of patients were treated with Orlistat and 19% with Lorcaserin, of which 49% of patients treated with Orlistat and 40% of patients treated with Lorcaserin lost  $\geq 10\%$  of baseline body weight after 6 months of treatment, the mean weight difference between these preparations being 3.2 kg.

**Conclusions.** Obesity is associated with numerous complications, such as dyslipidemia, diabetes, hypertension, etc. After 6 months of treatment, the mean difference in weight loss of Orlistat and Lorcaserin was 3.2 kg.

**Key words:** obesity, Orlistat, Lorcaserin

### 380. THE CONTEMPORARY PRINCIPLES OF PHARMACOTHERAPY IN ATOPIC DERMATITIS TO CHILDREN

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**Introduction.** In the Republic of Moldova atopic dermatitis to children is increasing as in other countries and the prevalence of this disease has increased from 11.9% in 2006, to 19.6% children, in 2016.

**Aim of the study.** Elucidation of the contemporary aspects of etiological, clinical and pharmacotherapeutic features of atopic dermatitis to children.

**Materials and methods.** The analysis of 97 cases of atopic dermatitis to children for 2 years, which were addressed to family doctors at the polyclinics.

**Results.** Of the study group with atopic dermatitis, it was established that 42.5% belonged to the extrinsic subtype of atopic dermatitis to children, and 57.5% of the patients belonged to the intrinsic subtype. To 3% of children is the mild form of evolution, in 35% of cases the evolution is average and in 52% serious cases. Of the group of children which were included in study, 11 have other associated allergic diseases (27%), respectively 8 with allergic rhinitis (20%) and 3 with bronchial asthma (7.5%). Glucocorticosteroids are first-line remedies in topical treatment of atopic dermatitis, such as mometasone, clobetasol and fluticasone creams. Of the first generation of antihistamines, such as clemastine, chlorpiramine and ciproheptadine are prescribed with pre-selection in acute forms of the disease. In subacute and chronic forms, second- and third-generation antihistamines are generally used.

**Conclusions.** Glucocorticosteroids are indicated for children with moderate, severe or recurrent forms of atopic dermatitis to children. Generations of antihistamines of the first generation are prescribed with predelection in acute forms, while second- and third-generation antihistamines are used in subacute and chronic forms.

**Key words:** atopic dermatitis, children, antihistamines, glucocorticoid.

### 381. ACTUALITIES IN THE TREATMENT OF PARKINSONISM

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**Introduction.** Parkinson's disease is a slowly progressive neurologic disease that is characterized by a fixed inexpressive face, tremor at rest, slowdown of voluntary movements, gait with short accelerating steps, peculiar posture and muscle weakness, and low production of the neurotransmitter dopamine. It has a prevalence of about 1 per 1,000, reaching 1 in 200 in the elderly, estimated to affect over 6.4 million people worldwide, so far no case can be established and healing it. The incidence of Parkinson's disease in the Republic of Moldova has not been the subject of epidemiologic research, and is not on the list of statistically reported diseases.

**Aim of the study.** Analyse the frequency of Parkinson's disease, the causes of its occurrence, and to establish treatment methods according to the etiology of the disease as well as highlighting the latest treatment methods.

**Materials and methods.** The study includes a complex research of Parkinson's pharmacotherapy based on the analysis of the observation files of patients in the Vascular and Extrapyramidal Neurology Department of the Institute of Neurology and Neurosurgery. An analysis of the observation sheets and the indication sheets of 50 patients with Parkinson's disease diagnosed and hospitalized during 2017. From each patient's file, the following data were taken for analysis: sex, age, background, medical and surgical treatment principles, discharge recommendations.

**Results.** According to the processed data, we can see that Parkinson's disease is manifested in both female patients 22 (44%) and male patients 28 (56%). According to age prevalence, the majority of investigated patients belong to the age range of 66-75 years, in total 21 cases (42%); followed by 56-65 years-16 cases (32%). The lowest prevalence is represented by the age of 76-85 years - 3 cases. In rural areas, the prevalence is higher (60%) than urban (40%).

**Conclusions.** Despite the extraordinary progress of neuroscience, PD etiopathogenesis remains a mystery. There are several factors that interact, or more, processes that influence or contribute to BP pathogenesis. After performing the study, we found that Parkinson's disease is manifested in both sexes, and most patients fall into the age of 66-75 years. In depending on the environment of origin, there are more patients in rural areas. There is no treatment to stop the destruction of the nerve cells that lead to this condition. However, some medicines can relieve the symptoms of the disease.

**Key words:** Parkinson's disease, etiopathogenesis, treatment

### 382. THERAPEUTIC OPTIONS IN BRONCHIAL ASTHMA FOR ADULTS

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**Introduction.** Bronchial asthma is one of the most common chronic diseases among children and adults over 40 years . This illness requires complex treatment, aimed at avoiding trigger factors, medication, physical and psychological therapy. The prevalence of this pathology in the country is 4%, with 160 thousand asthmatics registered. The disease predominates in male gender, with a ratio of 1.5-3 / 1. The overall prevalence of asthma varies from 1% to 18% in different countries and the mortality rate is currently estimated between 2 and 4 cases per 100,000 population in a year.

**Aim of the study.** Assessment of bronchial asthma medication of the 4 stages of severity (intermittent, persistent, moderately persistent and severely persistent) in terms of the 5 stages of treatment.

**Materials and methods.** Analysis of data from the speciality literature of the last 5 years.

**Results.** Depending on the level of control and the evolution of the disease, the treatment of asthma is accomplished in 5 steps. For all stages, emergency medication consists of  $\beta$ 2 rapid-acting inhaled agonists (salbutamol nictimer dose 600-800  $\mu$ g, fenoterol 600  $\mu$ g) inhaled anticholinergic drugs (ipantropium bromide 60-120  $\mu$ g) and methylxanthines (300-800  $\mu$ g theophylline). At Stage 1, treatment is indicated for patients who experience symptoms of AB less than 2 times a week. For this patient group only emergency medication is used. Step 2 is addressed to patients with persistent asthma symptoms. In the control medication, low-dose inhaled corticosteroids or leukotriene antagonists (montelukast 10 mg, zafirlucast 20 mg) are recommended. Step 3 is for patients who lack control under treatment 1 and 2. For maintenance, combinations of  $\beta$ 2-agonists + CSI, leukotriene + CSI antagonists or theophylline retard + CSI are recommended. Step 4 is recommended for patients who are unstable in 3rd stage treatment. Control medication includes: Long-acting CSI +  $\beta$ 2 agonists + small doses of retard theophylline. Step 5 treatment is for those with severe AB. The medication is orally CS + anti-IG E.

**Conclusions.** The division of the contemporary AB treatment in the 5 stages would lead to the exclusion of overdosing and would allow a more individualized and personalized approach for the patient.

**Key words:** bronchial asthma, emergency medication, control medication

### 383. STUDY OF THE SPECTRAL CHARACTERISTICS OF DIOXOINDOLINON

Author: **Diana Ciocoi, Jubirca Ionela, Tatiana Stefanet**

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**Introduction.** The anxiety disorders, depression and stress disorders are brought on by psychological challenges faced by a large number of people. Based on the WHO data, the number of people that suffer from depression has increased to 322 million, or more than 18 percent over the last decade. The therapy of mental disorders needs a continuous updating. At the lab of organic and biopharmaceutical synthesis in the University of chemistry, a new, autochthonous compound was synthesized in the isatine group, with the pronounced anti-depressive, sedative and tranquilizing activity (according to preliminary studies).

**Aim of the study.** To investigate the spectral characteristics of the substance 1'-(2-oxo-propil)-spiro[[1,3]dioxolane-2',3'-indolin]-2'-one.

**Materials and methods.** We used Spectrophotometers UV-VIS Agilent 8453 and Bruker AC-E 400 SUA, a device used to determine the melting point Melting-Point Meter KSPII, electronic balance OHAUS DV125 CD, chemical dishes, solvents and reagents, according to the requirements of the European Pharmacopoeia.

**Results.** The substance, formula bruto C<sub>13</sub>H<sub>13</sub>NO<sub>4</sub>, Mr =247,25, represents an odorless white crystalline powder, slightly soluble in alcohol, chloroform and benzene, poorly soluble in water and ether. Melting point 125-127°C. The spectrum in alcohol was recorded in the range of wavelength 200-360 nm. The alcoholic solution 2,5mg/L manifests 2 maxims with a different intensity: at 215 ± 2 nm ( 3150 and at 258 ± 2 nm ( 490). Some spectrum of nuclear magnetic resonance <sup>1</sup>H and <sup>13</sup>C RMN (200.13 and 50.32 MHz) in 2-% solution of CDCl<sub>3</sub> were recorded. The value of chemical movements is in the system δ ppm to the signal TMS in correlation with the signals CHCl<sub>3</sub> (δH 7.24 și δC 77.0 ppm). <sup>1</sup>H NMR δ, ppm, J/Hz: 2.17 s (3H, Me), 4.28-4.39 m (4H, 2CH<sub>2</sub>), 4.51-4.60 m (2H, CH<sub>2</sub>), 7.07-7.11 t (1H, CH, J=7.36 Hz), 7.29-7.33 t (1H, CH, J=7.65 Hz), 7.38-7.39 d (1H, CH, J=7.36 Hz). <sup>13</sup>C NMR, δ, ppm: 201.85 (C=O), 173.25 (NC=O), 143.35 (C<sub>4</sub>), 131.86 (C<sub>7a</sub>), 125.14 (C<sub>3</sub>), 123.70 (C<sub>5</sub>), 108.52 (C<sub>6</sub>), 102.13 (C<sub>7</sub>), 101.97(C<sub>3a</sub>), 65.69 (OCH<sub>2</sub>), 27.02 (Me).

**Conclusions.** The results of the study of spectral characteristics of 1'-(2-oxo-propil)-spiro [[1,3] dioxolane-2', 3'-indolin]-2'-one will be used to elaborate the methods of analysis and standardization for this substance.

**Key words:** anxiety, depression, monoamine-oxidase inhibitors, spectrophotometry UV-VIS

### 384. PRINCIPLES OF ADMINISTRATION AND MONITORING OF SPECIFIC TREATMENT OF BURNS IN PEDIATRIC PATIENTS

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**Introduction.** Burns in children are serious tissue damage with necrosis of skin, adipose tissue, muscles, tendons, nerves, blood vessels, bones, disturbances of homeostasis, with the development of acute multiorganic failure syndrome and septic complications. These circumstances require the development of measures for the prophylaxis and treatment of pathological disorders developed locally and in the organs' system due to thermal trauma. Depending on the depth degree, we distinguish burns of I, II, III, IV degrees. The distribution of burns according to heat transfer mechanism and aggression type is: 72.8% - hot liquids; 14.2% - flame; 8.7% - incandescent objects; 3.6% - electrical; 0.7% - chemical, solar. According to the statistics of the Republican Clinic of Burns and Plastic Surgery, burns make up 5-6% of all acute pediatric traumas. Breakdown of burns by age: 0-3 years 48.6%; 3-7 years 22.4%; 7-15 years 29.0%. According to world statistics, burns constitute a very important issue due to their high frequency in the pediatric population of about 3.4-36%.

**Aim of the study.** To elucidate the particularities of the development of burns in children and some correct contemporary principles in the administration and monitoring of specific treatment.

**Materials and methods.** Analysis of data from the Clinic of Burns and Plastic Surgery during 2007-2017.

**Results.** In the last 10 years, 5715 children with burns (0-3 years - 50.6%, 4-7 years - 24.4%, 8-18 years - 25%) were treated in the Clinic of Burns and {Plastic} Surgery. Of which: 2844 (55.2%) – with superficial burns, 2871 (44.8%) – with deep burns and 645 children were hospitalized with combustion shock. Contemporary treatment of burns and post-combustion sequelae consists of: necrophasciotomies, amputations, joint amputations, early necrectomies, free skin plastics, plastics with pedicle flaps, plastics with remotely migrated flaps, tissue expansion, but also of drug application. Currently, early surgical treatment of deep burns has become an axiom because the combustion disease consequences depend directly on the skin restoration term.

**Conclusions.** Acquired experience indicates that initiation of intensive treatment at the initial stage (appropriate thermal shock therapy, septic complications prevention, early surgical restoration of damaged skin) allows achieving positive results in aforementioned surgical pathology.

**Key words:** burns, tissue damage, surgical treatment

## **ETHICS AND DEONTOLOGY**

### **385. BIOETHIC APPROACH TO DECISIONAL MANAGEMENT IN PATIENT CARE**

Author: **Carolina Frumusache**

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**Introduction.** The ethical framework of decision-making in palliative care is determined by the applicability of the following bioethical principles: autonomy, benevolence, nonmaleficency and justice. These values need to be mastered to highlight all features of the person involved in decision making: cognitive, affective, social, and spiritual.

**Aim of the study.** To emphasize the bioethical elements that contribute to the formation of a moral image that involves taking a medical decision regarding pain management.

**Materials and methods.** Theoretical and bioethical studies have been used, respectively hermeneutics as a main method.

**Results.** The process of death, suffering and pain become notions directly tangential to the cultural aspects and customs established in a society. As a result the needs for unanimity of medical-biological, ethical, religious and philosophical approaches are particularly clear. The notion of pain in palliative care is not limited only to its somatic component, but extends to a concept of total suffering that includes moral and spiritual one. In this context, a fundamental role is played by the interdisciplinary dialogue of specialists to alleviate the pain in suffering patients.

**Conclusions.** Involvement of hermeneutics in the palliative act configures the objective of interpreting the patient's condition, in particular to determine how pain relief can be achieved. The reduction of physical pain in terminal patients is possible, in the vast majority of situations, by the use of analgesics, by proper care (care of their mouth, skin, etc.). Physical sufferings before death are not always effectively eliminated by the application of the listed methods. For this they should be accompanied by moral-spiritual counseling. Supporting spiritual counseling for patients in the terminal phase consists of active listening and verbal supportive interventions and clarification of existential themes that arise in the patient. The ethical element that guides the relief of physical suffering is the professional attitude of the team involved in the palliative act in accordance with the conditions for achieving human dignity.

**Key words.** bioethics, theoretical medicine, palliative act, pain, suffering, quality of life

### **386. BIOETHIC LANDMARKS IN THE APPROACH OF ENDOCRINE DISORDERS**

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**Introduction.** The endocrine system coordinates the functions of various organs through hormones that are released into the bloodstream from specific cell types within the endocrine glands. Contemporary endocrine disruptions are multifactorial, many of the conditions are determined by the natural and social environment. In the case of patients with endocrine disorders, the polydimensional approach addresses the diversity of factors, namely from the conceptual positions of different fields: sociology, biostatistics, medical management, social medicine. Still more pronounced, bioethics is involved with a dual role, regulator and direct involvement in the strategy of the medical act

**Aim of the study.** To explore the multidimensional approach of patients with endocrine disorders. Optimizing the medical act by involving bioethics.

**Materials and methods.** Consulting of scientific, statistical-sociological and ethno-bioethical publications autochthonous and from abroad. The methods that were applied: analytical, descriptive, bioethical, and sociological.

**Results.** Endocrine disorders nowadays are a major health challenge and affect more and more people, and the indifference to this situation has an ever more pressing impact on the world's population. In case of endocrine disorders, the doctor-patient relationship must be a special, collaborative one. This is a particular relationship in the context of care of the contemporary patient with endocrine disorder. Nowadays there is a new form of ethical thinking in medicine - the bioethical one - which examines the problems in order to respect the life, autonomy and dignity of each individual throughout his life. Optimization of endocrine medical act through the involvement of bioethics has a favorable role for both the patient population and the general medical field.

**Conclusion.** 1. The patient with endocrine disorders is a real challenge to approach that requires a psychological, medical treatment throughout his life and a radical change in lifestyle. 2. Endocrine problems are both medical and social, requiring continuous education in multidisciplinary patient teams. 3. A significant importance has the involvement of bioethics in the endocrine medical act.

**Key words:** bioethics, endocrine disorder.

### **387. BIOETHICAL ASPECTS OF THE PLACEBO AND NOCEBO EFFECT IN THE MEDICAL ACT**

Author: **Ion Ernu**

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**Introduction.** The use of words, mimics and the promotion of the properties of some drugs have a considerable effect in medicine. Every doctor has this tool at his disposal. Patients are very receptive to both positive and negative suggestions. These reactions are emphasized in critical situations, such as the pre-operative period, serious illness or accident. Thus, being aware of the importance of these effects, we realize the need to correlate with the bioethics principles.

**Aim of the study.** To reveal the bioethical aspects of the placebo effect in the contemporary medical act.

**Materials and methods.** The study has used published scientific research, sociological studies and statistical data. Bioethical and sociological methods have been applied.

**Results.** Following the placebo treatment, due to positive thinking and trust in the doctor, not only the patient's mood changes, but also obvious psychosomatic effects are noticed, thus facilitating the medical act optimization.

At the same time, the nocebo side effect occurs when the patient feels worse after the doctor's wrong counseling and receiving a real or false pill, and not trusting in the therapy. The power of

thought and trust in medical staff works, as well as reversely. As a result of the researches, the force of the negative suggestion is much higher than the positive suggestion, namely 90% versus 50%.

**Conclusions.** The multilateral, impeccable doctor's preparation, the knowledge of the bioethical principles and their methodical application in the medical act, provide a more successful coefficient in the practice of the administered treatment.

**Key words:** bioethics, medicine, medical act, placebo, noceb.

### **388. THE IMPORTANCE OF MEDICAL CONFIDENTIALITY IN SEXUALLY TRANSMISSIBLE DISEASES**

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**Introduction.** Confidentiality is a fundamental feature of contemporary medicine, implicit in the physician-patient relationship. The notion of confidentiality is theoretically stipulated in any code of medical practice. Every human being has the right to confidentiality and respect for his private space. The fundamental reason and central role of confidentiality in venerology is to optimize the therapeutic relationship between physician and patient. This is the fundamental ethical principle of respecting the privacy of the person.

**Aim of the study.** To explore the relevance of the bioethical aspect in the medical act of sexually transmitted diseases.

**Materials and methods.** In the study, we used published scientific, national and international scientific data, statistical data. At the same time, the bioethical and sociological analysis was applied.

**Results.** Addressing the bioethical and medical-social aspects of sexually transmitted diseases reveals effective possibilities of optimizing the venerological medical act. The obtained results are due to the involvement of bioethical-medical theoretical references and correlation with sociological analyzes.

**Conclusions.** 1) Confidentiality requires constant observance unless it poses a threat to another person or to society. 2) The venerological medical act can be optimized by coordinating the actions performed on bioethics. 3) Bioethics remains an important component in optimizing venereal therapy.

**Key words:** bioethics, medical act, venerology, sexually transmitted diseases

### **389. BIOETHICAL CONFIGURATIONS OF SUICIDE**

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**Introduction.** Suicide has always meant a moment of different significance for philosophers, physicians, sociologist, and psychologists, etc., but also for the various religions or even for ordinary people. Some have accepted it as a form of liberating the man from the burden of life or the manifestation of the spirit of freedom, where other condemned and cursed the person who makes such an extreme act.

**Aim of the study.** Study and elucidation of socio-economic, medical and bioethical aspects in the case of suicidal tendencies, assessment of the specificity of cases of suicide.

**Materials and methods.** In the scientific paper were used as study material the statistical data of the National Bureau of Statistics of RM, of the Center for Health Management, reports from medical institutions and medical documentation. There were used systemic, statistical, and bioethical methods.

**Results.** An estimated 800,000 people have committed suicide annually throughout the world, but the attempts are 20 times more. Bioethics sees suicide as a form of aggression as a reflection of a social pathological state.

**Conclusions.** Nowadays, there are a number of theories that have attempted to explain the suicidal phenomenon, but all together, even individually, they haven't been able to fully get into the essence of this social phenomenon. It is quite difficult to find those things that defy the laws of nature, and that is because the suicidal act cancels out the instinct of survival with which we are born with and which is engraved in our genes. However, suicide is an extremely present and current phenomenon which, as days pass, extends like an epidemic among the population.

**Key words:** suicide, bioethics, suicide attempts, epidemic

### **390. BIOETHICAL ASPECTS THE EFFECT OF PLACEBO IN FAMILY MEDICINE**

Author: **Elena Braila**

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**Introduction.** The history of using the placebo effect for therapeutic purposes has seen success, but also incredible victories. Over the years, the use of the placebo effect with the therapeutic goal is crossed by ethical dilemmas, which still it a controversial topic. The placebo effect is recorded in a large number of patients and it is important to study it in accordance with bioethical principles.

**Aim of the study.** To reveal the conditions that increase the efficacy of placebo treatment in family medicine.

**Materials and methods.** Were used both scientific materials published in the country and abroad (internet sources, articles, monographs, surveys, etc.) and personal sociological observations. Were applied bioethical and sociological methods.

**Results.** According to observations efficacy of the treatment depends on the use of the placebo effect in the best conditions within the doctor-patient relationship. The patient's trust in the doctor is particularly important.

**Conclusion.** Relationship between doctor and patient is the basic condition to achieve the effect of placebo. The involvement of ethical components in the doctor and patient relationship optimizes the desired effects in the clinical use of placebo.

**Key words:** medicine, ethics, effect of placebo, relationship between doctor and patient

### **391. BIOETHICAL BENCHMARKS IN COUNSELING MEDICAL WORKERS, UNDER PALLIATIVE CARE SERVICES**

Author: **Veronica Gorbatovschi**

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**Introduction.** A well-developed medical system is one that cares about all categories of patients. But the way in which it takes care about severely ill patients shows maturity and empathy degree of a society. I will try to point out some of the most important bioethical challenges in palliative care and to identify solutions for them.

**Aim of the study.** Highlighting bioethical benchmarks that would lead to an improvement of therapy and to increasing patient's adherence to treatment.

**Materials and methods.** Clinical observation of patient under palliative care. Indirect questioning of patients. Interviewing and counseling of medical staff.

**Results.** 73% of patients who participated in the study have responded positively to a treatment based on individual's emotional requirements comparative to 42% of patients that was treated in a standard way.

**Conclusions.** Applying bioethical landmarks in palliative care services are very important for setting principles that must be followed by physician and also for customization of medical approach.

**Key words:** bioethics, palliative care, medicine, counseling

### 392. COUNSELING TECHNIQUES APPLIED IN DOCTOR-PATIENT RELATIONSHIP

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**Introduction.** Medical education is steadily facing the issue of modernizing the training process of the health system, aiming to train qualified and dynamic specialists, able to communicate effectively, think creatively and freely. When applying counseling techniques in relationship with patients, a future physician shall: be mindful of these various techniques; be empathic; communicate effectively; be able to control their emotions and show assertive behavior.

**Aim of the study.** Determine the level of training of future physicians for the application of counseling techniques in relationship with patients.

**Materials and methods.** The sample research consists of 50 subjects - future doctors graduate students, 6th year, specialty General Medicine. To achieve the research's purpose, four tools were used in the experiment: Questionnaire to determine the knowledge level of patient counseling techniques; Questionnaire to assess doctor-patient communication skills; Questionnaire "Are you an assertive person?"; Questionnaire for self-evaluation and level of emotional intelligence.

1. **Results.** The results describe the abilities of doctor-patient communication (empathic, assertive, comprehensive communication, active listening, emotional intelligence etc.). Thus, comprehensive communication skills were identified in 12% of the questioned students; 46% high level and 42% medium level; 50% of students scored an average level of assertiveness; 50% of students gained scores that reveal a high level of assertiveness; No results showed a low level of assertiveness; 44% of prospective doctors have achieved a "high" level of developed emotional intelligence and 54% have a "good" level of same skill; The "average" level was recorded for only one student, which represents 2%.

**Conclusions.** Basic counseling skills that a physician must hold include: consideration, empathic understanding, active listening, summarizing and verifying; non-critical acceptance; paraphrase, reflection, using various types of questions with a minimal promptitude, ability to provide feedback, using alternatives to questions; challenge, confrontation, work with defensive persons; solve problems.

**Key words:** dialogue, communication, doctor-patient relationship, counseling, counseling techniques

### 393. TREATMENT OF CONTEMPORARY ENDOCRINE DISEASES: THE IMPORTANCE OF RESPECTING BIOETHICAL PRINCIPLES

Author: **Vitalina Ojovan**

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**Introduction.** The prevalence of endocrine disorders is increasing worldwide. Type 2 diabetes and thyroiditis is increasingly prevailing in the Republic of Moldova. Contemporary endocrine medical service is successful both in special stationary, ambulatory and domestic conditions. In the administration of the permanent treatment, it is necessary to comply with appropriate bioethical principles.

**Aim of the study.** Revealing the particularities and role of the involvement of bioethical principles in the endocrine medical act.

**Materials and methods.** Scientific, statistical, sociological and bioethical publications from the country and abroad were consulted. There were used systemic, statistical, and bioethical methods.

**Results.** The study of type 2 diabetes and thyroiditis is a priority public health issue in the Republic of Moldova and the world. The inclusion of bioethics in medication involves the reassessment of some methodological principles in the realization of the medical act and the inclusion of innovative issues in the doctor-patient relations.

**Conclusions.** (1) The particularities of the endocrine medical act have been emphasized from the point of view of some bioethical principles. (2) The efficacy of the medication was improved by applying the bioethical aspects in the physician-patient relationship. (3) The most important bioethical principles are: confidentiality and therapeutic integrity.

**Key words:** medicine, bioethics, endocrinology

### 394. BIOETHICAL ASPECTS OF MEDICAL PRACTICE WITHIN THE CONTEXT OF GLOBAL MILITARY CRISIS

Author: **Valeriu Gonciaruc**

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**Introduction.** Human civilization has not yet overcome the stage of using military conflicts as a means of solving territorial, ideological and even current religious disputes that primarily result in millions of casualties. Therefore, medical practice that tends to minimize the number of deaths is carried out within an environment dominated by chaos and insecurity and therefore the bioethical aspects are the only source of regulation the human relationships.

**Aim of the study.** To highlight the bioethical aspects of medical practice in the context of military crisis and to rationalize the necessity of their updating in order to both optimize the medical care assistance and prevent the war crimes.

**Materials and methods.** Scientific articles on military medicine, bioethics, sociology and scientific philosophy, journalistic investigations have been referred to. The following methods have been applied within this study: ethical, bioethical and analytical ones.

**Results.** Medical bioethics should always be alert to preventing the influence of military or politically authoritarian persons who attempt to undermine the basic principles of medical care during the wartime for the reason of their own obscure purposes. Under military conditions, the medical staff are forced to follow the orders and perform job-related actions and duties that



might result in flagrant violation of the Code of Professional Conduct. Frequently, resistance to such orders may be inevitable and may lead to excessive personal loss (own lives). Although Medical ethics deplors the existing charges, it often comes down to a passive or silent disagreement. In recent years, however, biomedical ethics has become active in accepting and supporting these alienations against the accepted standards and values of health professions, accompanied by justification for the torture, a fact that involves lack of medical assistance for the war prisoners and their forced participation as experimental subjects in testing and modernization of weapons for mass destruction. All these obviously lack an informed consent that is considered a guarantee in respecting the human rights within medical practice.

**Conclusions.** Contrary to the popular opinion where military doctors appear as angels dressed in white coats that save human lives from the war ravages, they are in fact indispensable parts of their nation's war-making machine. As a result of the above mentioned, there is an urgent need to review the bioethical aspects of military medical practice, whereas the professional delimitation of the two aspects: both doctor and military, has become an issue of international importance in the context of a permanent increase of military conflicts worldwide.

**Key words:** biomedicaethics, medicalstaff, roleconflict

### **395. POSITIVE THINKING IN MEDICAL ACTIVITY: SOCIAL AND BIOETHICAL APPROACHES**

Author: **Leonida Chelmenciuc**

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**Introduction.** Positive thinking is an effective tool in the success of the medical act. Along with the performance against disease, positive thinking remains to be a huge potential, a solution generator. A substantial component in the development of an effective curative methodology through the involvement of positive thinking is the bioethical one.

**Aim of the study.** Revealing the socio-bioethical aspects in various diseases, as well as facilitating the medical act by applying the bioethical principles.

**Materials and methods.** Scientific research, native reference studies, normative basis, international reference publications, research and statistical data were used in the study. At the same time, the bioethical and sociological analysis was applied.

**Results.** The analysis of the cases of various pathologies, acquired or inborn, reveals the various and effective possibilities of managing the medical act by applying positive thinking. The optimizations obtained are due to the involvement of additional theoretical medical analyzes and the correlation of the medical act with the bioethical principles.

**Conclusions.** (1) Most of the pathologies recorded in different patient groups mainly require multilateral medication by applying different methods. (2) The medical act can be optimized by coordinating the actions of positive thinking, made on bioethical benchmarks. (3) Bioethics remains an important factor in mediating medication through various methods, including through the use of positive thinking.

**Key words.** Bioethics, medicine, positive thinking, pathology

### **396. THE CORRELATION OF ETHICAL AND DEONTOLOGICAL PRINCIPLES IN DENTAL PRACTICE**

Author: **Dina Tirchi**

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**Introduction.** Dental activity is a specific field of contemporary medicine that effectively correlates the curative and esthetic process. At the same time, the dental medical act itself includes particularities regarding the involvement of ethical and deontological principles. As the result of dental procedures improvement, the relevance of medical ethics and deontology becomes more and more significant.

**Aim of the study.** Identifying and presenting the peculiarities of correlation between ethical-medical and deontological principles in contemporary dental activity.

**Materials and methods.** Scientific publications on different aspects of ethical and deontological issues present in dentistry, sociological sources and statistical publications have been used. Structuralist, bioethical, and sociological methods have been applied.

**Results.** The dental activity is confronted with different therapeutic problems, doctor-patient relationships, appreciation of the results of the medical act, etc. In all these, quite often there are various ethical and deontological points of reference that, according to the development of the dental field, require a proper understanding and approach. Observations from published sources and some trends in statistical data reveal the role of the potential of ethics and deontology.

**Conclusions.** 1. The presence of ethical and deontological references in the medical act becomes more and more current as the result of dentistry's development. 2. The ethics and deontology in dentistry activity, with their own autonomous specificity have common topics of approach. 3. Involvement of ethics and deontology is catalyzed and more obvious as a result with the increase of aesthetics aspect in relation with the medical one which is needed for maintenance of oral health.

**Key words:** ethics, deontology, dentistry

### 397. OPTIMIZATION OF HEALTH PROMOTION IN THE WORK OF NURSES

Author: **Angela Baroncea**

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**Introduction.** The primary objective of promoting healthy lifestyle is to change behaviors, habits and traditions and make them healthier. This requires time and permanent health education. The central figures in health promotion are nurses. They can contribute to reach the health ideals at the community level, by systematic use of the means, techniques and methods necessary for the development of a genetic behavior.

**Aim of the study.** Assessment of nurses' contribution in optimizing the promotion of healthy lifestyle among population within the Health Centers at the community level.

**Materials and methods.** The study is a descriptive one, and the volume of sample is integral and selective. The whole study analyzed the activity of nurses in the promotion of community health at the community level in the Health Centers of three economic-geographic areas of the Republic of Moldova. 352 of nurses were assessed to identify the level of knowledge in the promotion of health within the Health Centers at the community level. The results of the study will allow the development of a set of measures to improve the health of the population by optimizing the nurses' contribution in promoting a healthy lifestyle at the community level.

**Results.** As a result of the three dimensional assessment of the general level of knowledge in the health promotion of the whole lot of population, at the community level, were obtained the following results: "1-4 points - low level of knowledge" was recorded at  $62.0 \pm 1.8\%$  of the total number of surveyed people, "5-7 points - average level of knowledge" - at  $23.0 \pm 1.6\%$  and "8-10 points - high level of knowledge" - at  $15.0 \pm 1.3\%$ . The general level of knowledge of nurses in health promotion was assessed by the "General knowledge level scale". According to this scale, the low level of knowledge, correspond to 1-4 points, registered a statistical weight of  $53.5 \pm 2.6\%$ , and the average and high level corresponded to 5-7 points,  $46.5 \pm 2.6\%$ , with an increase of (-13) and ( $t = 1.90$  and  $p < 0.05$ ), with a statistically significant difference. The results of the study confirm that the level of knowledge in promoting the health of the population and nurses is low.

**Conclusions.** The results of the study allowed us to develop two methodological elaborations and a guide for the promotion of the health at the community level. The study showed that the rising of the level of knowledge among nurses, can provide qualitative health promotion and medical screening services. This will help to prevent non-communicable chronic diseases among community populations and reduce medical outgoings.

**Key words:** optimization of health promotion, the level of knowledge in the field of health promotion, nurses' contribution to health promotion, the level of knowledge in health promotion.

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