Ministry of Health of the Republic of Moldova
State Medical and Pharmaceutical University
*Nicolae Testemitanu*
Medical Students and Residents Association
Scientific Association of Students and Young Doctors

# Abstract book

May 17-19, 2012
Chisinau, Republic of Moldova

MedEspera

## 4th International Medical Congress for Students and Young Doctors

The State Medical and Pharmaceutical University "Nicolae Testemiţanu" is a scientific and cultural center of continuous undergraduate and postgraduate education of doctors and pharmacists from the Republic of Moldova and abroad. It was founded based on the Institute of Medicine No.1 from Sankt Petersburg, evacuated during the IInd World War in Kislovodsk, and later on transferred to Chisinau together with students and the whole teaching staff under the name of State Institute of Medicine.

This institute started its activity on the 20th October, 1945. The foundation of the State Institute of Medicine from Chisinau served as impulse for developing the high medical education and consolidation of the health system from the country. Since 1990 the Institute carries the name of **Nicolae Testemiţanu** (1927 - 1986), famous scholar, talented teacher and educator, state man, skilled organizer in the field of public health, who brought a considerable contribution to the organization and development of the health protection system in our country; was a promoter of the national revival, of the sovereignty and independence of the Republic of Moldova, Man Emeritus.

In 1995, this institution was given a new name - the State Medical and Pharmaceutical University "Nicolae Testemiţanu" from the Republic of Moldova. At present, the State Medical and Pharmaceutical University "Nicolae Testemiţanu" is a high educational institution of international fame that trains medical and pharmaceutical personnel in conformity with the modern concepts and international exigencies of training and education of the future specialists. The adjustment to everything that is modern in the university education, the development and consolidation of the activities of research and innovation in the field of medicine, the rhythmic development of the clinic work - are 3 components determining the image of today s University.

Ministry of Health of the Republic of Moldova
State Medical and Pharmaceutical University
*Nicolae Testemitanu*
Medical Students and Residents Association
Scientific Association of Students and Young Doctors

# Abstract Book

## MedEspera 2012

### 4th International Medical Congress for Students and Young Doctors



May 17-19, 2012,

Chisinau, Republic of Moldova

61+378.4(478)
M 54

**Descrierea CIP a Camerei Naționale a Cărții**

„MedEspera", intern. medical congr. (4; 2012; Chisinău).

MedEspera : 4th Intern. Medical Congr. for Students and Young Doctors, May 17-19, 2012, Chisinau, Rep. of Moldova : Abstract Book. – Ch. : S. n., 2012 (Tipogr.-Sirius). – 274 p.

Antetit.: State Medical and Pharmaceutical Univ. „Nicolae Testemițanu", Medical Students and Residents Assoc., Sc. Assoc. of Students and Young Doctors.

300 ex.

**ISBN 978-9975-57-030-5.**
**61+378.4(478)**
**M 54**

**ISBN 978-9975-57-030-5.**

# CONTENTS

# Welcome by the President of Honour

The success in the activity of any teaching institution to a great extent is determined by the harmonious interdependence of customs considering the enrichment as well as the everlasting modernization of skills piled up throughout generations. Devoted to this type of encouragement element are the young generations of researchers at the State Medical and Pharmaceutical University Nicolae Testemițanu from Republic of Moldova, which through the initiation of International Congress for Students and Young Doctors MedEspera has managed to combine these two values by promoting the young talents in their enterprise of search and investigation.

This year we shall host and support with all the heartiness the 4th edition of the International Medical Congress for Students and Young Doctors MedEspera2012, which is happily accepted among traditional SMPhU's concerns and we consider it an expected event particularly it will train not only the medical country community but also messengers of medical schools from many states of the world.

Today, our country as well as Alma Mater, has encountered a new wave of development, where the former applied international standards give the best results namely through competitive medical specialists on the universal market and scientific researches with impact in the domain .

I would mention that this scientific forum is not only an index which affirms the affiliation of our institution to the international university community but also an unchallenged evidency of the evolution in the superior medical institution from Republic of Moldova.

MedEspera 2012 Congress offers the students, young doctors and pharmacists the chance to find out the dimensions of their own knowledge, and also the stimulus to fence with news from fundamental sciences, internal medicine, surgery, social medicine, stomatology and pharmacy. The Congress encourages the new generation to take part actively in the formation of medical future to demonstrate individual labour results, to express freely and well-reasonly the opinion grounded on the achieved researches. MedEspera Congress resorts to responsiveness, curiosity, civic activism and devotion from the part of young medical researchers from the country, also from those abroad, medicine must not present state, ethnic or cultural borders.

We are glad to realize the fact that this forum has become a take-off item for innovating ideas, transformed into long-lasting partnerships with other similar institutions from abroad. The international dimension of the event opens widely the horizon of the interuniversity scientific cooperations and tends to promote the originality, innovation current, contributing at the same time to the improvement of the local medical society and to the development of each participant in part.

The participation in mass of students, young doctors and researchers from the country and abroad to the Congress this year, is a proof of the growing importance of this scientific forum, its competitiveness on the international level, and also the affiliation of our University to the community of innovating universities, with evident tendencies of progress provided by disciples with a true interest for the scientific news in their professional formation.

***Dear young colleagues!***

I have the greatest pleasure to wish you, on behalf of SMPhU Nicolae Testemițanu academic community, a successful achievement of the Congress programme, beautiful and unrepeatable experiences along with new and unique persons from your group of friends as well as the best impressions and memories about our country and Alma Mater, which feels the youth's pulse and knows that all the young people are the hope for a prosperous future!

Good Luck!

*Rector Ion ABABII*
*M.D., Ph.D., Professor,*
*Academician*

Succesul activității oricărui așezământ de instruire, în mare măsură, este determinat de îmbinarea armonioasă a tradițiilor cu înmulțirea și perena modernizarea a experienței acumulate de-a lungul generațiilor. Fideli acestui principiu de suport le sunt și generațiile de tineri cercetători de la Universitatea de Stat de Medicină și Farmacie "Nicolae Testemițanu" din Republica Moldova, care prin inițierea Congresului Internațional pentru Studenți și Tineri Medici *MedEspera* a reușit să combine aceste două valori, prin promovarea tinerelor talente în inițiativele lor de căutare și investigare.

În acest an vom găzdui și susține cu toată cordialitatea cea de-a 4-a ediție a Congresului Internațional pentru Studenți și Tineri Medici *MedEspera 2012*, pe care o acceptăm cu drag printre preocupările de tradiție ale USMF și o considerăm un eveniment așteptat, mai ales că acesta va antrena nu doar comunitatea medicală din țară, dar și soli ai școlilor medicale din multe țări ale lumii.

Astăzi, țara noastră și în mod implicit Alma Mater, cunoaște un val nou de dezvoltare, în care standardele internaționale aplicate anterior dau roade, notamente prin cadre medicale competitive pe piața mondială și cercetări științifice cu impact în domeniu. Tind să remarc că acest for științific nu este doar un indicator care afirmă apartenența instituției noastre la comunitatea universitară internațională, dar și o evidență incontenstabilă a dinamicii învatământului superior medical din Republica Moldova.

Congresul *MedEspera2012* oferă studenților, tinerilor medici și farmaciști șansa de a cunoaște dimensiunile propriilor cunoștințe, dar și imboldul de a se duela cu noutățile din domeniul științelor fundamentale, medicinei interne, chirurgiei, medicinei sociale, stomatologiei și farmaciei. Congresul încurajează noua generație să participe activ în formarea viitorului medicinei, să demonstreze roadele muncii individuale, precum și să-și exprime în mod liber și argumentat opinia fundamentată pe cercetările efectuate. Congresul *MedEspera* face astfel apel la receptivitate, curiozitate, activism civic și devotament din partea tinerilor cercetători medicali din țară, dar și a celor de peste hotarele țării, or medicina nu trebuie sa prezinte granițe statale, etnice sau culturale.

Suntem bucuroși să constatăm faptul că acest for a devenit un punct forte de decolare pentru idei inovatoare, transformate în parteneriate durabile cu alte instituții similare de peste hotare. Dimensiunea internațională a evenimentului deschide larg orizontul cooperărilor științifice interuniversitare și tinde să promoveze curentul originalității, inovației, contribuind totodată la îmbunătățirea societății medicale locale și iminent la dezvoltarea fiecărui participant în parte. Participarea în masă a studenților, tinerilor medici și cercetători din țară și de peste hotare la Congres, este dovadă a importanței crescânde a acestui for științific, a competivității acestuia pe plan internațional, dar și a apartenenței Universității noastre la comunitatea universităților novatoare, cu tendințe vădite de progres asigurate de discipoli cu un interes viu pentru noutățile științifice în formarea lor profesională.

***Dragi tineri colegi !***

Am deosebita plăcere să vă urez, în numele comunității academice a USMF "Nicolae Testemițanu", o realizare cât mai de succes a programului Congresului, experiențe frumoase și irepetabile alături de figuri noi și unice cercului vostru de prieteni, a camarazilor de idei, precum și cele mai plăcute impresii și amintiri despre țara noastră și Alma Mater, care simte pulsul tinereții și știe că tinerii sunt speranța unui viitor prosper!

Într-un ceas bun !

*Rector Ion ABABII*
*Profesor universitar, doctor habilitat,*
*Academician al AȘM*

# Welcome by the Organizing Committee

***Dear collegues, distinguished guests !***

*We have the special honour and pleasure to host the 4th edition of the International Medical Congress for Students and Young Doctors MedEspera, within the State Medicine and Pharmaceutical University Nicolae Testemițanu.*

*The organization of the Congres MedEspera started from the wish and the necessity of students and young doctors to prove their research medical skills and to communicate the obtained results to their colleagues from inside and outside the country.*

*So, this way, the Congress MedEspera became a notorious event for the medical community in the Republic of Moldova and from abroad, succeeding to gather, each time, more and more students, young doctors and medical researchers thirsty for knowledge and eager to share their achievements to their comrades of ideas.*

*This year, along the length of the Congress, we have prepared a various scientific program, as well a diverse cultural program, which, we hope, will ensure the success of the organized event and will leave you with the best possible memories about our University- institution of valus and traditions, as well as about the city of Chisinau - „green" city, city of good people and beautiful monuments.*

*The Organizing Committee of the MedEspera 2012 Congress will do everything possible for these 3 days of Congress to remain memorable.*

*Dare to know and learn the latest news in medicine during the 4th International Medical Congress for Students and Young Doctors MedEspera 2012 !!!*

***The Organizing Committee***

## President of Honor

**Ion Ababii** - M.D., Ph.D., Professor, Academician
Rector of the State Medical and Pharmaceutical University "Nicolae Testemițanu"

## Organizing Committee

Head of Organizing Committee: **Costru-Tașnic Elena**

President of Medical Students and Residents Association: **Abraș Marcel**

Executive Secretary: **Tașnic Mihail**

**Members:**

**Juncu Victor, Țugui Elena, Bobeica Maria, Iacubițchii Vitalie, Socolov Alexandru, Cîvîrjic Irina, Pavlovski Iana, Catereniuc Daniela, Cobîlețchi Roman, Dvornic Dorin, Procopciuc Vitalie, Gîncu Drăgălina, Crăciun Alina, Munteanu Dumitru, Vudu Victoria, Cîvîrjic Ivan, Șchiopu Victor, Lazăr Florin, Anton Mihail, Gudumac Veronica, Pavlovschi Pavel, Usturoi Igor, Vasian Maxim, Pavlovschi Ian, Brunchi Lucia, Butnaru Mihaela, Vladicescu Cristina, Tașnic Alina**

## Chairman of the Editorial Board

**Prisăcari Viorel** - M.D., Ph.D., Professor
Vice Rector for Scientific Activity, SMPhU "Nicolae Testemițanu"

**Members:**

**Catereniuc Ilia,**
M.D., Ph.D., Professor

**Nistreanu Didina,**
Ph.D., Associate Professor

**Revenco Valeriu,**
M.D., Ph.D., Professor

**Guțu Eugen,**
M.D., Ph.D., Professor

**Mișin Igor,**
M.D., Ph.D., Professor

**Lupan Ion,**
Ph.D., Professor

**Nicolau Gheorghe,**
Ph.D., Professor

**Scerbatiuc Dumitru,**
Ph.D., Professor

**Topalo Valentin,**
Ph.D., Professor

**Cemortan Igor,**
M.D., Ph.D., Associate Professor

**Corlăteanu Alexandru,**
M.D., Ph.D., Associate Professor

**Lisnic Vitalie,**
M.D., Ph.D., Associate Professor

**Baltaga Ruslan,**
M.D., Ph.D., Associate Professor

**Uncu Livia,**
M.D., Ph.D., Associate Professor

**Hacina Tamara,**
M.D., Ph.D., Associate Professor

**Danilov Lucian,**
M.D., Ph.D., Assistant lecturer

**Ungureanu Victor,**
M.D., Assistant lecturer

**Cardaniuc Corina,**
M.D., Ph.D., Associate Professor

**Cojocaru Stela,**
M.D., Ph.D., Associate Professor

**Holban Tiberiu,**
M.D., Ph.D., Associate Professor

**Vudu Lorina,**
M.D., Ph.D., Associate Professor

**Para Ala,** M.D., Ph.D., Associate Professor

**Eşanu-Dumnazev Daniela,**
Ph.D., Associate Professor

**Panciuc Liliana,**
Superior Lecturer

**Costin Rodica,**
Superior Lecturer

**Ojog Valeriu,**
Superior Lecturer

**Ciobanu Nicolae,**
Ph.D., Associate Professor

**Scutari Carina,**
Ph.D., Associate Professor

**Calalb Tatiana,**
Ph.D., Associate Professor

**Adauji Stela,**
Ph.D., Associate Professor

**Cheptănaru Constantin,**
Ph.D., Associate Professor

**Solomon Oleg,**
Ph.D., Associate Professor

# ABSTRACTS

## MEDICAL FUNDAMENTAL SCIENCES SECTION

### MORPHOLOGICAL CHANGES IN KIDNEYS IN EXPERIMENTAL HYPERTHYREOSIS

**Bohonyuk B.**

*Academic adviser:* Pasyechko N., M.D., Ph.D., Professor, State Medical University "I. Ya. Horbachevsky", Ternopol, Ukraine

**Introduction:** The great interest of investigators to further study of the structure and functional changes of the thyroid gland in the conditions of different pathologies is based on significant increase of the diseases of thyroid gland. Effect of thyroid hormones on metabolic processes in kidney cells with lesions of the thyroid gland leads to changes in their functional state.

**Purpose:** Investigation of histological changes in kidneys at different duration of experimental thyreotoxicosis.

**Methods and materials**: The study was performed on 24 noninbread albino rats with average weight 150-220g. Animals were divided into 2 groups of 12 animals each. Simulation of hyperthyroidism was conducted by intragastric administration of L-thyroxine in dose of 200 mcg / kg daily for 14 (1st group) and 28 (2nd group) days. Morphological studies were carried out on the14th and 28th days after the start of the experiment for which the pieces from the middle of the kidney were cut out and treated by conventional methods.

**Results:** Histologic examination of the kidney tissue on the 14th experiment day showed structural changes of the kidneys. Some glomeruli in the cortical layer were expanded, their capsule partially thinned. The space of the capillaries wasn't visualised due to the narrowing of the capillaries and degenerative changes in endothelial cells. Individual glomeruli were wrinkled, others - somewhat expanded by the accumulation of serous fluid in the space of the capsule and proliferative changes in the structure of the glomerulus were observed. In some areas of the cortex glomeruli were collapsed along with severe degenerative changes in the tubular apparatus. Lymphocytes and hystiocytes infiltration of stroma was weaked expressed.

The spaces of proximal and distal tubules were enlarged in most cases, containing a moderate amount of serous fluid and isolated red blood cells. Spaces of proximal direct tubules in some areas were narrowed due to moderate degenerative changes of the epithelium cells. Besides, epithelial cells were in the stage of vacuolar dystrophy, which led to an increase of their size, especially of the cytoplasm. Nuclei of epithelial cells were visualised in all cells, but they were placed atypically. Medium-caliber vessels were expanded and full-blooded, but extravasations were not present.

Histological examination of kidney tissue on the 28th day of experiment revealed that expanded glomerular capsule was mainly due to the swelling and partial hyperplasia of structural elements. Its spaces were filled with serous fluid, which partly led to the distortion of vascular structures. Vacuolisation of the cytoplasm was caused by the swollen capsule epithelium, foamy cytoplasm and hyperchromatic nuclei.

The changes in renal medulla were clearly detected. Spaces of the distal and proximal tubules were markedly dilated, partially filled with serous fluid, among which necrotic desquamated epitheliocytes

# ABSTRACTS

## MEDICAL FUNDAMENTAL SCIENCES SECTION

### MORPHOLOGICAL CHANGES IN KIDNEYS IN EXPERIMENTAL HYPERTHYREOSIS

**Bohonyuk B.**

*Academic adviser:* Pasyechko N., M.D., Ph.D., Professor, State Medical University "I. Ya. Horbachevsky", Ternopol, Ukraine

**Introduction:** The great interest of investigators to further study of the structure and functional changes of the thyroid gland in the conditions of different pathologies is based on significant increase of the diseases of thyroid gland. Effect of thyroid hormones on metabolic processes in kidney cells with lesions of the thyroid gland leads to changes in their functional state.

**Purpose:** Investigation of histological changes in kidneys at different duration of experimental thyreotoxicosis.

**Methods and materials**: The study was performed on 24 noninbread albino rats with average weight 150-220g. Animals were divided into 2 groups of 12 animals each. Simulation of hyperthyroidism was conducted by intragastric administration of L-thyroxine in dose of 200 mcg / kg daily for 14 (1st group) and 28 (2nd group) days. Morphological studies were carried out on the14th and 28th days after the start of the experiment for which the pieces from the middle of the kidney were cut out and treated by conventional methods.

**Results:** Histologic examination of the kidney tissue on the 14th experiment day showed structural changes of the kidneys. Some glomeruli in the cortical layer were expanded, their capsule partially thinned. The space of the capillaries wasn't visualised due to the narrowing of the capillaries and degenerative changes in endothelial cells. Individual glomeruli were wrinkled, others - somewhat expanded by the accumulation of serous fluid in the space of the capsule and proliferative changes in the structure of the glomerulus were observed. In some areas of the cortex glomeruli were collapsed along with severe degenerative changes in the tubular apparatus. Lymphocytes and hystiocytes infiltration of stroma was weaked expressed.

The spaces of proximal and distal tubules were enlarged in most cases, containing a moderate amount of serous fluid and isolated red blood cells. Spaces of proximal direct tubules in some areas were narrowed due to moderate degenerative changes of the epithelium cells. Besides, epithelial cells were in the stage of vacuolar dystrophy, which led to an increase of their size, especially of the cytoplasm. Nuclei of epithelial cells were visualised in all cells, but they were placed atypically. Medium-caliber vessels were expanded and full-blooded, but extravasations were not present.

Histological examination of kidney tissue on the 28th day of experiment revealed that expanded glomerular capsule was mainly due to the swelling and partial hyperplasia of structural elements. Its spaces were filled with serous fluid, which partly led to the distortion of vascular structures. Vacuolisation of the cytoplasm was caused by the swollen capsule epithelium, foamy cytoplasm and hyperchromatic nuclei.

The changes in renal medulla were clearly detected. Spaces of the distal and proximal tubules were markedly dilated, partially filled with serous fluid, among which necrotic desquamated epitheliocytes

were found. There were markedly pronounced dystrophic changes of epithelial tubules. In the proximal tubules the phenomena of hyaline-drop dystrophy was observed, vacuolar dystrophy rarely. There was perivascular infiltration by lymphocytes and plasmocytes. The lympho-hystiocyties infiltration was observed around the glomerulus. The vacuolar degeneration of epithelial cells from the side of the direct distal tubules was observed.

The stroma of the renal cortex and medulla was swollen; the phenomena of lymphocyte infiltration were present. Vessels were moderately dilated, full of erythrocytes, some areas was with small extravasation were present. Most of the arterioles were normal, but sometimes plasma impregnation was detected.

**Conclusion:** In experimental hyperthyreosis microcirculation lesions and development of degenerative changes of the structural components of epithelial cells of proximal and distal tubules in the kidney were revealed.

## CHANGE OF C-REACTIVE PROTEIN AND TUMOR NECROSIS FACTOR-α LEVELS IN DIABETES MELLITUS TYPE 2 AND L-ARGININE-L-GLUTAMATE

**Shved M., Chernukhina O., Mazur L.**

*Academic adviser:* Shved M., M.D., Ph.D., Professor, State University of Medicine „I.Ya. Horbachevsky", Ternopol, Ukraine

The **Purpose** of our study was to determine C-reactive protein (CRP) and tumor necrosis factor- α (TNF-α) levels in patients with nonalcoholic fatty liver disease (NAFLD) in type 2 diabetes mellitus and their correction with NO synthesis precursor L-arginine-L-glutamate.

**Materials and methods:** We examined 30 patients with type 2 diabetes aged 35 to 65, who had symptoms of NAFLD. The functional state of liver, changes in plasma levels of pro-inflammatory cytokine TNF-α and CRP were evaluated in patients treated with L-arginine-L-glutamate.

**Results:** It was determined that in patients with type 2 diabetes and NAFLD the levels of TNF-α and CRP were significantly higher than in patients with type 2 diabetes and healthy subjects. A statistically significant decrease of TNF-α and CRP levels was established 8-10 days after the beginning of administration of L-arginine-L-glutamate in patients with type 2 diabetes and NAFLD as compared to the control group (patients with type 2 diabetes who did not take L-arginine-L-glutamate). The treatment was followed by improvement of functional liver tests (bilirubin, general cholesterol, triglycerides, β-lipoproteins, alaninaminotransferase, and general protein) and liver ultrasound picture.

**Conclusions:** Thus, administration of the NO-synthesis precursor L-arginine-L-glutamate in patients with diabetes mellitus type 2 and NAFLD contributes to the decrease of systemic inflammation, in particular - C-reactive protein and tumor necrosis factor- α and improvement of functional liver tests.

**Key words:** C-reactive protein, tumor necrosis factor- α, Diabetes Mellitus, L-arginine-L-glutamate.

## INFLUENCE OF ESSENTIAL PHOSPHOLIPIDS ON THE LIVER STRUCTURE OF WHITE RATS IN EXPERIMENTAL HYPERTHYREOSIS

**Svystun I.**

*Academic adviser:* Pasyechko N., M.D., Ph.D., Professor, State University of Medicine "I. Ya. Horbachevsky", Ternopol, Ukraine

**Introduction:** Essential phospholipids (EPL) play a universal role in the human body as a source of components of cell membranes and intracellular organelles. Numerous studies have found that except of hepatoprotective properties, EPL are able to reduce the degree of oxidation stress. The important role of free radical processes in the pathogenesis of hyperthyroidism and the relation in the functioning of liver and thyroid gland are known.

**Purpose:** to study the effects of essential phospholipids on the liver structure in hyperthyroid rats.

**Methods and materials:** The study was conducted on noninbred albino rats weighing 180 - 220 g, and divided into 3 groups: 1st control group (6 animals) - intact rats, 2nd group (6 animals) - rats with experimental thyrotoxicosis, induced by intragastric injection of L-thyroxine (200 mcg/kg a day for 28 days); the 3rd group (9 animals) – hyperthyroid rats, additionally injected with essential phospholipids (80 mg/kg a day from 14 to 28 days). Hyperthyroidism was induced on the 14th day of experiment.

**Results:** Morphological structure of the liver in experimental thyrotoxicosis on the 14$^{th}$ day was characterized by impairments violation of trabecular structure of liver lobules. Hepatocytes with hypertrophic nuclei were detected; some cells had features of lamellar degeneration. Unicellular and focal necrosis of hepatocytes, acidophilic cells like Councilman bodies were found. Hepatocytes bore signs of anisonucleosis and anisocytosis. The changes increased with hyperthyroidism duration: on the 28$^{th}$ day there was a significant damage to the structure of liver lobules, changes spread diffusely, necrotic hepatocytes, signs of balloon-degeneration of cytoplasm, karyopyknosis and karyolysis developed.

In case of using EFL on the 28$^{th}$ day of experiment moderate changes in structural components of the hepatic lobules were detected. The cells were normochromic, had round nuclei with a distinct nucleolus. No pronounced signs of eosinophilic degeneration, as in the comparison group were found. Signs of balloon-degeneration were revealed only in some cells. Cells with pyknotic heterochromatic nuclei were less common. Only isolated cells became necrotic with signs of karyolysis or without nuclei, they didn't form large areas of coagulative necrosis.

**Conclusion:** The results of the study showed, that essential phospholipids in rats with experimental hyperthyreosis had protective properties for hepatocytes, demonstrated by a significant reduction in their damage.

**Key words**: hyperthyreosis, essential phospholipids.

## PARAMETERS OF THYROID HOMEOSTASIS IN PATIENTS WITH CHRONIC DIFFUSE LIVER DISEASES DEPENDING ON TYPE 1 DEIODINASE GENE POLYMORPHISM

**Chympoy K., Palibroda N., Moskaliuk I.**

*Academic adviser:* Pashkovska N., M.D., Ph.D., Professor, Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction:** Deiodinase enzymes are important in the control, of cellular thyroid activity. It was found that certain allelic variants of type I deiodinase (*DIO1*) gene may increase the impairment of thyroid gland function. Still it is not clear how polymorphism of this gene affects the development of thyroid dysfunction in patients with chronic diffuse liver diseases (HDLD).

**Purpose:** to study the features of thyroid homeostasis in patients with HDLD depending on A/C DIO1 gene polymorphism.

**Materials and methods:** The study involved 50 patients with chronic hepatitis and liver cirrhosis.

A/C DIO1 gene polymorphism and Pro197Leu - GPX1 gene were studied by means of extraction of genomic DNA from peripheral blood leukocytes with subsequent amplification of polymorphic sites by PCR with the programmable amplificator «Amply-4L» («Biocom», Moscow) with individual temperature program for each gene primer.

DNA extraction was carried out using reagent "DNA - sorbets - B" option 100 (Russia) according to instructions. Samples were prepared for PCR using a set of «АмплиСенс – 200 - 1» (Russia). For discrimination of alleles of the DIO1 gene endonuclease restriction Bcl I was used ("СибЭнзим", Russia).

Depending on the distribution of A / C DIO1 gene polymorphism patients were divided into three groups: AA-genotype carriers (17 patients), AC-genotype carriers (24 patients) and AS-genotype carriers (8 patients).

Features of thyroid homeostasis were studied by determining serum free thyroxine (T4), free triiodothyronine (T3) and thyroid - stimulating hormone (TSH) and calculating the coefficient of the peripheral conversion of free thyroid hormones (T3/T4).

**Results and discussion**: The level of TSH in serum of patients with HDLD was not significantly changed depending on the DIO1 gene polymorphism.

A higher level of T3 was found in carriers of the CC-genotype: in 46.6% ($P < 0.001$) comparing with AA-genotype and 31.6% ($P < 0.01$) comparing with AC-genotype.

Content of serum T4 in patients with homozygous A-allele carrier DIO1 gene significantly exceeded the corresponding parameters in patients with CC-genotype (31.3%, $P < 0.05$).

T3/T4 coefficient was also significantly changed depending on the DIO1 gene polymorphism. In the group of patients with CC-genotype it was 1.5 times higher ($P < 0.05$) than in patients with AA-genotype and 1.3 ($P < 0.05$) times than in patients with AC-genotype.

**Conclusion:** Carriage of the C-allele of DIO1 gene is associated with increase of DIO1 function, which shows growth of T3/T4 coefficient and T3 level, reduction of T4 level. A-allele of the DIO1 gene is associated with a decrease in T3/T4 coefficient, T3 level, an increase in T4 level in blood of patients with HDLD.

## CATALYTIC PROPERTIES OF ANTIBODIES IgG IN PATIENTS WITH MULTIPLE SCLEROSIS

**Ermakov E.**

*Academic adviser:* Smirnova L., M.D., Ph.D.; Buneva V., Ph.D., Institute for Fundamental Biology and Medicine, Tomsk, Russian Federation

**Introduction:** The research of multiple sclerosis (MS) pathogenesis is one of the most serious problems of modern medicine. MS is a clinically heterogeneous chronic demyelinating disease of the nervous system of unknown etiology. In MS, increased concentrations of IgG, which are found in the specific antibody (Ab) against the various components of myelin, antibodies to DNA, antibodies to other structures and tissues are present. Studies of the last decade have led to the discovery of the ability of antibodies to catalyze many different chemical reactions. Such antibodies possessing a catalytic activity have been termed abzymes. In patients with autoimmune diseases a high DNA hydrolyzing activity of AT has been revealed.

**Materials and methods:** The study involved 50 patients with chronic hepatitis and liver cirrhosis.

A/C DIO1 gene polymorphism and Pro197Leu - GPX1 gene were studied by means of extraction of genomic DNA from peripheral blood leukocytes with subsequent amplification of polymorphic sites by PCR with the programmable amplificator «Amply-4L» («Biocom», Moscow) with individual temperature program for each gene primer.

DNA extraction was carried out using reagent "DNA - sorbets - B" option 100 (Russia) according to instructions. Samples were prepared for PCR using a set of «АмплиСенс – 200 - 1» (Russia). For discrimination of alleles of the DIO1 gene endonuclease restriction Bcl I was used ("СибЭнзим", Russia).

Depending on the distribution of A / C DIO1 gene polymorphism patients were divided into three groups: AA-genotype carriers (17 patients), AC-genotype carriers (24 patients) and AS-genotype carriers (8 patients).

Features of thyroid homeostasis were studied by determining serum free thyroxine (T4), free triiodothyronine (T3) and thyroid - stimulating hormone (TSH) and calculating the coefficient of the peripheral conversion of free thyroid hormones (T3/T4).

**Results and discussion**: The level of TSH in serum of patients with HDLD was not significantly changed depending on the DIO1 gene polymorphism.

A higher level of T3 was found in carriers of the CC-genotype: in 46.6% ($P < 0.001$) comparing with AA-genotype and 31.6% ($P < 0.01$) comparing with AC-genotype.

Content of serum T4 in patients with homozygous A-allele carrier DIO1 gene significantly exceeded the corresponding parameters in patients with CC-genotype (31.3%, $P < 0.05$).

T3/T4 coefficient was also significantly changed depending on the DIO1 gene polymorphism. In the group of patients with CC-genotype it was 1.5 times higher ($P < 0.05$) than in patients with AA-genotype and 1.3 ($P < 0.05$) times than in patients with AC-genotype.

**Conclusion:** Carriage of the C-allele of DIO1 gene is associated with increase of DIO1 function, which shows growth of T3/T4 coefficient and T3 level, reduction of T4 level. A-allele of the DIO1 gene is associated with a decrease in T3/T4 coefficient, T3 level, an increase in T4 level in blood of patients with HDLD.

## CATALYTIC PROPERTIES OF ANTIBODIES IgG IN PATIENTS WITH MULTIPLE SCLEROSIS

**Ermakov E.**

*Academic adviser:* Smirnova L., M.D., Ph.D.; Buneva V., Ph.D., Institute for Fundamental Biology and Medicine, Tomsk, Russian Federation

**Introduction:** The research of multiple sclerosis (MS) pathogenesis is one of the most serious problems of modern medicine. MS is a clinically heterogeneous chronic demyelinating disease of the nervous system of unknown etiology. In MS, increased concentrations of IgG, which are found in the specific antibody (Ab) against the various components of myelin, antibodies to DNA, antibodies to other structures and tissues are present. Studies of the last decade have led to the discovery of the ability of antibodies to catalyze many different chemical reactions. Such antibodies possessing a catalytic activity have been termed abzymes. In patients with autoimmune diseases a high DNA hydrolyzing activity of AT has been revealed.

**Purpose:** To study the DNA-ase and catalase activity of IgG, isolated from the blood plasma of patients with multiple sclerosis.

**Materials and Methods:** Peripheral blood serum of patients with MS was used in the study. IgG was isolated by affinity chromatography on columns of Protein G-Sepharose. DNA-ase activity was determined by the degree of conversion of supercoiled form of pBluescript plasmid DNA into the ring, relaxed and linear forms. The reaction mixture volume of 15 ml contained: 20 mMtris-HCl, pH 7.5, 5 mM $MgCl_2$, 10-20 mg / ml pBluescript DNA, and 0.1 - 0.2 mg / ml of antibody. After incubation for 2 hours at 35°C the reaction mixture was added 5 ml buffer solution of 4X, containing 1% SDS, 30% glycerol, 30 mM EDTA, 0.1% bromophenol blue. Electrophoresis was performed in 1.2% agarose gel. DNA in the gel was stained with ethidium bromide solution (0.5 mg / ml). Determination of catalase activity was performed spectrophotometrically ($\lambda$ = 240 nm.) On a spectrophotometer Specord. The reaction mixture consisted of 30 mM $H_2O_2$ solution at 50 mM phosphate buffer (pH = 7.0) of 1600 ml and 70 ml of a solution containing IgG in potassium phosphate buffer (pH 7.0).

**Results and conclusions:** The study of the catalytic activity of IgG in multiple sclerosis patients revealed a high percentage of hydrolysis of DNA, reaching 100% in some patients. Hydrolysis of DNA Ig G, isolated from blood of healthy individuals does not exceed 1-2%.

The ability of antibodies in multiple sclerosis patients to split hydrogen peroxide was first discovered. IgG, isolated from blood of healthy individuals did not have this ability. All studied antibodies were tested for homogeneity. The study of the catalytic properties of AT patients with multiple sclerosis will contribute to understanding the mechanism of pathogenesis of this disease.

## CYTOKINE GENE POLYMORPHISMS AND ASTHMA SUSCEPTIBILITY, SEVERITY AND ASSOCIATED ALLERGIC MANIFESTATIONS IN MOLDOVAN CHILDREN

**Cirstea Olga, Vasilos Liubov, Cojocaru Ala, Horodişteanu-Banuh Adela, Aramă Marina, Savoschin Dorina**

State Medical and Pharmaceutical University „Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Asthma is a complex inflammatory disease, caused by the interaction of genetic and environmental factors, and its management requires understanding of its various pathogenesis and control mechanisms. Cytokines and other inflammatory mediators are important factors in asthma pathophysiology. The reported racial and/or ethnic differences in asthma-related loci define the importance of the candidate gene research in ethnically diverse populations. The study was aimed to investigate the association between cytokine gene polymorphisms asthma in a sample of Moldovan patients and controls.

**Methods:** The sample comprised 90 individuals with asthma, aged from 5 to 17 years (mean ±SEM age of 10,9±0,4 years), 51 males and 39 females, who were randomly selected from a group of asthmatic children referred to the Allergy Clinic of the Research Institute for Maternal and Child Healthcare, Chisinau, Moldova, during the years 2009-2010. The control group included 90 healthy children, matched by sex and age with patients' group (mean age 13,5±0,2), without respiratory symptoms or history of asthma and allergy. Asthma was defined according to the criteria of the Global Initiative for Asthma (GINA). A complete clinical history, physical examination, and pulmonary function test (PFT) in a standard fashion were performed for all the subjects. TNF-α G-308A, IL-4 C-590T and IL-4Rα Arg551Gln polymorphisms were evaluated by polymerase chain reaction.

**Results:** The genotypes frequency for TNF-α, IL-4, and IL-4Rα were equally distributed in the patient group in comparison with the controls. However, there were significant differences for IL-4 C-590T gene between the subgroups of asthmatics with different degree of the disease severity. Thus, *IL-4* CT+TT at position -590 was significantly overrepresented in children with severe asthma in comparison with those with the moderate one (53,8% in severe asthma vs 25,0% in moderate asthma; $\chi^2$=2,7; gl=1; p=0,086). The same difference was found for the T allele (minor allele): 34,6% in severe asthma vs 12,5% in patients with moderate asthma ($\chi^2$=5,3; gl=1; p<0,05). The study showed that the homozygous genotype *TNF-α* GG at position -308 has a protective role, being significantly more frequently identified in children with solitary form of asthma compared with those with allergic triad (86,2% vs 60,0%, respectively; $\chi^2$=3,88; gl=1; p<0,05). Functionally compromised genotypes *TNF-α* GA+AA at position -308 were found more frequently in children with asthma associated with other allergic symptoms (40,0% in allergic triad and 55,6% in asthma cases associated with atopic dermatitis vs 13,8% solitary asthma, p<0,05).

**Conclusions:** The results of our study suggested an association between the IL-4 polymorphism at position -590 and asthma severity, and the association of the functionally compromised genotypes of the TNF-α polymorphism at position -308 with different clinical phenotypes of asthma in Moldovan children.

**Key words**: asthma, child, IL-4, IL-4Rα, TNF-α, gene, polymorphism, phenotype.

## THE INFLUENCE OF BRONCHOALVEOLAR AND CIRCULATING TUMOR NECROSIS FACTOR-ALPHA ON APOPTOSIS IN DIFFERENT MODELS OF LUNG INJURY

**Marushchak M., Krynytska I.**

*Academic adviser:* Hryshchuk L., M.D., Ph.D., Professor; Klishch I., M.D., Ph.D., Professor, State Medical University "I. Ya. Gorbachevsky", Ternopol, Ukraine

Cytokines are involved in a variety of lung diseases, but their pathogenetic role in programmed cell death is still controversial. This study tests whether the activation of an 'extrinsic' pathway to cell death is mediated by bronchoalveolar and circulating tumor necrosis factor (TNF)-alpha.

Nonlinear male rats weighing 200-230 g were used in all the experiments. For modeling of acid aspiration-induced acute lung injury anesthetized rats underwent tracheostomy and insertion of a fine-bore cannula into the anterior segment of the left lung. This was followed by the instillation of either 1.0 mL/kg HCI, pH 1.2 (n = 12) or 1.0 mL/kg saline in control rats (n = 12). All animals were studied at 6-hour after acid aspiration. For modeling of hepatopulmonary syndrome anesthetized rats underwent common bile duct ligation (CBDL) (n = 12). Sham rats underwent mobilization of the common bile duct without ligation (n = 12). All the animals were studied at 31-day after CBDL or sham operation. Bronchoalveolar lavage (BAL) and blood serum were analyzed for TNF- levels in pg/ml using commercially available ELISA kits. The level of apoptosis was analyzed with the help of Annexin V-FITS and propidium iodide using Beckman Coulter flow cytometer.

By 6 h after acid aspiration TNF-alpha values were significantly higher than in control group (in the blood serum: 17,06±1,91 pg/ml vs 11,54±0,59 pg/ml, p<0,001, in the BAL: 16,39±0,80 vs 1,73±0,13, p<0,001). It was also a significant increase in the number of early apoptotic cells present (in the blood serum: 0,63±0,14 vs 0,45±0,03, p<0,001, in the BAL: 2,41±0,15 vs 0,61±0,05, p<0,001). At 31-day after CBDL TNF-alpha values were also significantly higher than in control group (in the blood serum: 46,36±2,33 pg/ml vs 10,35±1,90 pg/ml, p<0,001, in the BAL: 11,50±0,77 vs 2,06±0,44, p<0,001). It was also a significant increase in the number of early apoptotic cells present (in the blood serum: 2,02±0,35 % vs 0,60±0,09 %, p<0,01, in the BAL: 2,77±0,45 % vs 0,47±0,06 %, p<0,01).

In acid aspiration-induced acute lung injury and hepatopulmonary syndrome the high level of TNF-α is positively correlated with the increasing level of early apoptosis. In the future there will be investigated TNF-α receptors: TNF-RI and TNF-RII.

## THE INFLUENCE OF STANDARD TREATMENT OF PATIENTS WITH ACUTE ADENOVIRAL INFECTION ON THE CONCENTRATION OF INTERFERON-ALPHA, IMMUNOGLOBULINS OF BASIC CLASSES, THE ABSOLUTE AND RELATIVE NUMBER OF IMMUNOCOMPETENT CELLS IN THE PERIPHERAL BLOOD

**Bessarab M.**

*Academic adviser:* Moskaliuk V., M.D., Ph.D., Professor, Bukovinian State Medical University, Chernovtsy, Ukraine.

The remedial measures carried out according to a standard procedure adopted at the Chernivtsi base military hospital on 10 male patients aged from 19 to 24 years with acute adenoviral infection (AAI) have demonstrated a positive effect on the clinical course of the disease which was characterized by an improvement of the general level of health of the patients owing to an abatement of the symptoms of intoxication and a disappearance of the signs of the disease.

A course of administered standard treatment of AAI results in an essential tendency, in some cases, towards a reduction of the concentration of interferon-alpha (IFN-α) by 34,0% and immunoglobulins of the basic classes: IgM – by 9,3%, IgG – by 9,1% and IgA – by 10,3%/

A standard treatment administered to patients with AAI during three days contributes to a certain decline in the peripheral blood of the concentration of IFN of type I and immunoglobulins of the basic classes that may influence negatively on the resistance of the patients' organism to another viral or bacterial infection. Therfore, administering replacement therapy with the inclusion of IFN of type is necessary.

Treating patients with AAI by means of a standard method results in an improvement (normalization) of the absolute and relative amount of immunocompetent cells and immunohematological indices and coefficients due to an increase of the absolute and relative number of lymphocytes, the indices of nonspecific antiinfectious resistance and immune antiinfectious defence; a tendency towards a decrease of the absolute number of leukocytes, stab neutrophils, segmentonuclear leukocytes, monocytes and the immunohematologic indices and coefficients.

Irrespective of a positive effect of the standard method of treatment of patients with AAI one fails to achieve desired positive results, requiring toupdate this mode of treatment. Proceeding from the results obtained, one can come to a conclusion that this method, despite its efficacy, does not influence the increase of the concentration of endogenous cytokines (interferons) which perform an important antiviral and immunoregulatory function of nonspecific antiinfectious and specific immune antiinfectious defence.

Adenoviruses exert an interferonogenic effect – they stimulate the synthesis of endogenous IFN-α, but in case of AAI the standard treatment is not conducive to an elevated concentration of IFN-α, lowering the efficacy of the basic method of treatment. From our point of view, it is advisable to use replacement therapy to improve the results of treatment. Thus, an elaboration of a multimodality treatment of patients with AAI along with the use of replacement therapy of native and recombinant IFN-α against a background of basic standard therapy may improve the process of treating AAI.

# ADAPTIVE MECHANISMS OF CEREBRAL CIRCULATION FOR ARTERIAL WILLIS PRIMITIVE FORM OF THE POLYGON

**Juncu Victor, Serbleanscaia Olesea**

*Academic adviser:* Dragan Boris, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** The cerebral arterial system is based on one of the most effective body anastomosis systems - Arterial Willis polygon, whose integrity depends on the possibility of developing the nerve material. Willis polygon shape has many polymorphisms, one of which is its primitive form. Hand in hand with the development of cerebral blood vessels and its evolution towards the primitive form of the arterial circle, the cerebral staff is irrigated disproportionately, to which the body is manifesting certain adaptational short-term and long-term mechanisms.

**Purpose and Objectives:** Highlighting of the mechanisms of cerebral circulation regulations in primitive form of Willis arterial circle on behalf of literature and macroscopic analysis of preparations studied.

**Materials and methods:** The project is based on 12 prepared anatomical researches, out of which the primitive form was documented in a single preparation. Interested arteries were identified by injecting red neoprene latex.

**Results:** Immediate arrangements are made by local production of adenosine and installation of three characteristic effects: vasodilatation, increase of local blood flow, increase of oxygen intake. Increased lactate concentration, protons and carbon dioxide-induced local vasodilatation. Due to inefficient irrigation is stimulated the endothelial synthesis in the posterior communicating artery walls. They act on the endothelial receptor type B of the cerebral cell membrane formation induces vasodilatation by nitric oxide and prostaglandin I2. When the posterior communicating arteries are dilated sufficiently, capable of providing optimal blood needs of neurons, PGI2 mediates inactivation of endothelial receptor type B by its glycosylation. Then there is a cleavage enzyme affinity for the receptor αI segment part B. Note that αI is the structure that differentiates the receiver B, the Type A, so it produces conversion receiver B to A. Under the action of endothelial 1 A receptor activates protein Gp with subsequent formation translator mates messengers that bind to receptors and channels of sarcolema induce calcium released by them. But initiating contraction by calcium ions is checked by the ET B receptor interaction with ET3 and therefore - enzyme inactivation myosin light-chain kinas. This enzyme is responsible for coupling actin to myosin that is not initiated acto-myosin coupling. Calcium in the cytoplasm outside the muscle cell is removed, so between the 2 limits between which collagen and elastin fibers interwoven through the corridor of calcium (calcium channels) activated by NANC system. Collagen as a fixing calcium protein, as a result it strengthens the fibrous skeleton of the vessel that determines an optimal diameter of irrigation of cerebral staff.

**Conclusion:** In the case of the primitive form of the Willis Polygon the body does not offer any complementary conditions (the absence of the vertebral truck) preventing the pathology. When speaking about the posterior communicating artery there are noticed morph-functional modifications that are absolutely necessary for the uniform distribution of the blood flow.

**Keywords:** Polygon Willis, primitive form, endothelin.

# SOME CLINICAL MORPHOPATOLOGICAL ASPECTS OF LUMBAR INTERVERTEBRAL FORMATIONS

**Cociug Adrian**

*Academic adviser:* Zota Ieremie, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

**Introduction:** Degenerative-dystrophic damages in human spinal column are quite frequent. In 90% of the cases they manifest themselves through disorders in peripheral nervous system with growth tendency at young people, capable to work.

According to the latest information from the National Center of Public Health Statistics in the USA, persons over 45 years old often limit their activities due to pain in the thorax and lumbar part of the vertebral column, and these people constitute about 26-32% of the population of the "second age".

Structural changes in the tissue in the lumbar area of the vertebral column as a rule become irreversible with time.

**Materials and methods**: We studied the structure of the intervertebral disc with pathology of the vertebral column in 123 patients, who underwent surgical intervention at the Vertebrology Section of Public Medical Sanitary Institution Traumatology and Orthopedy Hospital in 2009 and compared cadaver material (lumbar vertebral segments) from 7 cases with different somatic pathologies from the Hospital „Sfinta Treime".

**Results and discussions**: The nucleus pulposus is primarily affected by a series of mechanisms with disintegration of collagen fibers, fragmentation, loss of liquid, thus forming multiple crevices at the level of fiber ring, which leads to decrease of their ability to absorb the shocks, and makes them less flexible, which decreases the disc resistance significantly. One of the ethiopathogenetic factors is circulation disorders of the disc irrigated by the vertebral arteries. In case of senior people, atherosclerosis at advanced stage intensifies degenerative-dystrophic changes of intervertebral disc.

**Conclusions**: The results obtained during this study show that normally people at the age of 40-50 years old suffer from discogenic pain, mostly female (55%), most of them accusing of discal hernia at the level of lumbar area, segment L5.

Histologically 14 patients (16,6%) have incipient forms of degenerescence of intervertebral disc with aspects of myxoid degenerescence, centrally chondroblastic wtih condrocites, in cases of 70 patients (83,3%) in medium forms of degenerescence of intervertebral disc the following were detected: fibrosed tissue, with zones of interfibrilar edema; discal cartilaginous tissue with chondrocytes in chondroblast, papillary aspect and hemorrhagic zones, hyalinization zones. In case of 39 patients (30,5%), after 51 years old in advanced forms of intervertebral disc the following were discovered: hyalinized discal cartilage, intradiscal calcifications or ossification zones, lymphocitar infiltrate.

**Key words**: intervertebral disc, degenerative-dystrophic changes, proliferation of fibroblasts, collagen fibers, intervertebral segments.

# ROLE OF MACROPHAGES IN CERVICAL CARCINOGENESIS

**Mazuru Oxana, Rudico Lucian**

*Academic adviser:* Şaptefraţi Lilian, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Any malignant tumor, in its evolution, is driven by a variety of biological events, acting sequentially and in a well orchestrated manner that will ultimately determine the acquisition of an aggressive phenotype by the tumor. It is widely accepted that molecular promoters of tumor transition from a preinvasive to an invasive state, derive from tumor mass itself and from stroma microenvironment as well. There is an increasing body of evidence that tumor associated macrophages (TAM) are directly involved in progression of different malignancies. Through a broad spectrum of molecular agents (cytokines, metalloproteinases, growth factors) TAM enhance tumor progression by cancer cell mobilization, intercellular matrix degrading, tumor angiogenesis and lymphangiogenesis, increasing of cancer cells invasiveness and metastasizing.

**Aims:** Studying of TAM densities and distribution within the different stages of uterine cervix neoplasia progression.

**Materials and methods:** It was studied material taken through biopsy or after hysterectomy from patients with macroscopically detectable lesions or operated for uterine cervix cancer respectively. In each case 3 μm thick serial sections were done. Histopathalogic diagnosis was done using Haematoxylin Eosin staining. The following groups of lesions were obtained: CIN1 – 14 cases (n=14); CIN2 – 12; CIN3 – 24; microinvasive carcinoma – 15; invasive carcinoma – 32. Macrophages immunodetection was performed using anti-CD68 (monoclonal mouse antihuman clone PG-M1, Dako Denmark) LSAB+ technique, Avidin-Biotin working system. Prior to applying the primary antibody, endogenous peroxidase was blocked in sol. $H_2O_2$ 3% for 5 min, and sections were heated for antigen retrieval up to 99°C in Retrieval Solution pH6 (Dako, Denmark) for 20 min. Time exposure for primary antibody was 30 min. DAB was used as a chromogen. Nuclear counterstaining was made with Lille's modified Haematoxylin. The entire IHC procedure was performed automatically at DakoAutostainer (Dako Glostrup Denmark). Macrophage quantification was made with Hot-Spot method. Statistical processing of data was done in SPSS 13.0 software, using bivariate correlation and non-parametric test, where $p \leq 0.05$ was considered as statistically significant.

**Results**: It has been obtained a linear increasing of both peritumoral and intratumoral TAM densities during progression of cervical lesion severity ($p<0.001$). In all histopathologic groups density of peritumoral TAM (PTAM) was higher than the density of intratumoral TAM (ITAM) ($p<0.001$). In CIN1, the average of PTAM was 108.16, with a uniform distribution. ITAM (51.18) were mainly localized basal and suprabasal layers. In CIN2, PTAM (122.38) and ITAM (56.88) had a similar distribution with CIN1 stage. In CIN3, the number of PTAM (124.4) from the lamina propria was significantly higher than those from deep stroma, being predominantly arranged around vascular structures with small lumen. ITAM (103.7) were found throughout the whole thickness of stratified epithelium with a slight increasing in the basal part. In microinvasive carcinoma, PTAM (298.6) were arranged in clusters in the invasive front and around vessels. We noticed the tendency of macrophages to interplace among the endothelial cells of small vascular structures. ITAM (200) were organized in groups, localized in the invasive front. In invasive carcinoma, PTAM (413.6) formed clusters, placed around vessels and epithelial islands. In all 19 cases (59.38%) of vascular invasion, emboli had CD68+ cells inside. ITAM (322.8) were bigger than PTAM but with weaker cytoplasmic expression, being distributed uniformly within the tumor mass.

**Conclusions:** Strong association between histopathologic grade and TAM density, their arrangement in immediate vicinity with invasive front, integration among endothelial cells of vascular structures, presence inside the emboli strongly indicate on TAM involvement in uterine cervix neoplasia progression.

## RARE VARIANTS IN ANATOMY OF THE BRACHIAL ARTERY

**Gadzhieva F., Zasimovich T., Gil I., Pavlukevich E.**

*Academic adviser:* Ocoloculac E., M.D., Ph.D. Professor, Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** Arteries are the structures that can vary greatly even in the body of the same person. About 20% of people have different variations in arteries branching and topography. Arteries of the upper extremity are the place of frequent surgical manipulations and diagnostic operations, therefore knowledge about the variant anatomy of vessels of upper extremity may be beneficial.

**Aims:** The aim of our study was to analyze types of branching that may occur in brachial artery in males and female of different age. Using macro and micropreparation we assessed anatomy of brachial artery in 10 fetuses and 20 adult cadavers (60-85 years) taken from the collection of the human anatomy department of the Grodno State Medical University.

**Results**: In 60% of cases in adults we found the classic type of branching, 20% had a high level of brachial bifurcation. Usually it occurs near the neck of the radial bone. In fetuses brachial artery had typical way in most cases. We described two types of its branching: magistral and loose. Sometimes the brachial artery is double; it has superficial and deep branches. A. brachialis superficialis is the branch of the axillary artery that usually is present on the median nerve as in most cases the brachial artery lies behind the nerve. The first who described the superficial brachial artery was Adachi. Keen who proposed that the superficial brachial artery is the radial artery that starts from the axillary artery. The brachial artery may run with the median nerve toward the medial epicondyle, where it may turn around, or beneath, a supracondylar process if present (2.7% of individuals, Gruber) and then descend to its normal position beneath the pronator teres. It may also pass through the pronator teres muscle where it may be entrapped and compromised. Variations in branching of brachial artery are typical in 20% of the population. This should be counted while performing medical procedures in this area.

**Key words:** anatomy, arteries, variations.

## CORRELATION OF PARAMETERS OF A. UTERINA WITH SOME ARTERIES OF THE HUMAN PELVIS

**Gorustovich O., Volchkevich O., Volchkevich D.**

*Academic adviser:* Volchkevich D., M.D., Ph.D. Professor, Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** Diagnostic of human vascular system is an actual problem in medicine. Angiography of a. uterina with the purpose of diagnostics of pathological conditions is used in gynecology and surgery. However sometimes it is not possible to study a structure of a. uterina, therefore we have made attempts to establish the correlations of parameters of the artery with another artery of pelvis.

**Methods of research:** macromicropreparation, angiography, morphometry, statistical.

**Conclusions:** Strong association between histopathologic grade and TAM density, their arrangement in immediate vicinity with invasive front, integration among endothelial cells of vascular structures, presence inside the emboli strongly indicate on TAM involvement in uterine cervix neoplasia progression.

## RARE VARIANTS IN ANATOMY OF THE BRACHIAL ARTERY

**Gadzhieva F., Zasimovich T., Gil I., Pavlukevich E.**

*Academic adviser:* Ocoloculac E., M.D., Ph.D. Professor, Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** Arteries are the structures that can vary greatly even in the body of the same person. About 20% of people have different variations in arteries branching and topography. Arteries of the upper extremity are the place of frequent surgical manipulations and diagnostic operations, therefore knowledge about the variant anatomy of vessels of upper extremity may be beneficial.

**Aims:** The aim of our study was to analyze types of branching that may occur in brachial artery in males and female of different age. Using macro and micropreparation we assessed anatomy of brachial artery in 10 fetuses and 20 adult cadavers (60-85 years) taken from the collection of the human anatomy department of the Grodno State Medical University.

**Results**: In 60% of cases in adults we found the classic type of branching, 20% had a high level of brachial bifurcation. Usually it occurs near the neck of the radial bone. In fetuses brachial artery had typical way in most cases. We described two types of its branching: magistral and loose. Sometimes the brachial artery is double; it has superficial and deep branches. A. brachialis superficialis is the branch of the axillary artery that usually is present on the median nerve as in most cases the brachial artery lies behind the nerve. The first who described the superficial brachial artery was Adachi. Keen who proposed that the superficial brachial artery is the radial artery that starts from the axillary artery. The brachial artery may run with the median nerve toward the medial epicondyle, where it may turn around, or beneath, a supracondylar process if present (2.7% of individuals, Gruber) and then descend to its normal position beneath the pronator teres. It may also pass through the pronator teres muscle where it may be entrapped and compromised. Variations in branching of brachial artery are typical in 20% of the population. This should be counted while performing medical procedures in this area.

**Key words:** anatomy, arteries, variations.

## CORRELATION OF PARAMETERS OF A. UTERINA WITH SOME ARTERIES OF THE HUMAN PELVIS

**Gorustovich O., Volchkevich O., Volchkevich D.**

*Academic adviser:* Volchkevich D., M.D., Ph.D. Professor, Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** Diagnostic of human vascular system is an actual problem in medicine. Angiography of a. uterina with the purpose of diagnostics of pathological conditions is used in gynecology and surgery. However sometimes it is not possible to study a structure of a. uterina, therefore we have made attempts to establish the correlations of parameters of the artery with another artery of pelvis.

**Methods of research:** macromicropreparation, angiography, morphometry, statistical.

**Material of research:** 27 preparations of female pelvic arteries in two age groups: newborns and aged 50-65 years.

**Results of research:** correlation coefficients of a. uterina parameters[1] are presented in

| Parameters of correlation | Length of a. uterina | Diameter of a.uterina | Variant of beginning |
|---|---|---|---|
| Level of bifurcation of f. iliaca communis | -0,47** | 0,03 | 0,23 |
| Diameter of a. iliaca communis | 0,46** | 0,10 | -0,03 |
| Diameter of anterior trunk of a. iliaca interna | 0,80 | -0,80 | -0,77 |
| Length of anterior trunk of a. iliaca interna | 0,60 | -1,00*** | -0,26 |
| Diameter of a. sacralis lateralis | -0,10 | 0,03 | 0,54** |
| Length of a. glutea superior | 0,16 | 0,27 | 0,45* |
| Length of a. vesicalis superior | 0,45* | 0,44* | 0,02 |
| Length of a. vesicalis inferior | 0,18 | 0,49** | 0,16 |
| Length of a. glutea inferior | 0,73*** | 0,06 | 0,19 |
| Length of a. pudenda interna | 0,66** | 0,09 | 0,06 |
| Presence of " corona mortis" | 0,19 | 0,38 | -0,25 |

Note: 1- factor Spearman R was used: *- p<0,05, **-p<0,01,***-p<0,001

**Concusion**: Thus, analyzing the received results, it is possible to draw a conclusion on presence of correlation of a. uterina parameters with parameters of some vessels of the pelvis. So, having established the diameter and a level of common iliac artery bifurcation, length of the anterior trunk of internal iliac artery, superior and inferior vesical arteries, inferior gluteal and internal pudendal arteries it is possible to indirectly know parameters of a. uterine.

## ANATOMICAL FEATURES OF BRANCHES OF THE FEMORAL ARTERY

**Gorustovich O., Volchkevich O., Volchkevich D.**

*Academic adviser:* Volchkevich D., M.D., Ph.D. Professor, Grodno State Medical University, Grodno, Republic of Belarus

The basis branch of femoral artery is the deep artery of the hip. Numerous researches have shown a significant variation of origin and branching of the given vessel.

In literature, variation of topographical relations between the origin of deep artery of the hip and inguinal ligament is described. Most often the artery originates 5-6 cm below inguinal ligament, rarely- just under it, and the rarest variant- at the level of inguinal ligament. Many authors describe lower origin of the artery- 10-11 cm from inguinal ligament.

Also, it is known as origin of the deep artery of the hip from medical semicircle of the femoral artery and external iliac artery above inguinal ligament. At the beginning of the a. profunda femoris from postero- external edge of the femoral artery, it goes downwards and laterally. If the vessel originates from the back semicircle, it goes along the posterior wall, then passes under its external edge and goes laterally. If the artery arises from posterial- internal edges of the femoral artery it passes between femoral artery and vein.

Many variants of origin of branches of the deep artery of hip are described in literature. One or both circumflex arteries depart directly from the femoral artery. In such cases only perforating arteries whose

quantity can vary, originate from deep artery of hip. If the deep artery is absent, all branches inherent in it depart from the femoral artery. A. circumflexa femoris lateralis more often departs from 1,5-2 cm below the beginning of deep artery of hip.

When a. circumflexa femoris lateralis divides on ascending and descending branches, the latter also can be accepted as additional deep artery of the hip. A. circumflexa femoris medialis more often originates 1-1,5 cm from deep artery of hip beginning. Adachi (1928) describes the variant at which the a. circumflexa femoris medialis originates from the femoral artery on 16 cm below the inguinal ligament.

So, it is visible that there is sharp problem of variability of arteries of hip. Further research is required on this question.

## OSTEOGENIC BONE HEALING APPLICATIONS – A HYPOTHESIS INVESTIGATION, USING GENETIC AND MOLECULAR FACTORS IN OSTEOPETROSIS, PROSTATE CANCER AND OSTEOGENIC SARCOMA

**Grivnev V.**

*Academic adviser:* Topor Boris, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In the present publication, I propose an idea of further investigation of a hypothesis, literally using notorious pathological diseases, one of which is the second most common cancer killer in men (prostate cancer), and use them for healing. As an infamous bovine agent it was once used by Edward Jenner to eliminate the dark killer smallpox in Europe. My hypothesis will use osteogenic neoplasms as bone healing stimulator and the genetic disease osteopetrosis that, by means of gene isolation, will alter the rate of bone healing and remodeling, hopefully making them faster and more efficient.

The investigation that was made in this publication, tries to find the common physiologic denominator between bone healing, wound healing, bone remodeling and their molecular factors which theoretically can be influenced by the pathologic processes mentioned above. The main goal of this paper is to suggest further future research and experiments that may prove the mentioned theory by medicine based evidence.

**Methods:** Theoretical review of literature articles, publications, books related to this issue can influence knowledge on bone healing acceleration and positive bone balance. The hypothesis is based on meta-analysis of published works of M.Urist, A.Reddi, T.Sampath and other researchers, who contributed to Bone Morphogenic Proteins research. Other molecular factors were also taken into notice (e.g. Transforming Growth Beta Factor etc.). Using the collected data, I propose a basic experiment for further research.

**Results:** A basic experiment was proposed that may show further results. Basically multiple fracture animal model sketched to be used, in which isolated molecular factors will be injected, and the results will be recorded.

**Conclusion:** Normal bone metabolism and physiologic processes are surprisingly still fully undiscovered and unknown. The practical implication of various neoplastic processes needs further laboratory and clinical assessment. In osteopetrosis, osteosarcoma, prostate cancer, wound/bone healing mechanisms, the Bone Morphogenic Proteins growth factor, Transforming Growth Factor-beta and other bone remodeling homeostasis molecular factors play pivotal pathogenetic role.

**Key words:** osteopetrosis, prostate cancer, osteogenic sarcoma, M.Urist, bone morphogenic proteins, transforming growth beta factor.

## ADENOMYOSIS: PATHOGENETIC ROLE OF STEROID HORMONES RECEPTION

**Zotova O., Gutorova M.**

*Academic adviser:* Artymuk N., M.D., Ph.D., Professor; Gulaeva L., M.D., Ph.D., Professor, Novosibirsk State University, Institute of Molecular Biology and Biophysics, Siberian Branch of the Russian Academy of Medical Sciences; Laboratory of pharmacogenomics, the Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russian Federation

**Introduction:** The most common localization of genital endometriosis is the uterus lesion - adenomyosis, the specific frequency of which is 70 - 80%.

**Methods:** We have studied 252 women with histologically verified diagnosis of adenomyosis (the main group). The control group included 252 patients without proliferative processes of the uterus. Immunohistochemical study of the endometrium/ myometrium had been carried out based on material from 51 patients, 7 of which were in the control group. We have studied the expression level of estrogen receptors: ERα, ERβ, progesterone receptors (PR) and CYP19 (aromatase) by reverse transcription polymerase chain reaction.

**Results:** Studied biopsy specimens were obtained during surgical treatment of patients with various gynecological pathology. Attention is drawn to the fact of increased expression of ERα and ERβ genes in patients with glandular hyperplasia of the endometrium, in contrast to the patients with endometrial atrophy. It is shown that in patients with glandular hyperplasia the level of Era and Erb gene expression is increased in 60%. While in patients with endometrial atrophy gene expression level is low in 72%. ERα and ERβ gene expression is significantly increased in patients over 50 with persistent menstrual cycle and in patients under 50 in postmenopause. Gene expression of PR has been analyzed in 30 patients in the main group. The number of women in groups of over and under 50 was equal, 15 people in each group. Attention is drawn to the fact of increased gene expression of PR in women in deep menopause. The low level of expression was observed in women under 50 with menstrual cycle. It is interesting that expression of ERβ was accompanied by suppression of ERα. Expression of ER is accompanied by expression of PR. In the studied uterine biopsy specimen a low expression of aromatase gene CYP 19 has been revealed, which is a favorable prognostic sign.

**Conclusions**: A low expression of aromatase gene CYP 19 it has been revealed. ERα and ERβ gene expression in the myometrium does not differ from the control group. ERα and ERβ gene expression is increased in patients with endometrial hyperplasia, and reduced in patients with endometrial atrophy. Increase of ERβ expression is accompanied by reduction of ERα expression and increase of PR expression.

**Key worlds**: adenomyosis, steroid hormones, reception.

## BIOARTIFICIAL LIVER – DECELLULARIZATION AND THE SUBSEQUENT RECELLULARIZATION OF THE RAT LIVER

**Vasian Maxim, Usturoi Igor**

*Academic adviser:* Viorel Nacu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Bioartificial livers (B.A.L) could become a possible future alternative to the liver transplant. B.A.L would be used as a temporary transplant (to sustain a critically ill patient until a suitable

donor organ becomes available) or a permanent transplant. It takes the form of closed, ex vivo systems containing functional liver cells grown on a synthetic matrix.

The aim of the present study is to obtain a bioartificial rat liver by consequently using of the decellularization and recellularization specific methods.

**Materials and methods:** 20 rats ranging in age from 6 weeks to 3 months have been used for obtaining intact rat liver. The obtained liver was mounted on a decellularization apparatus for perfusion. The portal vein was cannulated and the liver was first perfused with heparined phosphate buffered saline "PBS" (+ penicillin, amphotericin B, streptomycin) to clear blood from the organ. The liver was then decellularized with 500 ml water containing 1% sodium dodecyl sulfate "SDS" and 1% Triton X for at least 6 hours each time using a pump with manual recirculation. In some livers we have tried to use some other specific enzymes. The organ was then washed with deionized water and then with PBS for about 24 hours. Successful decellularization was defined as the lack of nuclei or cytoplasmic staining using histological evaluation method with Hematoxilin Eosin. The decellularizated liver was then recellularized with regenerative cells.

**Results:** This research work allowed us to obtain a bioartificial rat liver.

In the process of decellularization and recellularization of the rat's liver we have improved in some way the current technology and methods using a simple and effective apparatus for perfusion. An organ or tissue generated by this method could be transplanted to the rat model of chronic hepatitis.

In certain instances, a decellularized organ may be recellularized with cells in vivo (e.g., after the organ could be transplanted into an individual). Engineering of a transplantable liver would be a permanent alternative to donor liver transplant.

**Conclusions:** These results provide a proof of principle for the generation of a transplantable liver graft as a potential treatment for liver disease.

**Key words:** bioartificial liver, decellularization, recellularization, transplant.

## VARIANT ANATOMY OF THE LEFT GASTRIC VEIN

**Reznitsky P., Sechenov I.**

*Academic adviser:* Litvinenko L., M.D., Ph.D., Professor, First Moscow State Medical University "I.M. Sechenov", Moscow, Russian Federation

**Introduction:** Investigation of the venous vessels of the gastroesophageal transition is an actual problem in the surgery of the portal hypertension, and the basic knowledge of anatomical variants of the left gastric vein, as the main porto-caval anastomosis in the celiac region, is essentially important, because bleeding from the gastric varices accounts for 20-30% of all bleedings from varices and it is hard to stop this bleeding through endoscopy.

**Materials and methods:** From 2008 to 2011 year 90 gastro-intestinal complexes of corpses of adult people, both sexes, who had no gastroenterological diseases, were dissected and the celiac venous vessels were investigated by means of X-ray. At the end of our practical part the investigated information was processed statistically.

**Results:** In 89(98,9%) of 90 cases the left gastric vein (LGV) was found as an isolated vessel. In 1 case (1,11%) the LGV was a type of anatomical variant. Its gastric branch anastomosed with the right gastric vein along the lesser curvature of the stomach. The esophageal branch went up to the esophagus, along

the posterior wall of the stomach. During the dissection instead of a unique trunk of the LGV we found 3 small venous vessels in diameter of 2-3 mm, which ran into the portal vein. These vessels ran from the gastric and esophageal branches down to the celiac trunk and formed a plexus around the celiac trunk. We also investigated the relationship between the LGV and other veins of portal system in other 89 cases. In 50 cases the LGV had a duplicative course with the left gastric artery (LGA) and ran into the portal vein (41 cases, 82%) or into the angle of merge of splenic and inferior mesenteric vein (6 cases, 12%), or into the splenic vein (3 cases, 6%). In 39 of 89 cases (43,82%) the LGV was running separately from the LGA, crossing a common hepatic artery (23 of 89cases, 25,84%) or a splenic artery (16 of 89 cases, 17,98%). In both of these variants the LGV ran into the portal or splenic vein.

**Conclusion:** In 1,11% of all investigated cases we haven't found the unique trunk of the left gastric vein, which takes place in forming the very serious porto-caval anastomosis during the portal hypertension. Existing of such anatomical variants can provide not only very dangerous in diagnosis and prognosis gastro-duodenal bleeding, but also may cause technical problems during the hemostasis.

## MORPHOMETRIC CHARACTERISTICS OF COMMON CAROTID ARTERIES BIFURCATION IN MEN WITH DIFFERENT SHAPE OF THE NECK

**Kan I., Gershman S., Agayev Z., Avdeev A., Galats K., Samotesov P., Levenets A.**

State Medical University "Prof. V. F. Voyno-Yasenetsky", Krasnoyarsk, Russian Federation

**Introduction:** In the last decade, the anatomical structure of the bifurcation of common carotid arteries has attracted particular attention of anatomists and clinicians.

**Objective:** To identify the morphometric characteristics of the bifurcation of common carotid arteries in men with different forms of the neck.

**Techniques:** 90 male cadavers (36-60 years) were studied. The lengths of the neck, its frontal and sagittal dimensions of its base were measured. Classification of forms of the neck by A. Sozonov-Yaroshevich: long and narrow neck, index ≤ 67,2; neck of average length and average diameter, index = 67,3-79,5; short and wide neck, index ≥ 79,6. Morphometry was performed at bifurcation of the common carotid artery (CCA) on the right and left (length, diameter, angle of bifurcation, the lateral angles with the external (ECA) and internal (ICA) carotid arteries).

**Results:** Cadaveric material was distributed into 3 groups: men with long, narrow neck, n = 27, men with a neck of medium length and average diameter, n = 38; men with short and wide neck, n = 25. The length of the bifurcation of the OCA in men with long, narrow neck was the highest in comparison with the other groups studied, and was right on average 23,2 ± 5,4 mm, and left to 21,4 ± 5,1 mm, while the diameter was the smallest - 9,3 ± 2,2 mm on the right and 9,2 ± 2,3 mm on the left. The angle of bifurcation of men in this group was also lower and averaged 6,6 ± 0,6 ° to the right and 7,2 ± 0,8 ° to the left. The average value of the right side corner of the NSA was 178 ± 1,2 °, on the left, it was 176 ± 0,7 °. The value of the lateral angle of the ICA was equal to an average of 174 ± 0,9 ° right and 175 ± 0,5 ° to the left. A group of people with short and wide neck, the average length of the bifurcation of the CCA was minimal, with both its greatest diameter. Its length is right on average 14,9 ± 5,3 mm, and left to 14,6 ± 5,0 mm. The diameters were equal to the values of 22,2 ± 6,4 mm and 23,5 ± 6,9 mm on the right and left, respectively. The apical angle in this group of men studied was 27,0 ± 0,9 ° to the right and 29,3 ± 0,8 ° to the left. Angle with the NSA was on average 167 ± 1,5 °, and the left - 164 ± 2,6 °. Side angle with the right internal carotid artery was 158 ± 2,4 °, the left was equal to the value of 160 ± 1,4 °. On the neck of

average length and average diameter values of the parameters studied the bifurcation of the OCA, both right and left were located between the similar values of the two above groups. Length of the bifurcation of the right CCA average was equal to 18,5 ± 5,2 mm, and left to 19,8 ± 5,3 mm. The average value of the diameter of the bifurcation of the right CCA was 16,3 ± 3,9 mm and the left - 16,9 ± 4,9 mm. The angle of the branch on the right CCA was equal to 17,2 ± 0,6 °, left it was 19,6 ± 1,1 °. Side right angle with the NSA was equal to 176 ± 1,7 °, the left is the value was 170 ± 1,5 °. Side angle with the internal carotid artery was equal to 161 ± 0,9 ° right and 161 ± 1,9 ° to the left.

**Conclusions:** Our studies have revealed clear differences of morphometric characteristics of the bifurcation of the OCA in men with different forms of the neck.

**Key words:** common carotid artery, external carotid artery, internal carotid artery bifurcation of the common carotid artery, morphometry, the shape of the neck.

## QUALITATIVE ANALYSIS OF NEURONS IN THE HUMAN PERIAQUEDUCTAL GRAY

**Vujic Jovan**

*Academic adviser:* Maric Dusica, M.D., Associate Professor, University of Novi Sad, Serbia

**Introduction:** The periaqueductal gray matter is classically divided into four major nuclei: dorsal, medial, lateral and ventral, according to their cytoarchitectural feature. While some studies indicate that these nuclei are composed of similar cell types, there is some evidence that each of these nuclei is arranged in discrete groups of cells on the basis of their neuronal morphology and their afferent and efferent connection.

**Materials and Methods:** The neurons were labelled by Golgi staining from five human midbrains, obtained from medico-legal forensic autopsies of adult human bodies and free of significant brain pathology. Two-dimensional digital images of each periaqueductal gray neuron were recorded by a digital camera connected to a light microscope.

**Results:** The neurons of the periaqueductal gray were qualitatively analysed, and these cells were classified into two main classes. Taking into account the shape of the cell body, numbers of the primary dendrites, shape of the dendritic tree and their position within the periaqueductal gray, three subclasses of the large neurons and two subclasses of the small neurons have been recognized.

**Conclusion:** The present study supports the hypothesis that the periaqueductal gray matter could be subdivided into discrete cell groups according to their neuronal morphology.

**Key words**: periaqueductal grey matter, neuron, human, anatomy, histology.

## HORMONE REPLACEMENT THERAPY: THE GOOD, THE BAD AND THE UGLY

**Neagu Oana, Tudorancea Ionuț**

*Academic adviser:* Iliescu Radu, M.D., Ph.D., University of Medicine and Pharmacy "Gr. T. Popa", Iasi, Romania

The incidence of hypertension and cardiovascular diseases is lower in women than age-matched men, before women go through menopause.

It has been suggested that low estradiol levels in postmenopausal women may be the culprit for the risk of cardiovascular diseases, which prompted the use of hormone replacement therapy as a prevention of hypertension and cardiovascular diseases after menopause.

However, recent results from women health initiative study showed that the risk of cardiovascular events after the hormone replacement therapy was increased for myocardial infarction, stroke, deep venous thrombosis and pulmonary embolism in the conjugated equine estrogens (CEE) 0.625 mg daily plus medroxyprogesterone acetate (MPA) 2.5 mg daily administration, and for the deep venous thrombosis, pulmonary embolism and stroke in the conjugated equine estrogens (CEE) 0.625 mg daily administration.

After menopause, not only the estradiol levels decrease, but androgens remain unchanged or even elevated. It is therefore proposed that an increase in the androgen/estrogen ratio may be the pathogenic mechanism for cardiovascular diseases after menopause.

Experimental studies indicate that a relative increase of androgens after menopause may lead to metabolic syndrome, endothelial dysfunction, activation of the sympathetic nervous system and the renin angiotensin system. All these mechanisms act in concert to promote hypertension and cardiovascular diseases.

Therefore, targeting androgens after menopause may be beneficial for reduction of cardiovascular risk in postmenopausal women.

**Key words:** hormone, cardiovascular, estrogens, androgens.

## IMPACT OF LABOR MIGRATION

**Jucov Alina, Jucov Artiom**

*Academic adviser:* Spinei Larisa, M.D., Ph.D., State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Migration is a phenomenon that influences the sustainable development of the Republic of Moldova, the continuity of reforms implemented in the social, medical, economic fields etc. We cannot just look at the impact of the labor migration as a negative phenomenon, it has positive aspects as cultural exchange between citizens, labor outflow, the contributions of migrant workers, employment, etc. leading to improved living standards and alleviating the social burdens of state.

**Methods:** The study is a secondary study based on revision of domain's literature. The aim of the study is to highlight the impact of migration in the spheres of social life, economic, medical and political fields of the society. The study carries a retrospective character and analysis of the phenomenon of migration.

**Results:** The contemporary demographic concerns, caused by migration, are determined by risks arising from the locally or zonal, continental crisis, which has influence on social order and triggers a socio-economic, ethnic and cultural disorders balance. Material difficulties and social problems are the most serious obstacles in the way of new families. It is worth noting that the effects of migration, in changing of the system of values tend to be significantly influenced by the type of locality where inhabit migrants.

During the period 1990-2000, the number of migrants in the world increased by 14% with the 175 million migrants in 2000 year (3% of the world's population). At the beginning of the XXIst century, on a global scale, each 35th man was a migrant, 48% of all were women migrants. Contemporary demographic transition means passage from a demographic scheme, characterized by increasing of the num-

ber of births and deaths, to «modern» scheme characterized by low birth rates, but with an increase in life expectancy.

**Conclusion:**

- Labor migration is one of the most pressing socio-economic problems for the Republic of Moldova, the impact of migration is widespread phenomenon, which negatively influences a range of demographic indicators: birth rate, divorce, marriage and population health.

- Migration is not a static phenomenon, but continuous standing, which manifests itself with values rising and falling gradients according to the satisfaction of the population`s needs.

**Keywords:** impact, labor migration, health.

## ABOUT THE CONSUMPTION OF FOODSTUFFS FROM SOYA BEANS

**Tazhybayeva A., Batyrgalieva A.**

*Academic adviser:* Karimov T., M.D., Ph.D., Professor, West Kazakhstan State Medical University "Marat Ospanov", Aktobe, Kazakhstan

**Introduction**: Soya bean is one of the most ancient cultural plants. The history of cultivation of this culture is accounted at least by 5 thousand years. According to the opinion of one of the outstanding specialists of soya in Russia V.B. Yenken soya bean as a cultural plant was formed in ancient times no more than 6 – 7 thousand years ago. This property allows to use soya for preparation and enrichment of different dishes and also as a basis of vegetable substitutes of the products of the animal origin. Numerous soya products are produced from it. Soya and soya products are widely used in Eastern-Asian regions especially in Japanese and Chinese and vegetarian kitchen in the form of meat, milk, flour and butter.

**Aim of the investigation**: To study the consumption of foodstuffs from soya by the enterprises and population of Aktobe city, Republic of Kazakhstan.

**Materials and methods of investigation**: 35 questionnaires of trading enterprises and different objects of nutrition were performed in Aktobe.

**Results**: According to the results of questionnaire the consumption of soya products by different enterprises and population showed that Aktobe citizens have been using soya product during 20 years, mainly soya meat and soya of Chinese production. Consumers demand is higher in restaurants and supermarkets.

**Conclusion**: Consumption of foodstuffs from soya by enterprises and population of Aktobe city is used moderately.

## THE COMPLEXITY OF PLURIMALFORMATIVE GENETIC SYNDROMES: A CYTOGENETIC STUDY OF 5 CASES OF TURNER SYNDROME AND 3 CASES OF KLINEFELTER SYNDROME

**Corobuta Adina, Hristia Cornelia**

*Academic adviser:* Macovei Mihai, MD. University Assistant, University of Medicine and Pharmacy "Gr. T. Popa", Iasi, Romania

**Introduction:** Turner syndrome (TS), in which there is loss of all or part of one sex chromosome, occurs in one in 2500 live-born females and is associated with characteristic clinical and physiologic abnormalities -short stature and gonadal failure.. Gonadal function is also clinically important, ranging from the onset of spontaneous puberty and the potential for fertility to complete gonadal failure. Klinefelter syndrome (KS) affects males carrying an additional X chromosome, which results in male hypogonadism, androgen deficiency, and impaired spermatogenesis. Some patients may exhibit all of the classic signs of this disorder, including gynecomastia, small testes, sparse body hair, tallness and infertility.

**Purpose and objectives:** To evidentiate the groth hormone treatment effect in increasing height in TS and the testosterone replacement therapy effect in virilisation in KS.

**Materials and methods:** Our study includes 5 cases diagnosed with Turner syndrome and 3 cases with Klinefelter syndrome between 2005-2011 in Iasi Medical Genetics Center in order to illustrate some variants and to show the cytogenetic complexity of these syndromes which reflects in the clinically diverse presentations. Cytogenetic diagnosis was performed using peripheral lymphocytes with G banding and Fish analysis.

**Results and discussion:** Of the 5 cases that had been diagnosed with Turner Syndrome, all of them had various skeletal malformations raging from the shortening of the fourth metacarpal to dental abnormalities, face malformations and hypostature while the karyotypes were slightly different between the 5 cases analyzed. Furthermore, one case (karyotype 45,X/46,X,r(X)(p22.1q24)[24]/[23]) had a congenital unilateral ovary which added to the complexity of the clinical approach. We also found one case (karyotype 46, XX/45,X[41][7]) that had the characteristic sausage-like appearance of the toes.

Of the 3 cases diagnosed with Klinefelter syndrome, 2 cases had distinctive intellectual and learning disabilities (karyotypes 48,XXY[96]/[3] and 48,XXYY/47,XYY), while in the other case (karyotype-47,XXY(38)) hypogonadism, which led to gynecomastia and late puberty, which in turn stood as the basis for psychosocial problems, represented the main features.

**Conclusion:** Our study shows the cytogenetic complexity of Turner and Klinefelter syndromes which is reflected on the clinical features of the patients outlining the importance of karyotyping in these plurimalformative syndromes.

**Keywords:** genetic syndrome, kariotype, hypogonadism

## DIFFERENCES IN FROG SKELETAL AND CARDIAC MUSCLE EXITATION

**Vlasenko Alisa, Komar Tamara**

*Academic adviser:* Suprunov Costantin, Assistant Professor, Vinnitsa National Medical University "I.N. Pirogov", Vinnitsa, Ukraine

**Introduction:** The problem of muscle excitation is an important component of research in experimental physiology as well as in clinical sciences such as cardiology and sports medicine. When trying to determine intercellular interactions of the excitation transmission, there were restrictions of methodical nature. We propose a new methodological approach to assess the distribution of action potentials in skeletal and cardiac muscles of frogs.

**Methods and Results:** For action potentials recording we used polytrode (multichannel conical microelectrode), sharpened as a pencil. With this treatment the contact areas are located in one zone close to each other at a fixed distance.

The polytrode was placed into the intercellular space of gastrocnemius muscle of a frog and potentials of several adjacent muscle fibers were recorded.

We recorded spreading of excitation in the gastrocnemius muscles during tetanic contraction and during the rest period. It was found that tetanus is accompanied by the rhythmic action potentials that were recorded by all channels of the polytrode. During the rest time a tonic contraction takes place, when single action potentials are observed, enveloping only individual muscle fibers without being distributed to the neighboring fibers. Such contractions were recorded as a series of potentials at individual contact sites of the polytrode.

After recording the action potentials of skeletal muscle we have placed the polytrode into the cardiac muscle tissue. The peculiarity of the heart is a solitary contraction when short potential covers sequentially all fibers and it was recorded on the all the channels simultaneously as one solid "wave".

**Conclusion:** Our research shows that the excitation of skeletal muscle demonstrated individual potentials from individual muscle fibers. It looks very similar to a myogram of skeletal muscle during the titanic contraction. In the cardiac muscle due to the peculiarities of its structure and ability to transfer the action potential from one cardiomyocyte to another the oscillogram looks like summation of excitations of individual fibers with a very small interval.

**Key words**: muscle excitation, tetanic contraction, skeletal muscle, cardiac muscle, frog.

## COUPLED SPIKE ACTIVITY IN MICROPOPULATIONS OF THE CORTEX NEURONS

**Kostrikov Serghei, Dudnik Victoria, Rokunet Igor**

*Academic adviser:* Vlasenko Oleg, M. D., Ph. D., Assistant Professor, Vinnitsa National Medical University "I.N. Pirogov", Vinnitsa, Ukraine

**Introduction:** As it is known, in many CNS structures, neurons, which are spatially close to each other, form micropopulations. These neurons are characterized not only by neighboring spatial localization but also by the existence of close functional synaptic connections between members of such population. The phenomenon of association of cortical neurons in the so-called columns or rather similar groupings (barrels, etc.) is widely known. But the functional relations between members of such micro populations remain little studied. In our research we recorded rigid coupling of the impulse activity generated by two spatially close cortical neurons that were observed in many cases.

**Methods and Results:** Using eight-channel metal microelectrodes (diameter of a separate channel 12 μm), we extracellularly recorded the impulse activity of 186 single neurons or their small groups (usually, pairs) localized in the motor cortex of rats anesthetized with ketamine. In 60 cases (32.3%), APs (action potentials) of two single neurons were generated in a parallel manner and demonstrated fixed time relations between each other. This is interpreted as being a result of excitation of two neighboring functionally connected (coupled) cells. These AP pairs could be recorded via one and the same or two neighboring microelectrode channels. Second AP in the pair was elicited exclusively in the case where an AP was preliminarily generated by another neuron, while APs of the latter in some cases could arrive independently. Therefore, "leading" and "accompanying" cells could be identified in such neuronal pairs. The coupling coefficient in the generation of APs by an accompanying unit with respect to APs generated by a leading cell was close to 100%, without dependence on the discharge frequency in the latter. Intervals between APs of two neurons in different coupled pairs varied from about 1.0 to 22-23 msec.

In the case of minimum values of these interspike intervals, APs generated by coupled neurons overlapped each other; this resulted in the formation of spikes looking like "complex APs." Within some time intervals, interspike intervals could increase, and such APs began to be decomposed.

**Conclusion:** The above-described data are considered the electrophysiological proof of the existence of tight functional coupling between a significant part of cortical neurons spatially close to each other, i.e., members of a micro population, which was obtained in an *in vivo* experiment.

**Keywords:** multichannel microelectrode recording, motor cortex of mammals, neuronal micropopulations.

## SKIN AGING

**Catansus Mircea, Filimon George, Paul Ivanuca**

*Academic adviser:* Constantin Tatiana, M.D., "Apollonia" University, Iasi, Romania

Similar to entire organism, skin aging is the imminent intrinsic process, this being also caused by exogen factors. Skin aging and photoaging are especially caused by the ultraviolet radiations, this being the main reason of skin transformation in sun exposed areas.

Despite morphological and pathophysiological differences , the intrinsic and extrinsic skin aging share several similarities on molecular level.

Primary skin aging aspects are defined by the formation of oxygen reactive species and the induction matrix of metalloproteinases. The accumulation of fragmented collagen fibrils prevents neocollagenoses and causes the deterioration of extracellular matrix through positive feedback methods.

The importance of the extrinsic skin aging initiated the development of several preventive therapeutic methods.

## BIOCHEMICAL STUDY OF NASAL SECRETIONS IN CHRONIC HYPERTROPHIC RHINITIS

**Catereniuc Daniela, Cobîlețchi Roman**

*Academic adviser:* Maniuc Mihail, M.D, Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Chronic hypertrophic rhinitis (CHR) affects the air passage by the respiratory lane of the nasal fossae, making the act of respiration harder and reducing considerably the life's quality of the patients (about 16-50% of the population suffer from CHR).

Morphologically, the hypertrophy of all the nasal turbinate layers occurs including the glands and nasal mucosa.

Nowadays, the diagnosis of CHR is made on clinical examination and patient's anamnesis. However, the pathogenetic mechanisms of this disease induce important changes at the cellular and biochemical levels, undetectable in its prodromal period and which anticipates the clinical manifestations. Exactly these primary alterations are the trigger, on which the further evolution of the disease will depend.

**Methods:** Therefore, our aim was to investigate the changes in nasal secretion's biochemical composition, in patients with CHR and the normal one. We consider that these data allow us to understand better the etiopathogenesis of the disease, to reveal indirectly the affected cellular constituents (channels, ion pumps, transporters, enzymes), their role in the genesis and evolution of the disease, as well as to elaborate a new, etiotrop and pathogenetic, conservative treatment (nowadays, the main method of treatment of CHR remains the surgery).

**Results:** For this purpose, a group of 15 patients, previously diagnosed with CHR, was selected. Their age was between 8 and 21 years old: 8 females and 7 males. Control group included five participants, without clinical signs of any upper respiratory disorders. Samples were taken by swabbing (in the case group) and by nasal lavage (in the control group).

Due to some chemical reactions, specific for each nasal secretion's component, colored compounds were first obtained and then dosed by the spectrophotometric method.

**Conclusions:** So, we established the normal and pathological (CHR) concentration of the next 8 nasal secretion's components: total protein, albumin, $Ca^{2+}$, Pi, $Fe^{3+}$, $Na^{+}$, $Cl^{-}$ and $Mg^{2+}$.

The results show increased levels of the albumin, $Ca^{2+}$, Pi, $Na^{+}$, $Mg^{2+}$ in the nasal secretion of the patients with CHR, compared with that of control group's representatives.

Also, we can remark a decreased concentration of the total protein, $Cl^{-}$ and $Fe^{3+}$.

Biochemical reactions and the spectrophotometric method allowed us to determine the concentration of some constitutive elements of the normal nasal secretion and of that in CHR. It helped us to compare, to analyze and to highlight some of the specific features of the pathogenesis of this disease - data which present real clinical interest for establishing an effective conservative treatment.

**Keywords:** chronic hypertrophic rhinitis, nasal secretion, biochemistry.

## SOME CHARACTERISTICS OF BRAIN VASCULARIZATION

**Juncu Victor**

*Academic adviser:* Zorin Zinaida, M.D., Assistant Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** This study concerns some aspects of individual anatomical variability on cerebral vascularisation, particularly arterial circle of Willis. In polymorphism it is important to know the arterial ring once deficiencies in brain may alter pounds.

**Objectives:** The criteria have guided us in making this research as: literature review with reference to the concerned issue; determination of morphometric parameters of the polygon forming arterial vessels; investigate parameters that brain arteries often show polymorphisms location; establish individual anatomical variations of the arterial polygon and arguing their clinical importance.

**Materials and methods:** The work is based on 12 prepared anatomical researches and 18 digitized scientific angiography (DSA).

**Results:** According to the data from the record investigated preparations we found that: In 9 cases the components of the arterial circle of Willis are integral; in 7 cases there was noticed an absence of the posterior artery; in 6 cases it turns out that one of posterior cerebral artery manifests independence and it is not related to basilar trunk; in 4 cases one of the cerebral arteries is atrophied, in counterpart to the second that is being developed to excess; in one singular case independence of the both was registered;

in 3 cases the absence of the posterior cerebral arteries, previous cerebral artery were registered. These variations are not considered as pathological if there is a congenital issue, and the perfusion is assured. This cannot be said about the postnatal manifestation, as it may cause the dysfunction of the cerebral vascularisation cycle.

**Conclusions:** As a final overview, referring to the basic form of the arterial circle of Willis we may notice that it opens symmetrically where the communicating and cerebral arteries derive from previous internal carotid artery and posterior cerebral artery is the termination branches of the basilar artery. Willis arterial polygon can be opened unilateral in case of the absence of posterior communicating artery, as well as in the case when the posterior cerebral artery originates from the internal carotid artery. In rare cases arterial circle of Willis may be opened in the anterior section in the case of the absence of the anterior cerebral artery. As well different versions are often met to individual constituents that are having the arterial circle of Willis in the form of aplasia, hypoplasia, hyperplasia and other forms of branching of the arterial circle components, including the atypical formation.

**Keywords:** Polygon Willis, as the basic primitive form, dysplasia.

## PERFECTING PREVENTION OF OCCUPATIONAL PATHOLOGIES IN MEDICAL SONOGRAPHERS

**Pats N., Slizevich T.**

Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** Ultrasound has a negative effect on the health of medical staff exposed to it in their work. This effect is manifested primarily by symptoms of vegetative polyneuropathy of the upper extremities, which lead to sensory, vascular and trophic changes.

**The objectives:** of this paper is to determine the prevalent complaints of worsened health in medical sonographers and to develop new, more advanced methods of prevention.

The subjects of the study are sonographers working at medical facilities of the Grodno district of Belarus.

**Materials and Methods:** We used surveys to collect data describing the health of medical sonographers and the measures they take to prevent the harmful effects of ultrasund on thier bodies. We developed and assessed the efficacy of our method by then used already for one year to prevent polyneuropathy of the upper extremities. The method makes use of a spraying brush mounted on a cold and hot water faucet. The collected data were treated with statistics software package. Statistics 6.1.

**Results:** Medical sonographers with ten or more years of work experience in the field had complaints mostly of pathalogical changes in the hands: excessive sweating, intermittent pain, cold sensation in the hands, as well as irritability, emotional liability, unsteady blood pressure, head aches and lumber pain. The study revealed inconsistent use of workwear: only 18% of the respondents reported use of protective gloves all the times, while 21% of the respondents use them occasionally and the rest only when their work is checked by superiors. Only 58% of the respondents regularly take planned breaks, while 24% take them sometimes. Only 28% of the respondents do a regular massage of their hands, while 18% do this occasionally and 54% do not do this at all. 14% of sonographers with five or more years of work experience resorted to rehab exercises only after having felt lumber and thoracic back pain symptoms. Only 21% of the respondents take their meals at regular times.

Hydro massage therapy of hands and forearms helped decrease the complaints of pain in the forearm and shoulder region, decreased sweating and cold sensation in 75% of sonographers with 10 or more years of experience and in 92% with experience between 5 and 10 years.

**Conclusions:** An efficient method to prevent polyneuropathy of the upper extremities in medical sonographers is warm water hydro massage therapy of the hands and forearms for 2 minutes every hour of work. A special spray brush mounted on the water faucet can be used for such therapy.

**Keywords:** sonographers, polyneuropathy.

## STEM CELL THERAPY IN EXPERIMENTAL TYPE I DIABETES IN RATS

**Nacu Victoria, Trifan Victoria, Bitca Angela, Lisii Cornel**

*Academic adviser:* Nacu Viorel, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Diabetes mellitus is a multisystem disease with biochemical and structural consequences. It is a chronic disease which results from the progressive inability of the pancreas to secrete insulin because of autoimmune destruction of the beta cells.

Type 1 diabetes causes an estimated 5%–10% of all diabetes cases or 11–22 million worldwide. Type 1 diabetes usually starts in children aged 4 years or older, with the peak incidence at 11-13 years. The stem cell therapy is a new direction in the treatment of type 1 diabetes mellitus.

**Matherials and Methods**: The experiment was done on 100 rats which weighed 180-220g and were 9-12 months old.

The diabetes was induced by intraperitoneal injection of 1 ml of 5% alloxan solution, that causes insulin-dependent diabetes in animals, called alloxanic diabetes, similar to type I diabetes in humans. After 7 days of hyperglycemia, alloxan induced diabetes was considered stable.

The pancreatic cells were extracted from the pancreas of donor rats. The pancreases were first cut in small fragments of $1mm^3$ then washed 2-3 times with HBSS and then digested with 0,5 g/l collagenase (Sigma Type V 663 U/mg). The pancreatic fragments were incubated for 1 hour in enzyme solution, and then the enzyme was inactivated with Hanks solution. The obtained mass was centrifuged at 1000 rpm and the cells from the upper portion of the supernatant were extracted and then cultivated. The digestion of the pancreatic substance and the extraction of the upper portion of the supernatant were done 3 times. The cells were cultivated in DMEM/F12 (8mM glucose) medium with 1g/l ITS supplement (5mg/l insulin, 5mg/l transferirn, 5mg/l selenium, Sigma), 100 UN/ml penicillin, 100μg/ml streptomycin, 2g/l BSA, 10 mM nicotinamide and with keratinocid growth factor (KGF). The cells were cultivated 3, 5, 7, 9, 13 days.

The umbilical stem cells were obtained from the umbilical cord blood of rat embryos.

**Results:** The animals were treated with pancreatic cells in suspension injected intraperitoneally 1 ml 3 times with an interval of three days between injections and with umbilical stem cells in suspension 9,8 x $10^6$ cells/ml - 1 ml intraperitoneally 3 times with 3 days between injections.

The results show that rats treated with umbilical stem cells and pancreatic cells significantly lowered their blood glucose levels and increased their lifespan, as compared with untreated mice.

The mice that received pancreatic cells show a blood glucose level slightly lower than in mice treated with umbilical stem cells.

**Key words:** stem cells, pancreatic beta cells, rats, type I diabetes, hyperglycemia, alloxan.

## MEDICAL AND HYGIENIC ISSUES OF SPORTS ATTIRE FOR YOUNG PEOPLE

**Pats N., Kukharchik Ye., Demko D.**

Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** One of the risk factors for heath impairment of youths can be incompliance of requirements to choosing, storing, and treatment of sports attire together with the disturbance of personal body hygiene after sports activities.

**Purpose**: To study medical and hygienic issues associated with youth's awareness of hygienic requirements to the treatment of sports attire and footwear in sports activities.

**Materials and methods**: Subject of research – college students of the regional centre in Belarus. 340 individuals aged between 15 and 18 were assessed. The methods of research were: questionnaire and statistical method «Statistics 6.1».

**Results:** 88% of the interviewed persons responded that they chose their sports attire according to the design of clothes and their size without considering specific purpose of clothing. Following physical exercise 72% of the respondents do not change their sports shoes and internal footwear (socks). 31% of students do not have the habit of changing underwear after physical exercise. The answers to the questions "Do you wash your sports clothes after physical exercise?" and "Do you air and wash your sports footwear after physical exercise?" were definitely negative in 72% of the respondents and "don't know" – in 12% of the interviewed. Moreover, 86% of students responded that they put their sports attire into the polyethylene bags and keep it until the next sports class. 84% of the respondents reported increased sweating and 27% – of skin acne on the back and upper limbs. Body pruritus was marked by 56% of students, pruritus in the foot area – by 46%. Direct association was revealed in subjects, who did not change their footwear after physical exercise and did not air their footwear, with the concerns in the foot area. The questions about the hygienic procedures were answered only by one seventh of the respondents. While going to the physical training class only 31% of the interviewed take with them the items of personal hygiene (soap, towel, tissues). Statistically important differences between sexes were not marked during the questionnaire analysis on all items.

**Conclusion:** In sports activities college students irrespective of their gender show low level of awareness of sports attire hygiene and personal hygiene rules following physical training classes.

Incompliance of the sports attire and footwear treatment rules were marked among the college students. Risk group for the development of skin and fungal foot pathology comprises young people who study in colleges of the regional center due to their incompliance of hygienic requirements to sports attire and footwear care.

**Key words**: youths, sports, awareness, hygiene, sports attire and footwear.

## GENETIC COUNSELING IN CARDIAC ANOMALIES

**Capros Hristiana, Sprincean Mariana, Usurelu Natalia, Egorov Vladimir, Stratu Natalia**

National Center of Reproduction Health and Medical Genetics, Chisinau, Republic of Moldova

**Introduction:** CATCH 22 syndrome is a well known developmental congenital syndrome. The most frequent genetic syndrome is velocardiofacial syndrome due to a microdeletion on chromosome 22q11.2. It is associated with abnormalities in heart, brain, thymus and parathyroid glands with an increased risk of immunodeficiency.

**The aim** of this study was to estimate the prevalence of fetal cardiac anomalies in the first trimester of pregnancy in pregnant women with high degree of genetic risk.

**Methods:** We analyzed data regarding ultrasound examination, the nuchal translucency, visualization of the four-chamber view, the outflow tracts, double test measured in first trimester of pregnancy, in 128 pregnant women who have been investigated for medico-genetic counseling in 2009-2010.

**Results:** In 44 (34,4%) pregnant women (average age 26,1 ± 5,3 years) was estimated medium degree of genetic risk, in 30 (23,4%) - high risk and in 54 (42,2%) - low risk. Prenatal diagnosis has contributed to the identification of severe fetal pathologies in 16 (12,5%) pregnant women. The most common cardiac defects included 6 atrial and 2 ventricular septum defects (37,5% and 12,5% respectively), anomalies of the aortic arch or its major branches 5 (31,3%), D-transposition of the great arteries in 3 (18,5%) cases. Amniocentesis with the study of fetal karyotype allowed the identification of numerical and structural chromosomal abnormalities in 18 patients (14,0%), in 2 of them were detected structural chromosomal abnormalities with 22q chromosome.

**Conclusions:** Investigation on methods of primary prevention prenatal diagnosis (fetal ultrasound, karyotyping) is essential to reduce the frequency of chromosomal abnormalities and congenital malformations.

**Key words:** velocardiofacial syndrome, chromosome, prenatal diagnosis.

## CADASIL

**Rotaru Ion**

*Academic adviser:* Amoaşii Dumitru, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction**: Cerebral autosomal dominant arteriopathy with subcortical infarctions and leukoencephalopathy (CADASIL) is a single gene disorder of the cerebral small blood vessels caused by mutations in NOTCH3 gene. The disease has been recently described and the exact prevalence is unknown currently, but the number of the reported cases is increasing as the clinical picture is better known due to active research work in this field. The main clinical manifestations are recurrent stroke, migraine, psychiatric symptoms, and progressive cognitive impairment. The clinical course is highly variable, that's why the disorder is often misdiagnosed. The pathological hallmark of the disease is the presence of granular osmiophilic material in the walls of the affected vessels, which can be detected in skin biopsy. The diagnosis is important as the clinical course and the prognosis differ between patients with CADASIL and those with other common cerebral small vessel diseases. Moreover, the usual therapy for ischemic stroke, which includes thrombolytics, antihypertensive agents and statins, has been not validated for CADASIL patients.

**Conclusion:** In the Republic of Moldova was described one family affected by this disease. I will present a family tree which includes three generations, persons that suffered of this disease and age at which the main manifestations appeared. As very little is known about the disease, I think my presentation will clarify how the disease occurs and what can be done and, not less important, will call attention on this issue.

**Key words**: Record Card, statins, antihypertensive agents.

## ANALYSIS OF INVOLVEMENT OF NANOPARTICLES FULLERENE $C_{60}$ IN REGULATION INNATE AND ADAPTIVE IMMUNE REACTIONS

**Mamontova T., Kaidashev I., Vesnina L., Mikituk M., Bobrova N., Kutzenko N., Kutzenko L.**

Research Institute for Genetic and Immunologic Grounds of Pathology, Ukrainian Medical Stomatological Academy, Poltava, Ukraine

**Background:** Nanoparticles fullerene C60 (FC60) have offered new hope for detection, prevention, and treatment in modern medicine due to their key properties, small size, enhanced permeability, surface modification and retention effects. However, the effects of nanoparticle properties on the immune system are still being explored. The main purpose of this investigation was to assess the influence of $FC_{60}$ on functional activity of the phagocytic cells *in vitro*, production of hemagglutinins, hemolysins and level activity of complement during the primary immune response *in vivo*.

**Materials and methods:** Peripheral blood (PB) from 10 healthy donors was obtained. $FC_{60}$ was added at 0,01 and 0,1 μM/l to PB and incubated for 10 min at 37°C. Level of phagocytosis, Nitroblue Tetrazolium (NBT)-test, level of myeloperoxidase activity, zimozan-induced chemiluminescence was assayed. Peripheral blood mononuclear cells were incubated with PE-conjugated mAb to CD54 and analyzed by flow cytometry. Balb/c mice were immunized by 2% suspensions of ram red blood cells for induction of the primary immune response. Mice were treated i.p. with 50 ng of $FC_{60}$ during 1, 3 and 6 days after induction of the primary immune response. Titre of hemagglutinins was determined by reaction of hemagglutination, titre of hemolysins – by reaction of immune lysis, activity of complement – by immune hemolysis.

**Results:** The results demonstrated that $FC_{60}$ did not affect the phagocytic activity of neutrophils at any doses. $FC_{60}$ significantly decreased level of myeloperoxiase activity in neutrophils in doses 0,01 and 0,1 μM/l. $FC_{60}$ significantly increased the indices of the NBT-test in neutrophils in dose 0,01 μM/l. Addition of $FC_{60}$ to peripheral blood suppressed zimozan-induced chemiluminescence in doses 0,01 and 0,1 μM/l. Moreover, $FC_{60}$ strongly reduced level of expression CD54 on lymphocytes and monocytes in doses 0,01 and 0,1 μM/l, but did not effect on neutrophils. The study revealed that $FC_{60}$ induced the production of hemagglutinins and hemolysins, especially in initial and maximum phase of the generation antibodies during induction of the primary immune response. Additionally, $F_{C60}$ induced the complement system activation and enlarged its activity after induction of the primary immune response.

**Conclusion:** The studies showed that $FC_{60}$ can influence on immune reactions via different mechanisms. $FC_{60}$ negatively alter phagocytic activity of immune cells *in vitro*, but it positively influence on production of hemagglutinins and hemolysins, level activity of complement during the primary immune response in Balb/c mice *in vivo*. Thus, $FC_{60}$ provides a potential perspective medical application because it can display immunomodulatory properties which are directed on the innate (phagocytosis and complement system) and adaptive mechanisms (production antibodies) of immune system.

**Key words**: nanoparticles, fullerene $C_{60}$, immune reactions.

## DISTRIBUTION OF THE CCR5 Δ32 MUTATION IN POPULATION GROUPS IN ROMANIA

**Farcas Marius Florin**

*Academic adviser:* Popp Radu Anghel, M.D., Ph.D., University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania

**Introduction:** The CCR5 gene encodes a chemokine receptor used by HIV-1 to gain entry into CD4+ T cells. The CCR5 Δ32 mutation is a 32 base pair deletion that confers resistance against HIV-1 by introducing a premature stop codon and thus abolishing the receptor. The allelic frequency of this mutation in European populations is on average 10%, while in Indian groups the average frequency is 1%.

**Methods:** By means of molecular genetics techniques, respectively PCR-Simplex (Polymerase Chain Reaction-Simplex), we investigated the genotype and allelic distribution of the CCR5 Δ32 mutation in two study groups from Romania, one consisting of 166 Romanian healthy individuals and the other of 133 healthy Roma ethnics.

**Results:** In the Romanian population group we found 144 wild-type homozygous subjects, 21 heterozygous subjects and one subject which was homozygous for the Δ32 allele, while in the Roma ethnic group 111 subjects were wild-type homozygous and 22 heterozygous. The observed allele frequencies for the Δ32 mutation in the two study groups were 7% in the Romanian population group, respectively 8.3% in the Roma ethnics.

**Conclusions:** This is the first study performed on populations groups from Romania concerning the distribution of the CCR5 Δ32 mutation. At the present moment there is not a single clear explanation to why such a high frequency of the CCR5 Δ32 mutation is found in Roma ethnics and while genetic drift, population mixture, or a specific founder effect can explain in part this required to elucidate the matter.

**Key words:** heterozygous subjects, chemokine receptor.

## STUDY OF EMBRYOTOXIC, FETOTOXIC AND TERATOGENIC PROPERTIES OF ENTOMOLOGIC DRUGS

**Konstantinova Nadejda**

*Academic adviser:* Pogonea Ina, M.D., Ph.D. Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Embryotoxic and teratogenic properties of entomologic drugs were studied preclinically. Studied drugs are obtained from insects Lepidoptera, at different stages of metamorphoses (Imupurin- obtained from pupae, Entoheptin-from eggs, and Imuheptin-from eggs and pupae of Lepidoptera).

**Purpose and objectives:** The research was conducted in two stages, with the aim: determining of embryo- development disorders (I step-antenatal, and II step–postnatal observations).

**Material and methods:** Initially, we tested the embryotoxic and fetotoxic activities of tested drugs in rats. Tested substances were administered in 2 ml of 0,9% NaCl solution via a gastric tube, daily, at the same time; the control group received 2 ml of 0.9%NaCl solution. Daily observations not found behavioral deviations during pregnancy in females, included in the experimental groups in comparison with the control group. In the second step we evaluated the teratogenic action of tested substances, and postnatal development in the first 60 days of descendant's life.

**Results**: After administration of tested drugs, rats became slightly more active for 10 minutes, with subsequent recovery. Examination of skin, mucous membranes and hairiness showed no pathological changes. Body weight in rats of all groups increased an average with 30g. On the 20th day of pregnancy studied females were euthanized. It was studied preimplantation mortality index, which determines the difference between the number of corpora lutea in the ovaries and the number of implanted sites in the uterus, which is equal to 0. Then we calculated preimplantation index equal with the ratio of preimplantation places and the number of embryos, being equal to 0. Number of descendants born by primiparous

females is on average 3-4 individuals, corresponding to the number of descendants born by females from vivarium. In all neonates were determined craniocaudal length and body weight, which are on average 3.74 g and 27.5 mm respectively. External examination revealed no abnormalities. Behavior of studied rats did not differ from the behavior in control group. Tooth eruption took place at the 8th day of life, hair growth on the 11-day, opening eyes to the 15-day, all corresponding age rats. At euthanasia of newborns developmental abnormalities were not detected.

**Conclusions**: No embryotoxic effects were detected in tested drugs use. No differences in reproductive performance (conception and pregnancy) between experimental group and the control group. Thus, no embryotoxic, fetotoxic and teratogenic effects were seen in pregnant females treated with entomologic drugs.

**Keywords:** entoheptin, imuheptin, imupurin, entomology, Lepidoptera, embryotoxicity, teratogenicity.

## ATTITUDES, OPINIONS AND BEHAVIOU OF YOUNG PEOPLE ON REPRODUCTIVE HEALTH FROM THE INSTITUTIONS OF HIGHER EDUCATION FROM CHIŞINĂU

**Ceban Tatiana, Povar Vladimir**

*Academic adviser*: Ferdohleb Alina, M.D., Ph.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Reproductive health is internationally recognized as a fundamental component necessary for human development, on which the general health of population, prosperity and the development of all countriesdepends.Reproductive health is a priority field of the WHO, which in 2001 developed the European Strategy in Sexual and Reproductive Healthand suggested that all 51 countries-members 51 deof the European Councilshould elaborate similar strategical documentsaccording to the national specific.

**Aims and Objectives:** Evaluation of attitudes, practices and sexual behaviour of young people, including: influence of the sexual education received in the family on sexual behaviour; knowledgeon sexually transmitted infections and HIV/AIDS; opinions and attitudes aboutappropriate sexual behaviour and detection of risks associated to sexual experience; contraception and pregnancy;- is a primordial basis of family planning.

**Methods:** Doing this research we used the historical, mathematical, statistical, epidemiological, sociological, comparative analyze methods. This research collected information from Register of the National Bureau of Statistics, which included information from the official documents and some information from the researches in the field. 216 students from 4 institutions of higher education from Chisinau participated at the research. 16.6 % of the participants are boysand 83.3 % - girls, all of them 18-30 years old. Their average age is of 24 years.

**Results:** 39.09% of the young confirmed that they have never discussed with the parents on topics related to sexuality. 51.86% of the respondents didn't know that HIV/SIDA, gonorrhoea and syphilisare sexually transmitted infections. Approximately 40.0% of the sexually active young had more than 1 partner during last year. 76.47% of the respondents don't use regularlycondoms, 40.0 % of which have never used them. About 20% of the sexually active people presented risks associated to anterior aborts.

**Conclusion:** From the analysis of thesexual behaviour and the opinions of the young people we have concluded that there is a number of risk factor for their reproductive health. We haven't found significant

difference between the behaviour of studentsfrom different institutions, only knowledge in the field ofIT-Sand contraception varies, prevailing at USMF "NicolaeTestemitanu".

**Keywords:** Young persons, reproductive health, family planning, sexual behaviour.

## THE DETERMINATION OF THE MELATONIN RECEPTORS EXPRESSION (MT-1, MT-2) IN A STOMACH AND DUODENAL MUCOUS MEMBRANE AS A WAY TO PREDICT THE PYLOROBULBAR ULCERS ACTIVITY

**Gryazev A., Presnov R.**

*Academic adviser:* Osmanov Z., M.D., Ph.D., Sankt Petersburg State Medical University "I.P. Pavlov", Sankt Petersburg, Russian Federation

**Introduction:** In spite of all prognoses by the late 1980's the revision of the medicamental treatment principles didn't lead to expecting complication rate decreasing.

Furthermore, over the last 10 years the number of patients with stomach and duodenal ulcers, which enter the hospitals in Russia because of ulcer perforation, increased in 2,7 times and the number of ulcer bleeding patients – in 2,2 times.

All this evidences point out the necessity to determine new factors of the ulcer pathogenesis and to find new mechanisms of the ulcer formation.

Subject to melatonin properties at the level of the whole body (biorhythm, antioxidant, immunomodulatory effect) and also at the level of the digestive system (participation of the motor activity, microcirculation and proliferation); it's easy to see, that a melatonin plays a great part in pathogenic mechanisms of the ulcer formation and exacerbation. Recently the papers, pointing to receptor-mediated mechanism of the melatonin anti-inflammatory effect, appeared.

**Aim:** This study's aim is to determine connection between receptor expression to melatonin (MT-1, MT-2) and probable ulcer complication prognosis.

**Materials and methods:** Our research consists of two parts. In experimental one we got primary specific antibodies to MT-1, MT-2. The peptide, duplicating amino-acid sequence of active MT-1, MT-2 receptor centers, was synthesized in Research institute of particularlycleanbiological preparation.

In clinical part we exposed stomach and duodenal mucous membrane cells with MT-1, MT-2 receptors by indirect immunofluorescence. 35 patients were researched, they divided into few groups: uncomplicated ulcer – 16 patients, ulcer with perforation – 6, ulcer with bleeding – 5, control group – 8.

**Results:** In uncomplicated ulcer group there were 7% MT-1 and 6,5% MT-2 melatonin receptors, in ulcer perforation group: 9,56% MT-1 and 2,53% MT-2; in ulcerbleeding group – 10,56% MT-1 and 1,46% MT-2; incontrol group – 16% MT-1 and 14,7% MT-2. After carefully examination of the groups with complications it was founded, that 85% patient has a similar melatonin receptor distribution (the receptor number decreased and decreasing MT-2 relative to MT-1 – 4 times).

It was exposed 4 patients in group without complications, which can be in a complication group according to results. We can suppose that they are in a risk group of the ulcer complications and they need more careful control and perspective researching.

**Conclusions**:

- Patients with any ulcer defect have depressed level of the melatonin receptors.

- There is decrease of MT-2 receptors relative to MT-1 in 4 times in group of patients with ulcer complication. It can be used in complication prediction.
- Probably, the duration of ulcer case history influences the melatonin receptor expression, but we need additional study and general sampling to prove this.

**Key words**: melatonin, pylorobulbar ulcers.

## BIOCHEMICAL ANALYZE AS INDIRECT MARKER OF SEPSIS

**Glavan Dan**

*Academic adviser:* Cernit V., M.D., University Assistant, Bahnaru V., M.D., State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Sepsis is a complex pathophysiological disorder arising from systemic inflammatory response to infection. The inflammatory cascade has two limbs: one- inflammatory and one- pro-coagulant. Endothelium plays an important role in activation of clotting system and, simultaneous, in suppression of fibrinolitic system, that appears to be an essential component in the development of multi-organ failure (MOF). The objective of this study is analysing and describing clinical signs and biochemical values in adults with sepsis syndrome, which could allow the screening of indirect features of sepsis followed by early treatment as soon as possible.

**Methods:** Thirty patients meeting the inclusion criteria who got admitted to the ICU at Municipal Clinical Hospital N3, Chisinau, between 2008-2010 were studied. Detailed history was taken and physical examination performed. Patients were investigated according to the clinical situation as defined by criteria set by the ACCP/SCCM Consensus Committee. Biochemical values were done on admission to detect metabolic derangements and organ dysfunction. The tests were repeated during 7 days depending on the severity of the derangement.

**Results:** The patients were divided into two groups: the first group-20 patients with septic complications and the second group- 10 non-septic patients. The comparative analyze of biochemical profiles was performed between the groups. Thus, in the first group, on admission, the average level of fibrinogen is 5,102 g/l and the average level of indirect bilirubin is 20,14 mcmol/l. The correlation coefficient between prothrombin and ASAT is - 0,89434. In the second group, on admission, the average level of fibrinogen is 5,14 g/l and the average level of indirect bilirubin is 29,16 mcmol/l. The correlation coefficient between prothrombin and ASAT is 0,091.

**Conclusions:** Biochemical profile analyze of patients from both groups reveals a multiple organ dysfunction (MOD) in first hours of septic process. Thus, the indirect relation between hepotocyte injury markers (ALAT/ASAT) and prothrombin reveals hepatic failure, triggered in first hours of sepsis. Fibrinogen elevated levels in first 24-72 h reveals the suppression of fibrinolysis and the activation of clotting system with the spread of microthrombi in the microcirculatory bed and perfusion disorders. Hyperbilirubinemia due to indirect bilirubin confirms hepatocyte affection with the involvement of microsomal enzyme systems, which are exhausted in hypercatabolism conditions and ATP deficiency.The study confirms the alteration of clotting system, even in the first hours of septic process installation and the necessity of early supervised thrombolytic therapy.

In the absence of specific markers in sepsis diagnosis, we could sense the evolution of septic complications through indirect analyze of patient's biochemical profile with the early begining of resuscitation therapy.

**Key words:** sepsis, systemic inflamatory response, clotting system, fibrinogen, prothrombin, hyperbilirubinemia.

## THE INFLUENCE OF THE PULSED ELECTROMAGNETIC FIELDS ON THE PROLIFERATION AND MORPHOLOGY OF MESENCHYMAL STEM CELLS

**Lîsîi Corneliu, Sainsus Iurie**

*Academic adviser:* Nacu Viorel, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

Stimulation of cell division is the source of physiological recovery that provides the most reliable perspective in tissue engineering. A non-invasive and accessible method of amplifying the process of cell division is using electromagnetic fields.

Our **purpose** was to analyze the pulsed electromagnetic fields capacity to influence the cellular proliferation *in vitro*. For this purpose, were used cell cultures of mesenchymal stem cells, derived from 14 days aviary embryos. Cells were subjected to a quasi-rectangular pulsed electromagnetic field with duration of 300μs, a frequency of 7.5 Hz, 2hours each day for 7 days.

The **results** indicate a rise with 25% of the number of cells subjected to the magnetic field, and this report was not influenced by the cell density. The cell morphology showed no difference between groups.

These results suggest the possibility of using low frequency pulsed electromagnetic fields in tissue engineering with the purposes to accelerate mesenchymal stem cell division, which can be applied in bone regeneration therapy.

**Key words**: Stem cell, pulsed electromagnetic field, cell culture, tissue engineering, bone regeneration.

## CONSTITUTIONAL FEATURES OF THE CENTRAL BRANCHES OF SPHENOIDAL SEGMENT OF MIDDLE CEREBRAL ARTERY

**Ermakova Ilona, Galats Ksenia, Kapustinskiy Andrei**

*Academic adviser:* Shnyakin Pavel, M.D., Ph.D., Professor; Samotesov Pavel, M.D., Ph.D., Professor; Dralyuk Mihail, M.D., Ph.D., Professor, State Medical University "V. F. Voyno-Yasenetsky", Krasnoyarsk, Russian Federation

Pathology of the central perforating arteries of the brain has an important place among the cerebrovascular diseases. Since the structure of a hemorrhagic stroke hypertensive intracerebral hemorrhage occupy the first place. From all off the central perforating arteries, the greatest interest presents the lentikulostriales artery middle cerebral artery (MCA), a gap which leads to the formation of hemorrhages in putamen area. Due to the functional significance of these arteries goal: to identify options for building lentikulostriales arteries depending on the length of the sphenoid segment of the MCA in patients with different forms of the skull. The study was conducted at the Department of Topographical Anatomy and Operative Surgery KrasGMU. Studied 68 drugs with drawn from the brain dead who died of causes unrelated to the CNS. Prior to removal of the brain were measured longitudinal and transverse size of the skull with cranial index calculation and allocation: dolicho, meso-and brachycephalic. In the brain after

the brandy seized arterial and microdissection, studied and extending from the SMA it lentikulostriales artery. Sphenoid segment of the area (SMA) arteries: from the bifurcation of the internal carotid artery to the bifurcation. The average length of the sphenoid segment amounted to 15,9 ± 2,3 mm. According to the literature there are three groups lentikulostriales arteries: medial group - direct the course of the artery (4 branches), the intermediate group - in the form of candelabrer-shape artery (up to 8 branches), and lateral group of S-shaped arteries (up to 9vetvey). This type of structure lentikulostriales arteries is called a «classic.» According to our data, this type of structure occurs in 62% of cases, most often in dolichocephals (80%). Besides the classical type of structure we have selected an intermediate type of structure, in which the background to the medial and lateral group of arteries in the middle parts of the MCA was located only one type of container beam, radiating to the substance of the brain up to eight branches. This type of structure met lentikulostriales arteries in 20% of cases, most often in brachycephalic (25%). Of greatest interest is allocated to us, the beam type structure lentikulostriales arteries. In this type of structure throughout the MCA in the middle parts of the beam had the only large vessel, smack in the matter of the brain up to 14 branches. This type of structure occurs in 18% of cases. Most often in brachycephalic (30%) and did not meet with dolichocephals. The analysis of options for building lentikulostriales arteries, depending on the length of the sphenoid segment of the MCA. The classic type of structure met with the length of the sphenoid segment of 3.1 mm to 20mm. The intermediate type of structure - with a length of 11.8 mm to 18.1 mm. Beam-type structure with a length sphenoid segment from 11.7 to 15.2 mm. The correlation analysis between the length and type of sphenoid segment lentikulostriales arteries revealed that the shorter barrel of the AGR, the more likely the beam and an intermediate type of structure. Thus, the length of the sphenoid segment can serve as a guide for determining the type of structure lentikulostriales arteries.

**Key words:** (the) lenticulostriales artery, (the) middle cerebral artery, (the) perforating arteries of the central brain

## THE EFFECTS OF DIFFERENT INHIBITORY PATHWAYS OF PROSTAGLANDIN E2 BIOSYNTHESIS ON RENOMEDULLARY INTERSTITIAL CELLS IN RATS

**Popovici Mihaela, Demirci Sibel**

*Academic adviser:* Seckin Ismail, M.D., Ph.D., Professor, Cerrahpasa Medical University, Istanbul, Turkey

**Introduction:** Renomedullar interstisial cells (RMICs) are the prevalent cells in inner medulla. The multiple lipid granules found in their cytoplasm are believed to be storage units for precursors of prostaglandins (PGs), prostacyclins and medullipin, particulary PGE2. The aim of the study was to examine the effects due to the inhibition of PGE2 synthesis via different pathways on the RMIC function, the number of lipid granules, medullary hyaluronan (HA) content and cell viability.

**Materials and Methods:** Thirty-two adult male Wistar albino rats, 180-200g, were randomly divided into four groups (n=8): The control group was treated with intraperitonal (ip) 0.9% isotonic salt water; the second group was injected with dexamethasone (DEX) (3 mg/kg, 10 days), inhibiting AA release and PG synthesis by PLA2; the third group was treated with ip indomethasine (IND) (1 mg/kg, 10 days) to inhibit non-specific COX; the fourth group was injected with ip celecoxib (CXB) (1 mg/kg, 10 days) to examine selective COX-2 inhibition. Ten days later, the dissected renal medullas of sacrificed animals were analyzed with light and electron microscopy. The lipid granules were counted in 50 random RIMCs for each animal (x 6.000 magnification).

**Results:** The morphometric analysis showed that the number of lipid granules is significantly decreased in DEX group, and it is significantly increased in IND and CXB groups when compared to the control group. Moreover, medullary HA content and CD44 immunoreactivity were significantly increased in DEX, IND and CXB groups compared to control group. Regarding cell viability, we found that RMIC apoptosis was significantly higher in PGE2 inhibited groups when compared to control group.

**Coclusions:** These results suggest that lipid granules may be numerical and functionally influenced by PGE2 changes. The functional changes in RMICs through PGE2 may influence HA amount of medulla interstitium, the granules might be storage units of AA and finally, PGE2 inhibition may lead to RMIC apoptosis. Besides, 24 hours urine values collected on the 10th day were significantly increased in DEX and IND groups, but similar to the values of control group in CXB group.

**Key Words:** renal medulla, non steroidal anti-inflammatory drugs (NSAIDs), prostaglandin E2 (PGE2), renomedullar interstitial cells (RMICs), cyclooxygenase-2 (COX-2).

## SUICIDE AMONG THE YOUNG PERSONS – HEALTH AND SOCIAL ISSUES

**Zaporojan Aculina, Topada Ivan**

*Academic adviser:* Ferdohleb Alina, M.D., Ph.D., University Assistant; Morosanu Mihail, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Globalization, automation, computerization and other processes of modern life made from our modern life style a danger. Nowadays, diseases caused by stress are the main causes of death. Suicide became a disease of modern life style and in the same time a problem of public health, being the 11$^{th}$ cause of death rate in the world and the second cause of death rate among the human beings aged 25-34 years old.

**Aims:** The goal of our research was to evaluate the characteristics and the etiology of this phenomenon from the health and social position. The objectives included both the study and the analysis of the bibliographical research.

**Methods:** In this research we based on the information from The National Bureau of Statistics, which included information from the official documents (reports) and some information from the researches in the domain.

**Results:** The number of suicides in 2002 in the Republic of Moldova was 16.09‰ per 100 000 inhabitants and in 2009 it was 18.26‰. This growth of 2.17‰ denotes that human beings who committed suicide are more numerous by 74 than in 2002. In 2009, 651 persons committed suicide (32.43‰ men and 5.13‰ women) in the Republic of Moldova. In urban regions 22.33 men per 100 000 inhabitants and 4.09 women committed suicide, in rural localities 39.31 men per 100 000 inhabitants and 5.89 women. The predominant ages in men committing suicides are: 1)50-59 years-old; 2)40-49 years old; 3)60-64 years old. The predominant ages in women committing suicides are the following: 1)50-59 years old;2) 65 and over; 3)40-49 years old. The teenagers maintain an increased rate, if in 2005 173 teenagers committed suicide then in 2009 146 teenagers committed suicide, the figure decreased by 27 persons.

The causes of suicide, depending on age group: 1)Minors up to10 years old- school stress, family breakdown, 2) 10-14-family breakup, school failure, fear of punishment, abuse of parental authority, 3) 15-18 year-depressive conditions, conflicts with parents, and their loss.

**Conclusion:** The suicide became a problem in the public health because it is an increasing trend in

the human being's life. Each age has its reasons for people`s suicide. We need a classification of causes for each group of age for choosing the correct methods of settlement of this phenomenon.

**Key words:** young persons, suicide, modern life style, stress.

## MONITOR OF THE EPIDEMIOLOGICAL SITUATION OF HIV INFECTION AMOUNG PEOPLE

**Brunchi Lucia**

*Academic adviser:* Ferdohleb Alina, M.D., Ph.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** HIV/AIDS represents a very major and serious disease affecting more and more people early age. At the end of 2010 an estimated - 34 million [31.6 million – 35.2 million] people globally living with HIV, 2.7 million [2.4 million – 2.9 million] new HIV infections in 2010, 1.8 million [1.6 million – 1.9 million] people died of AIDS-related illnesses in 2010. According to CDC published, new incidence of HIV infections estimates in 2011 showed that the annual number of new HIV infections was stable overall from 2006 through 2009. According to UNAIDS and WHO estimates, 47% (6.6 million) of the estimated 14.2 million people eligible for treatment in low- and middle-income countries were accessing lifesaving antiretroviral therapy in 2010, an increase of 1.35 million since 2009. The 2011 UNAIDS World AIDS Day report also highlights that there are early signs that HIV treatment is having a significant impact on reducing the number of new HIV infections. In Moldova, during 1987-2007 there were detected 4201 HIV infected persons, including the territories from the right bank of the eastern territories of the republic, 2939-1192 people and 70 foreigners.

**Methods:** This article reflects the information given population through computerization and flash-mob organization to the World Day in order to combat HIV / AIDS – December 1. The following methods were used: observation, epidemiological, historical, economic and demographic. For further computerization and HIV / AIDS 27 students of "Nicolae Testemitanu" State Medical and Pharmaceutical University performed a flash mob in Chisinau center for the population.

**Results:** Work done in informing people has increased the knowledge about this disease. Goals, objectives, strategies and activities for implementation in infections disease control, combating HIV/AIDS is provided in the National Health Policy of the Republic of Moldova, Law "On HIV/AIDS".

**Conclusion:** It's necessary continuously to monitor the epidemiological situation of the HIV infections in developing preventive measures.

**Keywords:** HIV/AIDS, incidence, information.

## CLINICAL PECULIARITY OF THE MITOCHONDRIAL ENCEPHALOPATHY

**Hadjiu Elena**

*Academic adviser:* Hadjiu Svetlana, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Mitochondrial encephalopathy is a rare genetic disease with a varied symptomatology and represents a major diagnostic problem.

**Aim:** Monitoring of the clinical- paraclinical manifestations in order to confirm the diagnosis of mitochondrial encephalopathy.

**Materials and methods:** There were investigated seven children between 3-15-year-old suspected by a positive diagnosis of mitochondrial encephalopathy. The following laboratory tests were performed: serum creatinine, creatinine kinase, serum lactate, EMG, brain CT, brain MRI, muscle biopsy.

**Results:** We observed that children suspected with mitochondrial encephalopathy often presented in neurological manifestations: neuropsychological retardation, myoclonic epilepsy, headache, pseudoictale seizures, vomiting, ataxia, sensory hearing loss, dementia, retinitis pigmentosa; and extraneurological: hypertrophic cardiopathy, endocrine disorders, iron-deficiency anemia, lactic acidosis, physical retardation, short stature. Laboratory tests revealed lactic acidosis in six cases and hyperpyruvatemia in one case. Muscular biopsy: in five cases- presence of red muscle fibers in flaps. EMG pattern: in four cases- myopathic potential, in three cases - signs of peripheral neuropathy. MRI scan: in three cases - hypodense foci, in two cases - cortical atrophy, in one patient- hyperintense areas were found in the basal ganglia and brainstem, in another case - calcification in the basal ganglia. The study was mainly based on characteristic clinical signs, MRI pattern and muscle biopsy.

**Conclusions:** We suggest that the heterogeneous symptomatology of mitochondrial encephalopathy is one of the causes why patient see different specialists in order to seek the diagnosis. The most common clinical symptoms are brain, muscle, cardiac and neuro. The suggestive symptoms of CNS damage are the most frequent in these patients. The genetic test and neuroimaging method have the major role in mitochondrial encephalopathy diagnosis confirmation. The presence of red fibers in skeletal muscle and the biochemical results characteristic to the mitochondrial defects support the diagnosis. But, the decisive diagnostic test represents the DNAmt molecular analysis.

**Key words**: mitochondrial encephalopathy, laboratory tests, imaging exam.

## CHANGES IN HEART RATE VARIABILITY INFLUENCED BY HYPERVENTILATION AND EVOKED PSYCHOEMOTIONAL STATES

**Sidorenko L., Tiganu S.**

*Academic adviser:* Vovc V., M.D., Ph.D., Professor; Ion Moldovanu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** This study aimed to investigate ventilatory correlates of conditioned psychoemotional states – responses to fear, anxiety and restful states and heart rate variability. Respiratory, end-tidal carbon dioxide pressure (PetCO2) and heart rate changes were studied in a differential fear and anxiety conditioning paradigm as well as in a restful state paradigm. We aimed to find out which kind of images, evoking a corresponding psychoemotional state, induce changes in respiration, causing hyperventilation and in heart rate variability. Medically unexplained dyspnea refers to a condition characterized by a sensation of dyspnea and is typically applied to patients presenting with anxiety and hyperventilation without underlying cardiopulmonary pathology. We were interested to know how anxiety triggers hyperventilation and elicits subjective symptoms in those patients. Using an imagery paradigm, we investigated the role of fearful imagery in provoking hyperventilation and in eliciting symptoms, specifically dyspnea and heart rate variability as well as the role of restful psychoemotional state.

**Methods:** Twenty-eight patients with medically unexplained dyspnea matched for age and gender were exposed to scripts and asked to imagine both fearful and restful scenarios of images, while end-tidal

$PCO_2$ ($PetCO_2$) and breathing frequency were recorded and subjective symptoms evaluated. The subject who had $PetCO_2$ falling more than 5 mmHg from baseline and persisting at this low level for more than 15 seconds in the imagination was regarded as a hyperventilation responder. Parallel was registrated cardiac activity.

**Results:** In patients with medically unexplained dyspnea, imagination of fearful scenarios, induced anxious feelings, and provoked a significant fall in $PetCO_2$ ($P<0.05$). Breathing frequency tended to increase. 18 out of 28 patients were identified as hyperventilation responders compared to 8 out of 28 normal subjects without hyperventilation($P<0.01$). The patients reported symptoms of dyspnea, palpitation or rapid heart beat in the same fearful script imagery. Additionally, $PetCO_2$ fall was significantly correlated with the intensity of dyspnea and palpitation experienced during the mental imagery on one hand, and with anxiety symptoms on the other. Restful scenarios of images induced also hyperventilation but in comparison fearful scenarios of images they differ qualitative. Heart rate variability changed in case of hyperventilation in correlation with restful scenarios of images.

**Conclusions:** Fearful imagery provokes hyperventilation and induces subjective symptoms of dyspnea and palpitation in patients with medically unexplained dyspnea. Restful imagery provokes hyperventilation and induces changes in heart rate variability by increasing. The difference between the both hyperventilatory states is that in case of fearful imagery we observe tachypnoe and in case of restful imagery – hyperpnoe.

**Key words:** heart rate variability, hyperpnoe, fearful script imagery.

## THE STEM CELLS IN CHRONIC EXPERIMENTAL LIVER DISEASES

**Slivca O., Mocan E., Munteanu V., Cociug A.**

*Academic adviser:* Nacu Viorel, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Chronic liver diseases (CLD) are increasing worldwide affecting almost 17% of general population. In the Republic of Moldova during the last ten years the incidence and prevalence of CLD had increased continuously. The liver cirrhosis in our country is the third cause of death after cardiovascular diseases and cancer. This situation is the result of a high prevalence of infectious viral hepatitis, alcohol and hepatotoxic drug abuse, and the unavailable so far of the orthotopic liver transplantation (OLT), the only curative treatment for the end stage liver diseases. The number of patients waiting for an OLT has increased during the last years, meanwhile the organ donation has not kept up with demand. Consequently the organ shortage is increasing the morbidity and mortality of patients on waiting list. This clearly implies the need for finding alternative solutions for the patients with end stage liver disease, and stem cell therapy is the one that gives the most hope so far.

The aim of this study was to induce chronic experimental liver disease in rats, then transplant stem cells and further evaluate the effect on liver function.

**Material and methods:** Chronic liver lesions were induced on white female rats of 6-8 months age, weighting 210-250 mg, by injecting CCL4 subcutaneously, dissolved in olive oil, twice a week, for 8 weeks. At the end of 6 weeks the rats were divided into 5 groups with further intrasplenic transplantation of $6\times10^3$ allogenic stem cells (SC) performed. The animals in group 1 received blood marrow SC, the second group received umbilical cord SC, the third group received hepatic fetal SC. The fourth and fifth groups received intrasplenic saline solution only. Meanwhile we continue to inject CCL4 subcutaneously

twice a week for the groups 1,2,3 to prevent endogenous liver regeneration and allow the stem cells to act. For the fourth group we continue with CCL4 and for the 5 without CCL4 to allow endogenous regeneration for another 6 weeks. The animals were sacrificed at 10, 20 and 40 days after transplantation, and there were collected 5 ml of blood and the liver specimens.

**Preventive results:** After 6 weeks of CCL4 administration 90% of rats presented weight loss ranging between 5 to 20%, and signs of coagulopathy like periocular bleeding. The 6 rats sacrificed just before the SC transplantation proved the presence of ascites and yellow, nodular liver changes. Histological examination showed the presence of infiltration of the liver with neutrophils, regenerating nodules of hepatocytes and the deposition of connective tissue between these nodules.

**Conclusions:** Further biochemical, histological and immunohystochemical analyses have to be done on liver specimen and collected blood to evaluate the effects of SC therapy on the end stage of the liver disease.

**Keywords**: chronic liver disease, allogenic stem cells, intrasplenic transplantation.

## DIFFUSE TOXIC GOITER WITH IRRITABLE BOWEL SYNDROME AND SERT GENE POLYMORPHISM

**Moskaliuk I., Moskaliuk V., Chympoy K.**

*Academic adviser:* Fediv O., M.D., Ph.D., Professor, Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction**: The irritable bowel syndrome (IBS) is a complex disorder that is associated with altered gastrointestinal motility, secretion, and sensation. Serotonin directly and indirectly affects intestinal motor and secretory function and abnormalities may lead to either constipation or diarrhea. The serotonin selective reuptake transporter (SERT), terminates the actions of serotonin by removing it from the interstitial space. Polymorphisms in the promoter region of the SERT gene have effects on transcriptional activity, resulting in altered serotonin reuptake efficiency.

**The aim** of this study was to assess the potential association between SERT polymorphism and type of intestine disorder in patients with diffuse toxic goiter and irritable bowel syndrome.

**Material and methods:** We have investigated 38 women with diffuse toxic goiter and irritable bowel syndrome. DNA of all subjects was analysed by polymerase chain reaction based technologies for SERT polymorphism. The patients were divided into 3 groups. The first group included 12 patients with diffuse toxic goiter combined with IBS with a predominance of diarrhea, second group - 12 patients with a predominance of constipation. Third group consisted of 14 persons with thyrotoxicosis without violation of the digestive system.

Results: In a first group of patients we have found all types of polymorphism: 67% homozygous LL alleles carriers gene SERT, 25% - SS-genotype, and only 1 patient (8%) was heterozygous carrier of LS-variant. Among persons of second group were 75% patients with LS-genotype, 25% had SS-variant. In the third group 79% patients had SS-genotype and 21% - LS-genotype.

**Conclusion:** These results confirm the association between SERT gene polymorphism and diffuse toxic goiter with IBS.

**Key words:** irritable bowel syndrome, serotonin, gene, diffuse toxic goiter.

# EFFECT OF TRANSPLANTATION OF MESENCHYMAL STEM CELLS OF ADIPOSE TISSUE ON THE DYNAMICS OF HEALING OF LONG-TERM NON-HEALING INFECTED WOUNDS IN EXPERIMENTAL CONDITION

**Sahab Haidar A.**

*Academic adviser*: Tretiak S., M.D., Ph.D., Professor, Belarusian State Medical University, Minsk, Republic of Belarus

**Aims:** To study the effect of mesenchymal stem cells (MSC) on the dynamics of healing of wound defect in experimental animals.

**Materials and Methods:** To carry out the experiment, adult rats (Vistar) weighing 160-200g were used. A round wound was modeled on the back of the animals. The bottom and edges of the wound were infected by injecting a 24-hour monoculture reference strains of bacteria (Staphylococcus aureus $1*10^9$ CFU/ml). After 2 days, following infection wounds turned purulent. All animals were divided into two groups: rats with transplanted MSC (experimental group) and rats with antiseptics (hydrogen peroxide 3%, chlorhexidine 0.05 %) (controls). In two groups, carried out a dynamic and determined by planimetry of the dynamics of wound healing. Wound area was determined according to the formula S – Sn/S x T x 100% (Popov L.N., 1942), where S- initial area, Sn- area of treatment, T- number of days between measurements. Calculations of the dynamics were carried out on the 3, 5, 7, 10 and 14$^{th}$ day after transplantation.

**Results and discussion:** Under dynamic observation of the experimental wounds in the rats it was noted that the process of healing proceeded in a heterogeneous control and experimental groups. The initial area in all animals was around 177mm$^2$. In the control group on the 3$^{rd}$ day, the area of wound remained around 177mm$^2$. In the following period of observation, the following was noted: on the 5$^{th}$ day area of wound equaled 94mm$^2$, on the 7$^{th}$ day – 35mm$^2$, on the 10$^{th}$ day it was 37mm$^2$, and on the 14$^{th}$ day – 19mm$^2$. Analysis of the parameters of area of wound in these days in the experimental group showed the following values respectively on the 3, 5, 7, 10 and 14$^{th}$ day: 118mm$^2$, 70mm$^2$, 93mm$^2$, 37mm$^2$, 9mm$^2$. Analysis also confirmed that reduction of wound size in the experimental group occurred earlier and faster compared to the controls. As regards to the dynamics of wound healing in the groups, it was noted that in the control group on the 3$^{rd}$ day, the value approximates around 7.82%, on the 5$^{th}$ day – 6.53%, on the 7$^{th}$ day – 4.6%, 10$^{th}$ day – 3.74%, and 14$^{th}$ – 3.53%. In the experimental group, dynamics of wound healing was significantly different from the controls. This meant the important role of stem cells on the process of wound healing in earlier period. So, on the 3$^{rd}$ day dynamics of wound healing in the control group was 11.11%; on the 5$^{th}$ day – 12.09%; on the 7$^{th}$, 10$^{th}$ and 14$^{th}$ day – 6.78%, 7.91%, 6.78% respectively. Based on the received results, it was noted that dynamics of wound healing experimental group was higher than in controls; especially the difference was noted in the first 7 days after transplantation of MSC.

Therefore, based on the received results, we conclude that MSC of adipose tissue fasten the process of wound healing, positively affect inflammatory process in wounds, and in a shorter time interval restore lost skin. The use of MSCs of adipose tissue is a perspective method in the treatment of long-term non-healing infected wounds.

# IMMUNOHISTOCHEMICAL ASPECTS OF ENDOMETRIOSIS

**Cazacu Eugeniu, Pretula Ruslan, Munteanu Andrei, Parnov Mihail, Cerbadji Ala**

*Academic adviser*: Vataman V., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The presence of epithelial cells in the peritoneal cavity and within the myometrium was described during the second part of the 19th century and was given the name "adenomyoma". Then, with the identification of peritoneal endometriosis in the 1920s, adenomyosis became a separate nosological entity. For decades, the two abnormalities have been considered separate benign proliferative conditions of the female reproductive tract with a different clinical profile. More recently, however, evidence has been accumulated indicating that these two diseases have in common an endometrial dysfunction involving both eutopic and heterotopic endometrium causing a reaction in the inner myometrium. It therefore seems that adenomyosis and endometriosis share a common origin in an abnormal eutopic endometrium and myometrium. ADENOMYOSIS refers to the benign invasion of the uterine musculature by the endometrial mucosa. ENDOMETRIOSIS refers to presence of ectopic benign invasive endometrial tissue outside the uterus.

**Objective**: In this study we show, results of application of fourth immunohistochemical stain method using endothelial marker of stromal cells (CD 10), oestrogen and progesterone receptor (ER and PR), cells proliferation marker (Ki 67) and marker of macrophages (CD 68). A marker that is simple to measure could help clinicians to diagnose (or at least exclude) interna or externa endometriosis; it might also allow the effects of treatment to be monitored. If effective, such a marker or panel of markers could prevent unnecessary diagnostic procedures and/or recognize treatment failure at an early stage.

**Design**: We studied hematoxylin–eosin sections and immunoreactivity of CD 10, CD 68, Ki 67, ER, PR in both cases diagnosed as compatible with endometriosis. Recent progress in immunohistochemistry has found that CD10 and Ki 67 could be important markers for endometrial tissue. Although CD10 is known as a common surface marker of acute lymphoblastic leukemia, it is also expressed in epithelial cells including renal tubular and glomerular cells, breast and salivary gland myoepithelium, prostatic glandular epithelium, and pulmonary alveolar lining cells. However, in endometriosis, CD10 is not expressed in glandular epithelial cells, but in stroma. The oestrogen and progesterone receptors, reveal the mechanism of the disease, and determine the most sensitive procedure for detecting an endometrial tissue.

**Results**: Therefore, other markers should be considered for exploring endometrial tissue. The analyses were summarized as follows: 1) the progesterone receptor_antibody showed the strongest positive staining in the nucleus of the stromal cells in comparison to the oestrogen receptor, CD10, and Ki 67; 2) the CD10 antibody_had the highest specificity in the cytoplasm of the stromal cells; and 3) the Ki 67 antibody had the widest distribution in both the endothelial and stromal cells._Strong positive staining in the nucleus of both cells against the antibodies of the oestrogen and progesterone receptors suggested that the tumor had a hormonal responsiveness related to the menstrual cycle the same as did a uterine endometrium. The CD10 antibody had a strong affinity with the cytoplasm of the stromal cells indicating the potential of a diagnostic tool for differentiating from other tumors of epithelial origin._

**Conclusions**: Peritoneal endometriotic lesions and the uterine adenomyosis have a similar immunohistochemical profile. Both endometriotic and endometrial glands are positive for CD 10, Ki 67, ER, PR, but not for CD 68. Endometriotic stroma_stains positively with endometrial–type stroma markers CD10, Ki 67 and oestrogen and progesterone receptors for the nucleus of the stromal cells. The combination of the oestrogen or progesterone receptor antibody for the nucleus and the CD10 or Ki 67 antibody for the cytoplasm could enhance the accuracy of diagnosis for endometriosis.

Endometriosis is a mystery tour as it requires decision making at every stage by the physician and the patient. Endometriosis still stand as one of the most-investigated disorders in gynecology. So is one of the highest priorities for research.

## OPINIONS OF YOUNG PEOPLE ABOUT THE ADDRESSABILITY TO PRIMARY MEDICAL CARE AND TO EMERGENCY MEDICAL CARE

**Kislyakov Iliay, Carastefan Diana**

*Academic adviser*: Etco Constantin, M.D., PhD, Professor; Ferdohleb Alina, M.D., PhD, University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The state of health of the young influences directly on the state of health of the next generations. That's why we're mentioning that at this particular group of people, the indicators of addressability after medical prophylactic examinations are low.

Effects of low addressability:

- Irrational expenditures of state budget
- Failure of complete and effective monitoring of the population's health.
- Failure of early diagnosis of many diseases.
- Patient's address to the doctor at late stages of the disease, when the treatment requires great expenses.
- In this way increases the period of incapacity, disability, mortality, etc.

Skipping doctor's appointment is an important medical and economic problem. It has been noticed that adolescents have a higher risk of skipping scheduled consultations. The present study aims to characterize the missed appointments in a multidisciplinary clinic. Moldova has the experience of 13 Friendly Health for Young people Clinics (FHYC) where young people can receive anonymous consultations with multi profile doctors.

**Methods:** There has been undergone an anonymous survey among different age groups of adolescents. Data from 2011 has been used, gathered from 100 questioned teenagers from the Lyceum of "Mihail Berezovschi" from the 16-18 age group, and 100 students in the 3rd/4th year from the 21 - 24 age group. The purpose of questioning was to identify the difficulties encountered when visiting different specialists and the reasons why the appointments were missed.

**Results:** There were noted the following visits from both age groups, at FHYC: dermatologist (52.7%), gynaecologist / urologist (21.4%), endocrinologist (14.7%). In addition to these, the number of skipped appointments in the first group (21-24 ages) was of 27.7%, while in the second group (16-18 ages) of 21.2%. There was noticed difference according to gender. Girls missed visits more frequently than boys (32.3% compared to 23.4%, $p < 0{,}001$). Besides, in these age groups the number of visits to the doctors listed above was 3.5 times higher in FYC compared to multidisciplinary clinics. The conducted investigation has determined that a substantial proportion of young people don't address to standard schematic specialists after the prophylactic examination specialists (21% in group 1 and 28% in group 2). The most required specialists are: dermatologist (particularly for people of 16-18 years), gynaecologist (girls of 21-24 years), psychologist, and endocrinologist. There is the need to introduce in Primary Medical Assistance the indicator of performance "Surveillance of the health of the young people through prophylactic examinations on Primary Medical Assistance level" and "Addressability for the service of Urgency Medical Assistance of the young".

The Friendly Health for Young people Centre (FHYC) can raise the level of the addressability among young people index. Therefore, the addressability to the dermatologist, gynaecologist, and urologist is 2-2.5 times higher in FHYC than in FMC. The FHYC is financially supported by local public administration and provides such services in different cities of the republic.

**Conclusions:** The level of attendance shows the dependence of teenagers according to sex, age and receiving specialist. Attention to such factors is one way of dealing with skipping appointments, which can provide better service to young people. The development of FHYC can significantly affect the attitudes of adolescents to healthy lifestyle and improve the attendance at medical institutions. The European experience shows that the introduction of taxes for missed visits will not significantly affect the attendance in these age groups.

**Key words:** young persons, modern style of life, addressability, emergency medical care, primary medical care.

## THE SURVEILLANCE STUDY OF ANTIBIOTIC RESISTANCE LEVEL FOR THE *STREPTOCOCCUS PNEUMONIAE* AND *STREPTOCOCCUS PYOGENES* STRAINS

**Anton Mihail**

*Academic adviser:* Burduniuc Olga, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The antibiotic resistance, currently, is one of the most pressing health care problems. On April 7, 2011 WHO held The World Health Day, spent under the title "Antibiotic resistance: No action today – no cure tomorrow." As prevention and control measures in Europe, The European Antimicrobial Resistance Surveillance System (EARSS) is running, which investigates and takes out the level of resistant strains of dangerous pathogens.

**Aim:** In our study, we conducted a research by the EARSS model for 2 pathogens most often involved in respiratory infections in Moldova: *Streptococcus pneumoniae* and *Streptococcus pyogenes*.

**Methods:** The researches have been performed at the National Centre for Public Health, Epidemiology Centre for extremely dangerous diseases, Respiratory diseases department. The results of approximately 400 antibiograms, for the 2009-2010 years, were processed.

**Results:** The incidence of pneumococcal and group A β-hemolytic streptococci infections was estimated among the population of Moldova. The rate of resistant strains of these pathogens to seven antibiotics most commonly used to treat respiratory infections is the following:

*Str. pneumoniae*: to amoxicillin – 11,82%; to cefuroxime – 21,43%; to ceftriaxone – 4,76%; to ciprofloxacin – 4,35%; to erythromycin – 13,95%; to clarithromycin – 9,52% and to azithromycin – 17,02%.

*Str. pyogenes*: to amoxicillin – 11,49%; to cefuroxime – 5,26%; to ceftriaxone – 2,56%; to ciprofloxacin – 2,22%; to erythromycin – 16,46%; to clarithromycin – 17,95% and to azithromycin – 20,51%.

**Conclusions:** It was updated the level of bacterial resistance for *Str. pneumoniae* and *Str. pyogenes* to the antibacterial drugs used in the respiratory infections therapy: amoxicillin, cefuroxime, ceftriaxone, ciprofloxacin, erythromycin, clarithromycin and azithromycin.

**Keywords:** bacterial resistance, antibiotics, respiratory diseases, *Str. pneumoniae*, *Str. pyogenes*.

## CONCEPTS OF IMMUNITY. PYO-INFLAMMATORY DISEASES. ETIOLOGY, TREATMENT

**Iavorska I.**

*Academic adviser:* Hospodarskyy I., M.D., Ph.D., Professor, State Medical University "Ya. Horbachevsky", Ternopol, Ukraine

**Introduction:** Surgical infections are one of the most important problems of modern health care. Studyies, performed in different countries, showed that wound infection is one of the most frequent complications of surgery According to literature data in recent years, the total number of patients with complications increased from 35 to 40%. Despite the introduction in clinical practice of new methods of surgical treatment, new types of equipment, the use of modern antibiotics, infectious complications after surgery are still very common. Today it is clear that neither the traditional methods of antiseptics nor antibiotics can fully meet the needs of surgery.

**The aim** of our study was to find out new data about the efficiency of diagnostic, treatment and prevention of infection-purulent complications in patients operated on different surgical pathologies.

**Results:** We gathered the material on the topic of frequency and characteristics of purulent-septic complications after abdominal surgery on a background of immunodefficiency disorders depending on the type and degree. According to our data, the risk ratios of purulent-septic complications for each of the anamnestic, clinical, laboratory, and immunological factors are different. These factors statistically significantly influenced the development of purulent-septic complications. The preoperative risk factors were: age; sex; height; weight; loss of weight exceeding 10% of the patient's ideal weight; the presence of diabetes, cirrhosis, ascites, chronic heart or respiratory failure; liver insufficiency. Other factors influencing healing include corticotherapy, chemotherapy during the last 6 months prior surgery; anticoagulants and antibiotics agents used. The intraoperative risk factors included the following: type of skin antiseptics used, type of abdominal incision; preexistence of a skin infection; opening of the bowel; placement of a suture or anastomosis; intraabdominal or intraparietal drainage and the length of surgery. The postoperative risk factors were: urinary catheterization (indwelling or not), the degree of the surgical procedure's contamination according to the classification Class 4 or "dirty" surgery. It includes patients who have diabetes, cirrhosis etc.

**Conclusions:** We studied the frequency and characteristics of purulent-septic complications after abdominal surgery on a background of immunodefficiency, depending on the type and degree. Based on the studied material we will try to predict the occurrence of postoperative septic complications in patients with immunodeficiencies.

**Key words:** complications, immunodeficiency.

## COMPARATIVE STUDY OF THE ATHERSCLEROSIS PLAQUE NEOVASCULARISATION OF VARIOUS TYPES OF ARTERY IN PATIENTS WITH METABOLIC SYNDROME

**Munteanu Andrei, Munteanu Diana**

*Academic adviser:* Zota Ieremia, M.D., Ph.D., Professor, Corresponding Member of the Academy of Sciences of Moldova State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Cardiovascular pathology occupies a dominant place in morbidity structure. The very rapid development of science and technology, that radically changes the level of physical activity by reducing it, the energy value of the food increment and chronic stress have a negative influence on human life. These changes in the society lead to an increase in the number of people with pathological changes in metabolism at different levels, which in turn were distributed into a group of pathologies called "metabolic", and which originally foster the development of atherosclerosis.

This article reflects aspects of neovascularisation of the atherosclerotic plaque (AP) in patients with metabolic syndrome (MS). Especially in childhood and adolescence these changes are less observed (slight hypertension, increased body weight, dyslipidemia), but afterwards they cause atherosclerotic lesions in organs and systems. Previous studies have shown that expression of CD105 (endoglin) is a sensitive marker both for endothelial cells and for activation/proliferation of microcapillary in aggressive growth of solid tumors and atherosclerotic plaque lesions, because the intimal neovascularisation contributes significantly to the further stability or instability of atherosclerotic plaque, hemorrhage and rupture.

**Material and methods:** We used morphological and immunohistochemical analysis to investigate the expression of CD34, SMA (smooth muscle actin) and CD105-positive in the affected large-caliber (aorta, carotid, mesenteric, iliac), and medium (cerebral, coronary, renal, vertebral arteries) vessels samples taken during the necropsies of patients who died from atherosclerotic complications and/or metabolic syndrome.

**Results:** The most dominant studied vessels were CD34 positive at the intimal level in the atherosclerotic plaque region; in the fibrous plaque – rarely; in adventitia, namely vasa vasorum, CD34 positive (small and medium vessels).

Marker SMA is detected in smooth muscle cells, myoepithelial, myofibroblast cells, and, to a lesser extent, in pericytes. Internal positive control for SMA was featured by the positive reaction in myocytes from the tunica media of arterial vessels of muscular and musculo-elastic types as well as by smooth muscle cells and pericytes of blood vessels. Negative reaction was represented in the newly formed vessels (an explanation is that the newly formed vessels being immature are voided of pericytes).

The CD105-positive vessels density was higher in the plaque in close proximity to the atherosclerotic plaque (at adventitial and intimal level) and significantly decreased aloof from atherosclerotic lesion. Furthemore, noncomplicate plaques (intermediate and fibrous) have shown positive vessels for endoglin, which reflects angiogenic cell proliferation. Endoglin-positive vessels were grouped near the atherosclerotic lesions and had lower density distantly, similarly to the issues identified in complicated plaques (calcified and exulcerated).

An eloquent fact is that expression of neovascularisation at intimal level of fibrous and complicated plaque is highly variable. Some of these newly formed CD105-positive vessels were immature, thin walled; formation of plexuses, seams, and isolated CD105-positive cells and without smooth muscle cell actin expression serves as an argument to consider them new-formed vessels.

To a high degree of atherosclerotic plaques the proliferation of CD105-positive new-formed vessels was varied in most types of arteries, videlicet a significantly increased number of adventitious vessels were associated with plaques regions in affected arteries. Another observed feature is that the neovascularisation process is expressed also from intimal part at plaque level of medium and small caliber vessels.

**Conclusion:** Interpretation and vitality (stability and instability) of the atherosclerotic plaque depends to a large extent on the angiogenesis process of atherosclerotic plaque. Our results show that comparative immunohistochemical method with the application of specific vascular markers demonstrates important pathogenetic aspects in the atherosclerotic plaque formation. CD105 is an useful marker of angiogenesis within the adventitious and intimal vessels and suggests the existence of significant differences in the pathological development of atherosclerosis in separate vascular beds, that can have important consequences when considering the management and actual treatment, and the perspective of this disease.

# Internal Medicine Section

## OVERCOMING STROKE - AN EARLY NEUROLOGICAL MANIFESTATION IN PATIENTS WITH INTERNAL CAROTID ARTERY STENOSIS

**Gudumac Veronica**

*Academic adviser:* Gavriliuc M., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic Moldova

**Introduction:** According to the World Health Organization, about 15 million people suffer stroke worldwide each year. Of these, up to 87%, are ischemic strokes. Internal carotid artery (ICA) stenosis is one of the most important risk factor, producing 30% of all ischemic strokes. Estimates indicate that 5 per 1,000 persons aged 50-60 years and approximately 10% of persons older than 80 years have carotid stenosis greater than 50%. We consider it an important aspect, which will help better understand the mechanism of stroke.

**Purpose:** To find out the most common neurological manifestations, in patients with internal carotid artery stenosis, who had an ischemic stroke.

To elaborate a plan of prevention and diminish the number of visits to doctors, due to early neurological manifestations predicting an ischemic stroke, or its relapse;

- To determine major risc factors leading to those manifestations;
- To detect the features of early neurological manifestations in patients with different degree of internal carotid artery stenosis;

**Material and methods:** 100 patients who had an ischemic stroke (50 patients with internal carotid artery(ICA) stenosis, and 50 in the control group, without ICA stenosis);

The comparative analysis of case histories, neurological manifestations, CT scans, clinical and imaging investigations, together with statistic analysis has been performed.

**Results:** We found that 88% of patients with a critical ICA stenosis and ICA occlusion, had smaller ischemic areas on CT than patients in the control group and patients with smaller ICA stenosis; 71,5% of them also had longer – lusting and more numerous clinical manifestations than patients in the control group. We have also compared their „border" cerebral tissue resistance to ischemia, documented by the presence of "Watershed" phenomenon (an area of necrosis in the brain caused by an insufficiency of blood where the distribution of cerebral arteries overlap, in which the most distant areas may not receive blood supply, if there is a fall in circulation) in 36% of patients with ICA stenosis, and 26% in patients in the control group. The analysis of the type of plaque, the role of risk factors, the influence of coagulation factors, and patients' reabilitation performances, has also been included in this study.

**Conclusions:** We have demonstrated clinically, that patients with ICA stenosis, have more prolonged and numerous clinical manifestations than patients in the control group, they manifest better imaging results, and a more frequent "border" necrosis, which can give us premises to help overcome ischemic stroke and its consequences.

**Keywords:** stroke, stenos, carotid.

## AUTONOMIC DISORDER IN DIGESTIVE AND LUNG CANCER

**Vasian Maxim**

*Academic adviser:* Ion Moldovanu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** A group of 63 patients, aged between 30 and 70 years and hospitalized in the Oncological Hospital during the period October 2010 - May 2011, were examined. Among all of the patients, 23 had lung cancer, 20 digestive cancer while the other 20 were healthy.

**Materials and methods:** The study was conducted using a computer program made in Visual Basic based on a comprehensive and structured questionnaire, the profile of the engine plant - Ion Moldovanu Professor ". The questionnaire consists of a wide range of statements and questions, numbering 169, divided scales, each scale having a range from 5 to 20 statements or questions. Standalone engine has a clinical tool to assess the qualitative and quantitative structure-vegetative disorders, which are expressed in bodily sensations and associated emotional, motor, tetanus, painful, behavioral, and others. Statistical analysis of variables was performed using Stats Direct software. Patients were asked to answer a questionnaire before hospital admission.

**Results**: The data analysis shows that lung cancer in men and women has a significant difference: tetany, neuromuscular excitability in men (26%) women, (17%), thermoregulation and sweating men (13%), women (39%), pain (15%), men (25%) ($P < 0,05$). These results show that women are more sensitive to impairments, i.e. sweat and pain, while men in tetany, neuromuscular excitability. Comparative analysis of the main floor of digestive cancer: men 19% anxiety, 37% of women, men, depression in 22%, women 40%, gastro-intestinal disorders of men by 7%, women 24%, skin and mucous men 25%, 6% of women painful syndrome males 4% women, 10% ($P < 0,05$). Thus, women in the digestive cancer shows anxiety, depression, pain, gastrointestinal disorders and skin in men and mucous membranes.

**Conclusions:** As a result of our research, the biological results obtained showed a relationship between the brain and mental disorders, depending on the organ and tissue. Detailed analysis allows systematic subjective symptoms better clinical picture of autonomic dysfunction, and especially of the digestive system and above segments lung cancer. Analysis of data on sensitivity to odors, and depression is not statistically significant. It was noted that lung cancer and gastro-intestinal tract is dominated by the following syndromes: skin and mucous in lung cancer - 25%, 21% of cancers of the digestive, tetany, neuromuscular excitability in lung cancer - 19% -23% cancer of the digestive, fatigue , hypersensitivity lung cancer - 22% -28% of digestive cancers, including a significant statistical difference.

**Key words:** Autonomic disorder, cancer.

## PLACEBO EFFECT IN PATIENTS WITH ALGIC SYNDROME

**Bîcos Irina, Cîvîrjic Irina**

*Academic adviser:* Moldovanu Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: In recent years, the placebo effect has become more of a target of scientific inquiry, rather than a nuisance factor in clinical research setting. A better understanding of the neurobiology of the placebo and nocebo responses will represent the basis for designing behavioral protocols that can be employed as supportive therapy together with standard pharmacological regimen, in order to maximize

the therapeutic outcome for the patient's benefit.

**Objectives:** to study the psychological profile of patients respondent and non-respondent to placebo; to study the factors that have an impact on the magnitude of placebo response; to study the autonomic profile of patients respondent and non-respondent to placebo; to determine sensitivity to placebo; to develop a screening test to estimate the sensitivity to placebo.

**Materials and methods**: Subjects: a group of 15 patients with chronic migraine, selected according to HIS 2004 criteria, with average age of 29.9±2.6 years. Pain induction: pain was induced experimentally by means of the tourniquet technique. Drugs: for the placebo condition, calcium gluconate was administered; for analgesic control condition was used baralghetas.

**Results**: This group was divided into respondent and non respondent to placebo subgroups. As criterion of division had served the decrease of the pain reported degree between control condition of natural flow and the placebo condition, with at least 10%. In the group respondent to placebo (8 patients, 53.3%), during the placebo condition, pain decreased by 23.17% ($p<0.001$) and pain tolerance value increased by 28.4% ($p<0.05$) compared to control condition of natural flow. For the SCL90 questionnaire scale were obtained higher degrees of non-respondents to placebo in comparison with respondents to placebo for the following scale: depression (2.03±0.01 in comparison with 1.35±0.08, $p<0.001$), anxiety (1.7±0.04 in comparison with 1.11±0.24, $p<0.05$), psychotic scale (1.45±0.06 in comparison with 0.98±0.2, $p<0.05$). Higher degrees of non-respondents to placebo were obtained on the following scales of autonomic profile (Ion Moldovanu 2011): anxiety and panic attacks (16±0 in comparison with 11.5±1.4, $p<0.01$), thermoregulation (40.5±5.9 in comparison with 20.33±3.4, $p<0. 05$). Degree of suggestibility was obtained higher among respondents to placebo compared to non-respondents.

**Conclusion**: In patients with chronic migraine the presence of placebo response depends on anxiety, depression and the degree of suggestibility. Thus it is possible to perform a screening test containing questions from the questionnaire scales used, where there have been registered statistically significant differences between the groups respondent and non-respondent to placebo.

**Keywords**: placebo effect, suggestibility, pain, chronic migraine.

## MIGRAINE ASSOCIATED WITH SOMATOFORM DISORDERS – CLINICAL AND PSYCHOLOGICAL ASPECTS

**Băbălău Ana Maria**

*Academic adviser:* Moldovanu Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Migraine is a common disorder that imposes a large personal burden on sufferers. According to the World Health Organisation, the prevalence of migraine in 2011 was estimated to be 11%. There is a great number of population-based studies that have reported an association between various psychiatric conditions and migraine. One of these psychiatric conditions is represented by the group of somatoform disorders. The coexistence of comorbid conditions lead to further disability of migraine sufferers in all aspects of their daily lives.

**Objective**: The goal of this study was to determine the cephalalgic, autonomic and psychological particularities of the patients that present migraine in association with somatoform disorders.

**Methods**: This was a case control study involving 32 migraine patients (mean age 44,13±1,39 years), selected during the period of 2011 from the National Neurological and Neurosurgical Institute, Mol-

dova. Migraine was diagnosed using the International Headache Society criteria. Personality traits of the patients were analysed using the Symptom Checklist-90 questionnaire (SCL-90). Somatoform disorders were diagnosed using the DSM-IV TR criteria. In order to evaluate the autonomic disorders, a special questionnaire – The Autonomic Profile (Moldovanu, 2011) was performed. The total number of patients was divided in two groups, group I – the patients who presented a high level of somatoform disorders (12 persons) and group II – the patients who presented a minimal level of somatoform disorders (20 persons). Statistical analysis of data was performed in order to establish the difference between these two group's findings.

**Results:** The patients from group I showed significantly higher intensity of headache (measured on a 0–10 Numeric Pain Rating Scale) than the patients from group II (7.83±0.39 – 9.42±0.18 vs 4.70±0.34 – 7.15±0.35, $p \leq 0.01$). Also, the migraine attack duration was different between the groups (6.17±0.74 – 35.00±3.3 hours vs 4.50±0.21 – 11.85±2.84 hours, $p \leq 0.01$). Talking about psychological findings, the patients from group I showed higher SCL-90 scores than the patients from group II on the following personality traits: obsessive – compulsive (score 0.57±0.07 vs 0.38±0.05), depression (score 1.10±0.14 vs 0.53±0.06) and anxiety (score 1.03±0.09 vs 0.58±0.09) ($p \leq 0.01$). Regarding the autonomic disorders, they were certainly more expressed in the patients from group I, fact that caused a higher disability score for this group (8.92±0.45 vs 4.35±0.64, $p \leq 0.01$).

**Conclusions:** There is a high influence of the somatoform disorders, as a comorbidity of migraine, on the cephalalgic, autonomic and psychological particularities of the patients, the final result of this association of diseases causing a significantly higher degree of disability.

**Key-words:** migraine, somatoform disorder, psychogenic symptoms.

## ANXIETY IN PATIENTS AFTER CESAREAN SECTION

**Cucu Tatiana, Cucu Cristina**

*Academic adviser:* Corolcova Natalia, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Depression is a frequent consequence of cesarean section. In the same time, even if some women don't suffer from post-cesarean depression, the majority of them present anxiety signs, especially in the immediate postoperative period.

**Aims:** to estimate the level of anxiety in patients with cesarean section. Evaluation of anxiety level in patients before cesarean section. Evaluation of anxiety level in patients with cesarean section in the confinement and late postoperative periods.

**Methods:** The study included 100 patients, who were submitted to cesarean section. The first part of the study was performed during the early postoperative period (confinement period) and the second part (late postoperative period) – 6 months later after the cesarean section.

Estimation of state and trait anxiety was performed by the means of Spielberger-Hanin test.

**Results:** Trait anxiety was light in 76,0%±4,27 patients, moderate – in 23,0%±4,20 cases and severe – in 1,0%±0,99 cases.

**Confinement period:** The majority of patients presented a moderate (58,0%±4,93) and a severe state of anxiety (14,0%±3,46) during the first days after cesarean section.

It results that the level of state anxiety in the majority of cases depends directly upon postoperative stress and not upon by the level of trait anxiety.

**Late postoperative period:** State anxiety during the late postoperative period was: moderate in 36,0%±4,80 cases and severe in 4,0%±1,95 cases. Compared with state anxiety during the confinement period, state anxiety during the late postoperative period has significantly decreased.

**Conclusion:** 23% of the patients had a moderate trait of anxiety and 1% had severe trait anxiety before cesarean section.

a) During the confinement period, state anxiety is dominated by the moderate form (58%), depending directly upon postoperative stress.

b) During the late postoperative period, the level of state anxiety is decreased, predominant being light state anxiety (60%).

**Keywords:** anxiety, postpartum, cesarean.

## THE CLINICAL FEATURES AND THE RECOVERY PROCESS IN PATIENTS WITH ISCHEMIC STROKE WITH TRANSIENT ISCHEMIC ATTACKS IN THE PAST

**Costru-Taşnic Elena, Taşnic Mihail**

*Academic adviser:* Gavriliuc Mihail, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** According to WHO, the global mortality from ischemic stroke is 9% annually, representing the third cause of death after heart diseases and cancer. The stroke is the main determinant of physical and mental disabilities in adults. The incidence and prevalence of transient ischemic attacks (TIAs) are continuously increasing due to the aging of the population worldwide. The importance of rapid and accurate diagnosis of TIAs is based on the fact that after a first TIA approximately 5% of patients develop a stroke during the next two days and about 20-30% - over the next 90 days. TIAs are important predictive factors of future stroke. The effective treatment of TIAs can prevent the recurrence of cerebral infarction. Recent studies show that the TIAs in the history of patients presenting an actual stroke can stimulate the cerebral resistance, like a neuroprotective factor.

**Purpose and objectives:** The clinical research of the evolution and recovery process in patients with ischemic stroke with TIAs in the past; the analysis of literature medical data on the importance of TIAs in the development and evolution of strokes; the stroke evolution assessment in patients with TIAs in the past during the acute, early and late recovery phases.

**Materials and methods:** The study was conducted on 33 patients with ischemic stroke, the acute, early and late recovery phases, with and without TIAs in the past, and included: clinical examination of the patients (general clinical examination, neurological examination, history disease, underlining the presence of TIAs in the past); assessment of functional independence degree after stroke, using the Barthel score; statistical evaluation of data obtained by comparative analysis and graphics.

**Results:** In the present study was determinate that TIAs were present in 12 (36,4%) from 33 patients with ischemic stroke, at different intervals before the current stroke (from 2 week to 24 months). According to Barthel score, the average score obtained in examined patients was 37,8 points. The average score in patients with ischemic stroke without TIA in the past (21 patients – 63,3%) was 31,9 points, significantly lower than in the patients with stroke and TIA (12 patients- 36,4%), who accumulated, on average, 46,04 points. We also analyzed the functional independence degree depending on the time of ischemic stroke occurrence and the Barthel score achievement. In this case, the highest score was obtained in patients

evaluated during the early post-stroke recovery (at 4-6 moths distance from the ischemic stroke) with 52,5 points, which can be explained by the presence of TIAs in the past of 2 patients from this subgroup and who accumulate a high Barthel score – 72,5 points.

**Conclusions:** TIAs can be considerate as factors that induce cerebral ischemic preconditioning. The assessment of disability degree in patients with ischemic stroke using the Barthel score showed a significantly higher mean score in patients with stroke and TIA than in patients without TIA in the past. The highest Barthel score was obtained in patients evaluated in the early recovery period and in patients with TIA at 12 months before stroke.

**Keywords:** stroke, transient ischemic attacks, cerebral ischemic preconditioning, Barthel score.

## INDICATORS OF DIABETES MELLITUS TYPE 2 PATIENTS COMPENSATION BY THE LEVEL OF GLYCATED HEMOGLOBIN IN TERNOPOL REGION, UKRAINE, 2011

**Pasyechko N., Mazur L., Naumova L., Smachylo I., Bob A., Chernukhina O.**

State Medical University „I.Ya. Horbachevsky", Ternopol, Ukraine

**Introduction:** WHO notes that diabetes mellitus (DM) leads to increased mortality of patients by 2-3 times and reduces their life duration by 10-30 %. Epidemiological studies in Ukraine indicate a permanent increase in the number of patients with both DM types. The most objective and long-term indicator of diabetes compensation is glycated hemoglobin (HbA1c).

**Purpose:** Our study was to estimate the stage of compensation for patients with DM types 1 and 2 in Ternopil region on the basis of HbA1c levels.

**Materials and methods:** We examined 285 patients with type 2 diabetes, among them 150 people received insulin therapy. The duration of diabetes was from 2 to 17 years. Patients' age was from 42 to 75 years. Due to the fact that the study involved 49.2% of patients older than 50 years, stages of compensation of diabetes were the following: HbA1c less than 7.0% - good control, 7,0-8,0% - satisfactory control, above 8.0% - poor control.

**Results:** The amount of patients with HbA1c level under 7% was 8.65%, with HbA1c from 7.0 to 8.0% - 17.11%, with HbA1c above 8.0% - 74.24%, respectively. The average HbA1c level among clients with type 2 diabetes and insulin treatment was (9.62±0.07)% and among those, who used anti-diabetic drugs - (9.34±0.08)%, respectively.

The average HbA1c concentration in patients with type 2 DM in Ternopil region, Ukraine in 2011 was (9.48±0.06)%.

**Conclusions:** The average level of glycated hemoglobin in patients with type 2 diabetes mellitus in Ternopil region, Ukraine in 2011 was (9.48±0.06)%, and did not depend on the method of its treatment (insulin or anti-diabetic drugs). The majority of clients with diabetes mellitus type 2 (74.24%) presented poor control of the disease.

**Key words:** Diabetes Mellitus, glycated haemoglobin.

## PECULIARITIES OF PREMENSTRUAL SYNDROME TREATMENT IN WOMEN WITH HYPERTHYROIDISM

**Petrenko N.**

*Academic adviser:* Boychuk A., M.D., Ph.D., Professor, State Medical University „I. Ya. Horbacheskyy", Ternopol, Ukraine

Today among all endocrinological disease in women thyroid pathology is the second only to diabetes. Premenstrual syndrome (PMS) plays a leading role in reducing the quality of life for women of the reproductive age. The manifestations of PMS are particularly worse in women with hyperthyroidism.

We examined 35 patients with premenstrual syndrome and / or irregular menstruation with concomitant hyperthyroidism. In the examined patients the nature of the menstrual cycle, the degree of manifestation of premenstrual syndrome, the level of PRL and its biologically active fraction (BFA), LH, FSH, estradiol (E2), progesterone (Pg) were analyzed. In order to correct the detected impairments a dose of up to 30 drops of Mastodinon twice a day for three menstrual cycles was used.Mastodinon caused a significant decrease in the levels of total prolactin (15,5 ± 1,0) IU / l, BFA to (8,5 ± 0,7) IU / l and its contents - to the (54,7 ± 4, 5)%, significant increase in LH concentration to (9,3 ± 0,6) IU / l, FSH - to (7,7 ± 0,7) IU / l, E2 - up (179,2 ± 9,9) ng / L and Pg - to (20,5 ± 1,8) mg / l.

Restoration of ovulatory cycles occurred in 86.0% of patients, regular menstrual cycles were established in 94.3% of patients, all patients had normal length of the menstrual cycle, duration and volume of menstrual bleeding.

Use of Mastodinon led to the elimination of Algodysmenorrhea, emotional and psychological, neurovegetative, vegetative vascular and endocrine-metabolic manifestations of PMS in 94.3% of patients. After using Mastodinon for 3 menstrual cycles breast secretions continued only in 4 (11.4%) patients. Thus the use of Mastodinon had positive effects on the menstrual function and PMS by eliminating hyperprolactinemia and restoring the pituitary regulation of reproductive function.

## PAROXYSMAL DISORDERS IN CHILDREN, BORN BY YOUNG MOTHERS

**Salomykova E.**

*Academic adviser:* Prusakov V., M.D., Ph.D., Professor, Kazan State Medical Academy, Kazan, Russian Federation

Mothers' young age is the first of the factors, leading to the development of pathology in the period of pregnancy, morbidity and mortality of newborns. P.Olaussoy, S.Chattiugius, B. Haghund (2001) determined, the risk of perinatal complications at the age of 13-15 years is four times higher than at the age of 20 - 24, and at the age 16 - 17 is twice higher.

Purpose of the work is to study the variants of paroxysmal disorders in children, born by young mothers. We examined 150 children, born by young mothers (mothers aged 13-17 years), who were treated in the children's municipal clinic No 8. 15 children had paroxysmal disorders (10 boys and 5 girls).

2 children had paroxysmal disorders from the first day of life, in the other 5 – disorders developed during the first six months, in the other 3- during the first year, in other 5 – during 3 years and during 10 years 2 children developed the disease. The paroxysmal disorders structure includes symptomatic focal epilepsy (33,3%), symptomatic multifocal epilepsy (6,7%), cryptogenic-focal epilepsy (20%), situational-conditioned epilepsy (affective-provoked) (6,7%), symptomatic generalized epilepsy (13,3%).

The neurological status at the moment of admission to the hospital of one part of children was characterized by severe moving disorders: spastic tetraparesis (46,2%), in combination with hyperkinetic syndrome (15,4%),disorders of skull-brain nerves (30,8%). Another part of children had diffuse muscle hypotony (15,4%),pyramidal insufficiency (15,4%).

Thus, disorders of epileptic genesis, usually symptomatic, are part of the paroxysmal disorders in the examined children.

## INDEPENDENT COMPONENTS OF THE COGNITIVE INDUCED POTENTIALS IN PATIENTS WITH DEPRESSIVE DISORDER

**Polyakova Galina**

*Academic adviser:* Tochilov Vladimir, M.D., Ph.D., Professor; Kropotov Yury, Ph.D., Professor, Northwestern State Medical University "I. I. Mechnikov", Sankt-Petersberg, Russian Federation

The purpose of this study was to identify the changes in the independent components of induced potentials in patients with different depressive genesis disorders in two models of active ,Go / NoGo test of selective attention (VCPT - visual continuous performance test, ECPT - emotional continuous performance test). The study involved 34 patients aged from 26 to 79 years with clinically verified depressive syndrome. Both tests consisted of 400 samples, the samples were pairs of visual stimuli: the animal-animal (sample Go), animal-plant(sample NoGo), herb-herb (Ignore), and the plant-Man (Novel), or face image variations of different emotional modality. The samples were presented randomly with 25% probability. Novel assay was accompanied by an audible signal. The subjects were instructed to press a button as quickly as possible, upon presentation of a pair of «animal-animal» or «angry face, angry face» and not to click on the presentation of the other pairs of stimuli. For the EEG registration electrode cap Electrocap was used with 19electrodes placed on the surface of the head in line according to the international system 10-20. Before processing, the EEG was converted into a common average montage. Calculation of independent components of induced potentials was carried out automatically in the program using the WinEEG INFOMAX algorithm. To highlight the eight components which have the largest amplitude, spatial filters are used, calculated on the basis of the normative database of Go / NoGo test. Dedicated independent components were averaged separately for groups of patients and for the comparison group.

To determine the localization of independent components of evoked potentials, and obtain the corresponding topographies the program sLORETA was used. Independent component analysis of induced potentials in VCPT represented significant and meaningful reduction in the amplitude of the component of patients with depressive disorders which was generated in the superior parietal cortex, known for reflecting a reaction to the sound. Analysis indicated the amplitude of the component reduction, which is generated in the occipital cortex, known for reflecting the primary processing of visual stimuli. Analysis displayed the reduction of the component amplitude, which reflects the reaction to the new incentive and monitoring activities. Independent component analysis of evoked potentials in the ECPT also showed a significant and meaningful reduction in the amplitude of the component that is generated in the occipital cortex and known for reflecting the primary processing of visual stimuli. This analysis displayed the decrease of the component amplitude that is generated in the prefrontal area, and probably that reflects the reaction to a new stimulus. These characteristics of induced potentials may correlate to the clinic with a depressed patient's weakness in reactions to any external stimuli.

Keywords: depressive disorder, event-related potentials, ICA.

## ISCHEMIC POSTCONDITIONING AND ACTIVITY COMPLEMENT COMPONENT C3 IN CEREBRAL ISCHEMIC AND REPERFUSION INJURY

**Ovchinnikov D., Kuzmenkov A., Gordeeva M.**

*Academic adviser:* Sherbak N., M.D., Ph.D., Associate Professor,. Beltiukov P., M.D., Ph.D., Associate Professor, Federal Medical University "I.Pavlov", Federal Heart, Blood and Endocrinology Centre "V.A. Almazov", Sankt-Petersburg, Russian Federation

**Introduction:** Ischemic postconditioning (IPost) is an effective mechanism to protect the cells from ischemic and reperfusion injury. Activation of the complement system in ischemic and reperfusion brain injury can cause additional damage to healthy tissue. Changes in the activity of C3 complement component in global cerebral ischemia and IPost are unknown.

**Purpose:** The aim of this study was to quantify the functional activity of C3 component of complement in the serum of rats at different stages of reperfusion after cerebral global ischemia and IPost. Adult male rats Wistar weigting 250-280g were used for this study. Animals were housed in a 12hours/12hours light/dark cycle with free access to water and food. Transient global cerebral ischemia–reperfusion in the rat by reversible occlusion of major vessels, extended from the aortic arch and supplied the brain with blood. With the serum of rats determined The activity of complement component C3 on the second and seventh day of reperfusion period after a ten-minute global cerebral ischemia was determined in serum of rats.

It was shown that reversible 10-minute ischemic brain injury in rats leads to increased activity of C3 component of complement in the first seven days after global ischemia, with the maximal increase in the C3 activity on the 2nd day of reperfusion. IPost leads to a significant increase in the functional activity of complement component C3 on the 7th day of reperfusion.

This work was supported by the grant of the President of the Russian Federation for support of leading scientific groups 2359.2012.7.

**Key words:** ischemic postconditioning, complement component C3, brain, ischemia, rats.

## "MATHEMATICAL MODEL" DIAGNOSIS OF ASTHMA IN YOUNG CHILDREN

**Belashova O.**

Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction:** The current literature is still a controversial question of the possibility konstellation approach to the integrated use of indicators of clinical and immunological examination criteria as early diagnosis of bronchial asthma in children under three years with the presence of airflow obstruction syndrome, as well as the effectiveness of treatment and prognosis of asthma.

Accordingly, **the purpose** of the work was the creation of a mathematical model of asthma in young children, which is necessary for the purpose of a rational treatment strategy in patients with bronchial asthma.

**Survey methods:** to achieve this goal we carried out a comprehensive clinical and immunological study of 55 children aged 3 years, patients with asthma, which included a thorough investigation of allergic history, clinical signs of expression of broncho-obstructive syndrome, to determine the level of CD4 +, CD8 + lymphocytes, total Ig E, the metabolic activity of the blood eosinophil according to NBT-test,

the intracellular content of the main cytotoxic substances eosinophils (cationic protein, peroxidase).

**The results:** The analysis found that none of these criteria have sufficient sensitivity, specificity, to be used independently for the production or exclude the diagnosis of asthma. Multivariate analysis of clinical - laboratory data allowed to identify the major components of the factor structure of clinical - paraclinical "image" of asthma in young children. Based on a study of the factor loading main components of multi-factor matrix was established a factor structure of the image of Asthma: Asthma = 0,6 F1 + (-0,3) F2 +0,3 F3, where F1 - particularly the immune status of the child in the form of increasing the content of blood CD4 - lymphocytes and decreased CD8, as well as improve the immuno-regulatory index (CD4/CD8) greater than 2.0. Factor loadings of the indicator 0,72; F2 - negative reserve oxygen-dependent metabolism of eosinophilic granulocytes of peripheral blood according to the spontaneous and stimulated NBT test, reduced the intracellular content of cationic proteins (<1.4 USD) and peroxidase (<1.7 USD). Factor loadings of these indicators were within 0,84 - 0,86; F3 - rates the severity of airflow obstruction syndrome during the first three days of treatment in the hospital. Factor loadings measure severity of broncho-obstructive syndrome in the first day of hospitalization was - 0.91 for the second - 0.94, on the third - 0.88;

**Conclusion**: Thus, our multivariate analysis using the principal component analysis allowed establishing the factor structure of diagnosis "bronchial asthma".

**Key words:** asthma, children under 3 years of age, clinical - immunological tests.

## THE IDENTIFICATION OF INDEPENDENT PROGNOSTIC FACTORS FOR ELDERLY PATIENTS WITH RELAPSED AND/OR REFRACTORY MULTIPLE MYELOMA

**Yurova E., Semochkin S.**

Russian National Research Medical University "N.I. Pirogov", Moscow, Russian Federation

**Introduction:** Multiple myeloma (MM) is a malignant plasma cell disorder. It is regarded as an incurable disease with typical complications which in particular are anemia, kidney failure and congestive heart failure (CHF). Cardiac natriuretic peptides BNP and NT-proBNP can be used to screen for left ventricular systolic dysfunction in patients with symptoms suggestive of heart failure. The aim of the present study was to examine if the levels of BNP and NT-pro-BNP predicts mortality in patients with MM and concomitant CHF.

**Material and method**: The study population included 45 (m-16, f-30) adult patients (pts) with refractory or relapsed/refractory MM. The subjects satisfy the following criteria to be enrolled in this study: (1) availability of proven CHF with New York Heart Association (NYHA) grades I-III; (2) must be documented diagnosis of MM and estimated about its chemotherapy; (3) the presence of anemia with Hb less than 8.0 mg /dL (4) ECOG performance status score not more than 2; (5) basic therapy for CHF (inhibitor APF ± diuretic) was spent not less than within last 2 weeks. Ihe study did not include pts with NYHA grade IV, the constant form of atrial fibrillation, heart diseases and/or a heavy arterial pathology. For the treatment of MM 28 (62 %) pts have received "salvage" chemotherapy with bortezomib, 15 (33 %) – alkylate drug therapy and 2 (5 %) – high doses of dexamethasone. Levels of NT-proBNP and a BNP-fragment in blood serum have been defined by ELIZA at the moment of enrolling in the study. ROC-curves were used to calculate the threshold concentrations of BNP and NT-proBNP. Overall survival (OS) was estimated using Kaplan-Mayer method.

**Results and discussion**: The age median of patients at the enrollment was 66 (range 42-83) years. 3 (7 %) pts had IIA stage on Salmon-Durie, 22 (49 %) – IIIA and 20 (44 %) – IIIB. 33 (73 %) pts had evidence of CFH grade I, 9 (20 %) – II and 3 (7 %) – III. An objective response on MM treatment was reached 26 (58 %) pts, including complete response (CR) and very good partial response (VGPR) - 7 (16 %) pts. 33 (73 %) pts were alive with a median follow 11 months. The predictive values of BNP-fragment levels on OS were not detected. Analysis of the activity of NT-proBNP allows detecting of a significant correlation with grades of CFH and OS ($p < 0.05$). The levels of NT-proBNP more than 0.93 ng/ml (sensitivity 82%, specificity 62%) was identified as a predictor of the likely risk of mortality. 1-year OS of pts with proBNP levels in the blood above 0.93 was 53% versus 78% ($p < 0.05$) for subjects with a lower level of this peptide.

**Conclusion**: NT-proBNP levels in blood serum ≥ 0.93 ng/ml were identified as the adverse factor for patients with MM and concomitant CHF. BNP-fragment levels in this clinical situation have not predictive value.

## VIRAL HEPATITIS B, C, AND D IN CHILDREN - CLINICAL, EPIDEMIOLOGICAL AND EVOLUTION ASPECTS

**Foca Eugenia, Poiană Ina**

*Academic adviser:* Serbenco Ludmila, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University „Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** B, C and D viral hepatitis infection remain to be a serious global problem of Public Health and a major cause of chronic hepatitis, cirrhosis and hepatocellular carcinoma. Despite the implementation of an effective vaccine, HBV infection still remains an important, worldwide cause of chronic viral hepatitis.

Aim: to determine the epidemiological, diagnostic, clinical, developmental aspects and treatment of viral hepatitis B, C and D in children.

Objectives:

- to assess the role of the source in the transmission of infection with hepatitis B, C and D viruses in children.
- to estimate evaluating the clinical and diagnostical particularities in patients with viral hepatitis B, C, D.

Materials and methods: the study included 40 pacients diagnosed with acute/chronic HBV, HCV and HDV infection during the years 2001-2011, treated in IMSP Municipal Hospital of Contagious Diseases in Children, Chișinău. Patients were subjected to clinical examination, biochemical and serological analysis and to ultrasonography of the abdominal cavity organs, to esthablish clinical diagnosis.

**Results:** the study included 22 girls and 18 boys, average age 10,4 ± 5,1 years. Acording to the etiology, the clinical diagnosis of HVB was established in 28 (70%) cases, HVC in 8 (20%) cases and HVD in 4 (10%) cases. Typical type (icteric) was determined in 22 children, and the atypical type in 18. Acording to the evolution, there were determined the folowing types: acute in 24 (60%) cases, subacute in 4 (10%) cases and chronic in 12 (30%). Out of 37 children aged over 6 months, 8 (21,6%) children presented an anamnesis of surgical procedures, dental consultations and blood transfusions during the last 6 months and 2 teenagers had unprotected sexual relations with more than one partner. Epidemiological investigation in the context of maternal-fetal and habitual routes of transmission was relevant in 12 (30%) children.

**Conclusion:** Epidemiological investigations established that the most frequent routes of transmission of viral hepatitis in children included in our study were the parenteral, perinatal and habitual ones. Polymorphic symptoms present in 45% of patients showed difficulties in establishing the clinical diagnosis of viral hepatitis. Both pregnant women and family members of the outbreak had to be investigated not only for HBsAg, but also for the presence of serological markers of hepatitis: anti-HB cor (IgM+ IgG), anti-HCV (IgM+IgG) and anti-HVD (IgM+IgG).

**Key words**: viral hepatitis B, C, D; clinical management; epidemiology; follow-up; diagnosis.

## CORRELATION BETWEEN SERUM IgE AND SEROCONVERSION OF SPECIFIC ANTIBODIES AGAINST ATYPICAL PATHOGENS (Mycoplasma pneumoniae, Chlamydia pneumoniae) AND RESPIRATORY SYNCYTIAL VIRUS IN PATIENTS WITH BRONCHIAL OBSTRUCTION OF ATOPIC OR INFECTIOUS ETIOLOGY

**Savoschin Dorina, Vasilos Liubov, Cojocaru Ala,**
**Horodişteanu-Banuh Adela, Aramă Marina, Cirstea Olga**

State Medical and Pharmaceutical University „Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Asthma onset in children is frequently associated with respiratory infections of different etiology: atypical bacteria such as *Chlamydia pneumoniae* (CPN) or *Mycoplasma pneumoniae* (MPN), and/or viruses (Respiratory syncytial virus *(RSV), Rhinovirus*). Recent researches showed that acute viral infection determines a structural susceptibility through inflammatory changes, and may facilitate asthma development in atopic children. However the contribution of each factor to asthma pathogenesis is still controversial.

**Materials and methods:** A case-control study included 129 children hospitalized in the Allergy and Pulmonology wards of the Research Institute for Maternal and Child Healthcare: the first group included 84 children with persistent asthma; the second group included 45 children with bronchial obstruction of infectious etiology. Specific antibodies were assessed using *immunoenzymatic assay* ELISA. *Specific immunoglobulin classes A and G against CPN and MPN and immunoglobulin classes M and G against RSV were evaluated. The total* ***serum*** *immunoglobulin-E* (*IgE*) titres were assessed. Statistical processing of the data was performed using the software Microsoft Excel and STATISTICA 6.0.

**Results:** The specific antibody seroconversion for the examined infections have been found in both study groups. In the first group of patients hospitalized with asthma exacerbation diagnostic titers of antibodies were detected as follows: against MPN in 8,8% of asthma cases, against CPN in 2,9% and RSV in 11,8% of cases. Antibody response to associated infections was detected for MPN+CPN in 5,9% of children; MPN+VRS in 11,8% of children; CPN+VRS in 2,9%. Estimation of these antibodies presence in the group of children with bronchial obstruction showed the presence of anti-MPN immunoglobulins in 6,6% of cases, anti-CPN immunoglobulins in 4,4% of cases and anti-VRS immunoglobulins in 8,8% of patients. No associated infections were found in this study group. Serum IgE levels were raised from the cut off value in 91,2% of the subjects from the asthma group and in 28,9% from the second group. In addition to that, the serum IgE levels in children with asthma exacerbation was 1,5 folds higher comparing with those serologically negative (916,0±236,0 IU/ml and 647,9±104,6 IU/ml respectively, $p>0,05$) and correlated significantly with anti- MPN immunoglobulin G ($r = 0,58$). Also an inverse correlation was found between the serum IgE levels and anti-RSV immunoglobulin M ($r = -0,53$, $p<0,01$).

**Conclusions:** Infectious factors especially *Mycoplasma pneumoniae* have a direct impact on asthma pathogenesis, allergic sensitization and serum IgE synthesis. *Respiratory syncytial virus* seems to have a

role in the mechanisms of bronchial obstruction onset mostly through the increase of bronchial hyperreactivity. Thus, the intensity of allergic inflammation in respiratory airways is inversely correlated with the degree of inflammation caused by RSV.

**Key words**: Mycoplasma pneumoniae, Chlamydia pneumoniae, Respiratory syncytial virus, bronchial obstruction, asthma, IgE, atopy, children.

## MULTIPLE PLASMOCYTOMA - A RARE CASE OF THREE ATYPICAL PRESENTATIONS

**Chelban Viorica**

*Academic adviser:* Marc Gatfossé, Université Pierre et Marie Curie, Paris, France

**Introduction:** The solitary plasmocytoma represents less than 5% of all plasma cell neoplasms. The multiple plasmocytoma is 20 times rarer than solitary plasmocytoma. Progression to multiple myeloma is common.

**Methods:** Case study

**Results:** We report a very rare case of multiple plasmocytoma developed in the bone and two atypical sites - renal and gastric. The patient was treated with radiotherapy, surgery and chemotherapy. The case is presented due to its rarity.

**Conclusion:** The high risk of a progression towards a multiple myeloma justifies a comprehensive initial assessment and regular monitoring of all plasmocytomas. The management of a patient with multiple plasmocytomas will be determined by the sensitivity and the site of the tumor.

**Key words**: Multiple plasmocitoma, extramedullaryplasmocitoma.

## THE USAGE OF L-ORNITHINE - L-ARGININE COMPLEX AS A NEW EFFECTIVE STEP IN TREATMENT OF ACUTE TOXIC HEPATITIS

**Krehovska- Lepyavko O., Gudyma A.**

*Academic adviser:* Gudyma A., M.D., State Medical University "Ya. Horbachevsky", Ternopol, Ukraine

Liver damage and toxic hepatitis occur mainly due to excessive alcohol consumption, viral infections, chemicals, and as a consequence of drug adverse effects. The symptoms of toxic hepatitis often go away when exposure to the toxin stops. But toxic hepatitis can permanently damage the liver, leading to irreversible scarring of liver tissue (cirrhosis) and in some cases to liver failure.Thus, there is an ongoing need for finding new substances that can effectively prevent and cure hepatic damage, minimizing adverse effects.

Carbon-tetrachloride is extensively being used as a model substance for producing hepatotoxic effects such as fatty degeneration of liver tissue, fibrosis, hepatocellular death, and carcinogenicity.

L-arginine is classified as a nonessential amino acid, but may be considered essential or semiessential in stressful situations, including periods of growth (e.g., during childhood or pregnancy) or trauma (e.g., liver disease, severe sepsis, wound healing, cancer). In jaundiced rats, L-arginine supplementation demonstrated anabolic and immunostimulatory properties. Anabolic actions were also confirmed in studies of L-arginine supplementation and improved wound healing, as well as healing of bones, burns, GI tract, and tendons.

Researchers have confirmed one of the mechanisms of the arginase enzyme action, which produces a favorable environment for fibroblast and collagen production. L-arginine has exhibited protective effects in spinal cord injury in animals and in cortical impact injury in rats. In another study, exogenous L-arginine resulted in decreased hepatic ischemia/reperfusion injury.

L-ornithine metabolizes to form L-arginine and assists in the production of urea. This increases the body's ability to eliminate waste-products. L-ornithine and L-arginine work together synergistically to increase protein synthesis and, ultimately, muscle growth. This aminoacid is necessary for metabolic functions and detoxification purposes. It also contributes to release of HGH by the pituitary gland. L-ornithine is also used to assist in liver and gallbladder cleansing because it helps to produce urea that is used to flush toxic substances out of the liver. Because of the detoxification properties of the aminoacid it is thought to decrease the incidence of gallstones and liver toxins.

The usage of L-ornithine - L-arginine complex for toxic hepatitis treatment is considered to be a new and effective step in the development of modern hepathology.

**Key words**: liver, toxic hepatitis, L-arginine, L-ornithine.

## CLINICAL PECULIARITIES OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE DEPENDING ON GENDER OF THE PATIENTS

**Smiyan S., Lepyavko A., Gusak S.**

State Medical University „I.Ya. Horbachevsky", Ternopol, Ukraine

**Introduction:** The problem of chronic obstructive pulmonary disease (COPD) is important in the most of countries, despite of numerous anti-smoking campaigns. If in previous decades, morbidity and mortality from COPD among men was significantly higher comparing to women, in recent years these indicators became practically equal in patients of both sexes, moreover, in some countries they dominate in women. According to the worldwide statistics, nowadays COPD kills more women than breast and lung cancers that do together. Therefore, there is a need to research the gender peculiarities of clinical course of COPD.

**Materials and methods:** The study was conducted on 42 men and women who are smokers and have COPD of the third stage. Age, number of pack-years of smoking, presence of comorbidities and number of exacerbations of COPD during the previous year were considered. Forced expiratory volume in first second (FEV1), the distance in meters, that the patient may walk for 6 minutes, severity of dyspnea by MMRC scale, body mass index (BMI) were assessed in all patients.

**Results:** Among the patients with COPD the women were younger than men (respectively, 56 and 67 years, $p < 0.05$), they smoked less (respectively, 37 and 58 pack-years, $p < 0.05$), had lower BMI (respectively, 25 and 28, $p < 0.05$), more exacerbations during the previous year (respectively, 1 and 0, $p < 0.05$) and fewer comorbidities. Gender differences in FEV1 were not found. At the same time women with COPD were less tolerant to physical exertion (they could walk for 6 min 94% of the necessary distance, while the males – 102%, $p = 0.05$) and developed more significant dyspnea by MMRC scale (respectively, 3.5 and 2.2, $p < 0.05$).

**Conclusions:** There are some sex differences in the development and clinical course of COPD, which are caused, apparently, by specific neurohumoral regulation of bronchopulmonary system functions, hormonal influence on the metabolism of tobacco smoke and by different severity of oxidative stress that damages the bronchopulmonary tissue. Further study of sexual peculiarities of COPD may improve the effectiveness of treatment of this widespread disease.

## EPIDEMIOLOGICAL CONTROL FOR INFLUENZA PANDEMIC IN KHARKOV, UKRAINE

**Lyutaya E., Makarova V.**

*Academic adviser:* Chumachenko T., M.D., Ph.D., Professor, Kharkov National Medical University, Kharkov, Ukraine

**Background:** In April 2009, a novel strain of influenza A H1N1 was identified from Mexico and the United States. The H1N1 pandemic has highlighted the treat of emerging viral pathogens to global health.

**Aim and tasks**: We reviewed epidemiological feathers of influenza A H1N1 and the effectiveness of the preventive and anti-epidemic measures in the pandemic influenza 2009–2010 in the industrial region of 2.782 mln population to determine potential lessons for public health action.

**Materials and methods:** We reviewed Kharkiv surveillance reports for influenza.

**Results:** In pre-epidemic period the sanitary-epidemiological service of Kharkiv has developed and implemented a comprehensive plan to control the influenza outbreak. Increasing of the incidence in the season 2009-2010 began earlier than usual in October 2010. The maximum level of incidence of influenza and acute respiratory infections (ARI) in Kharkiv was registered on the 52-nd week of the year and it was 31,4 per 10 thousand of population. Vulnerable groups included pregnant women, patients with morbid obesity and those with chronic respiratory disease. Because of the timely introduction of restrictive measures in schools and out-of-school institutions, the incidence of influenza and ARI exceeded the epidemic thresholds among the school-age children only on the 51st and 52nd weeks of the year. Somatic hospitals of the city have been restructured to provide qualified medical care of cases of influenza and ARI with severe disease and complications and to treat pregnant women. Carrying out other organizational-methodical, preventive and anti-epidemic measures helped to limit the epidemic spread of the influenza A H1N1 virus in Kharkiv, where the incidence of influenza in this period was several times lower in the Ukraine.

**Conclusions:** The organizational, methodological work of public health surveys and preventive and anti-epidemic measures have gave the possibility to prevent epidemic spread of influenza and ARI in Kharkiv. These lessons for public health action improved timely the understanding of the characteristics and impact of the pandemic. Such measures can be implemented in other areas of the country.

**Key words:** influenza, A H1N1, preventive measures, anti-epidemic measures, surveillance.

## CHRONIC RESPIRATORY FAILURE IN OBSTRUCTIVE VENTILATORY DYSFUNCTION

**Huzum Simona-Cerasela, Balan Ilie**

*Academic adviser:* Lovin Sanziana, M.D., Assistant Professor, "Dunărea de Jos" University, Galati, Romania

**Introduction:** The obstructive ventilatory dysfunction characterized by increased resistance to airflow in expiration develops belatedly in the evolution of chronic broncho-obstructive diseases and represents the starting point of an important disability and deterioration of quality of life.

We present the preliminary results of a validation study of Dijon score and St. George score in correlation with obstructive ventilatory dysfunction and its sub-pathologies.

The study is based on establishing a final score that depends on the physical activity and respiratory capacities of the patients.

The indices denoting the physio-pathological disorder are represented by: VEMS (forced expiratory volume in one second), IT (VEMS/CV) and the correlation with the scores of quality of life and physical activity self-declared.

**Background and aim** of the study is to highlight the correlation between functional indices and the subjective statement of the patients on an alteration of their daily activities.

**Materials and Methods:** We assessed 50 patients diagnosed with the obstructive ventilatory dysfunction, bronchial asthma or COPD (chronic obstructive pulmonary disease). In median age patients (53.21) VEMS, CV, VER, IT were evaluated in order to establish the difficulties regarding the respiration and level of physical activity of the patients using Dijon score and St. George score. Dijon score represents self-declared physical activity (the maximum score of 30 represents a good physical activity, and St. George score represents the alteration of life quality in chronic patients, a high score meaning a more severe impairment (3 domains: symptoms, activity, impact)

**Results and Discussion:** In the studied patients, the correlation between the age and symptoms gives a negative value (r = -0.035). It was noticed that older patients (>60) have a higher symptomatic index. The most marked symptom is cough associated with heavy breathing. Patients aged over 50 years shows a moderate or small physical activity, the correlation between age and activity having an index <1 (0.03). The severity of all symptoms is directly proportional with the age. It was noticed in COPD patients that the correlation between VEMS and symptomatology had a strongly negative value (r = -0.034), found in chronic bronchitis characterized by reduced physical activity. Most patients with IT < 0.5 have been diagnosed with COPD, the main symptom that influences health being dyspnea. Contrary to expectations, the patients with IT between 0.5 - 0.2 have normal VEMS accompanied by a decreased vital capacity.For the group of patients analyzed the average Dijon score is 13, age being directly proportional to its values while symptomatology is inversely proportional to the same values. In patients with Dijon score <11 physical activity causes fatigue due to important lack of air, the main symptom being dyspnea. The best correlation was noticed between IT and IMPACT score of ST G (r = -0.77)

**Conclusions:** Dijon score approach with respiratory indices (VEMS, CV, IT) represents a stable method of analysis for respiratory failure and their associated diseases. The impact score of the questionnaire of St George is a good indicator of the obstructive level.

**Keywords:** Bronhical asthma, correlation, St George, Dijon, impact.

## TO PREDICT INFLUENZA RELATED PNEUMONIA - A CONTINUOUS CHALLENGE DURING PANDEMICS

**Chesov Dumitru**

*Academic adviser*: Botnaru Victor, M.D., Ph.D., Professor, State Medical and Pharmaceutical "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Background:** The last influenza pandemic showed the importance of the early beginning of antiviral therapy for a successful outcome of influenza related to pneumonia (IRP). Thus the ability to differentiate the influenza pneumonia from the bacterial one, during the first hours after the patient's admission, is crucial for further management of the case. A study was performed to investigate whether adults with severe $H_1N_1$ pneumonia could be distinguished clinically form patients with non-$H_1N_1$ community acquired pneumonia (CAP).

**Methods:** Clinical and epidemiological data of 75 adults admitted for severe $H_1N_1$ IRP were com-

pared with a prospective study cohort of 127 adults with severe non-$H_1N_1$ CAP admitted during inter-pandemic period. A multivariate logistic regression model was generated for prediction of $H_1N_1$ influenza related pneumonia.

**Results:** In-hospital mortality in both cohorts was pretty similar, to 20% in $H_1N_1$ IRP cohort compared with 19,7% in non-$H_1N_1$ CAP cohort. A diagnostic prediction model was derived by assessing one point for each of the seven criteria: demographic (age≤ 65 years), clinical (presence of myalgia/arthralgia, absence of hypotension, absence of pathological bronchial breathing), laboratory (leucocyte count ≤ $12*10^9$/l) and radiological (presence of bilateral involvement, extension to superior pulmonary areas). The threshold yield of the model was obtained for 4 points value of that, with a negative predictive value of 92,4% and 88% of sensibility.Accuracy of the obtained model was appreciated using the value of area under receiver operatingcurve, which corresponds to a very good one - 0,93 (95%CI 0,89 - 0,96).

**Conclusion:** There are substantial clinical differences between $H_1N_1$influenza related to pneumonia and inter-pandemic CAP. A model based on seven accessible criteria allows the early identification of adults with severe influenza related pneumonia.

## CLINICAL AND EVOLUTIVE PECULIARITIES OF THE ASTHMA AT FREQUENT ILL CHILDREN

**Cojocaru Nina, Afanasiev Daniil**

*Academic adviser:* Donos Ala, M.D., Ph.D., Professor, State Medical and Pharmaceutical "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Asthma is one of the main causes of chronic morbidity and mortality in the whole world. The World Health Organization estimates that there are 300 million of people suffering of asthma worldwide. Asthma mostly occurs in childhood (allergic type) and after 40 years (non-allergic type). Asthma incidence is 3 – 6 ‰ in the world. It estimates that Asthma causes 250.000 of lethal cases annually in the whole world. The mortality of asthma rate is estimated from 2 to 4 cases at 100.000 of population annually. It is estimated that the incidence of Asthma in the Republic of Moldova is ≈3 at 10000 children, but the prevalence on the actual period is 8-15,4 cases at 10000 children.

**Materials and methods:** The group included 76 children with Asthma (54 boys and 22 girls) at the age under 5 years old hospitalized in the Allergy department of the First Municipal Children Hospital, in 2011 year. The methods, used in the clinical study, were:

1. Clinical.
2. Instrumental.
- Radiology, Visceral ecography.
- Spirography, Electrocardiography.
3. Laboratory research.
- General and biochemical blood analysis, Urine general analysis.
- Serum analysis, Immunological analysis.
- Allergens sensibility, Acid base report.
- Mucus bacteriology study, Infection diseases marckers.

**Results:** There were 50 % of children that suffer of bronchopneumonia as an associated disease. On the second place was Fe-defficient anemia (21%). Allergic rhinitis is present in 15,78% of children.

Laryngotracheitis was present in 13%. There were some diseases as complications: Reactive unspecific hepatopathy (26%), Toxico-infectious cardiopathy (9%), Reactive pancreatitis (7%) and chronic gastroduodenitis in acute stage (7%). The most frequent pathologies, that had been the in past, from the anamnesis, were: Obstructive bronchitis (32%) and Pneumonias (24%). Ig E total and specific has high rates (76%) and cutaneous test was positive in 54%.

**Conclusions:** Asthma is common and in the Republic of Moldova (8-15,4 cases at 10000 children). Pathology of Asthma encourages the creation of the frequent ill children before the diagnostic of itself. The confirmation of diagnostic is made with the help of positive cutaneous tests (54%) and high rates of IgE total and specific (76%). Heredo-collateral anamnesis to allergic diseases is positive (13%). Manifestation of Asthma is preceded by the presence of allergic diseases in the child anamnesis: Atopic dermatitis (10%), frequent acute respiratory diseases (63%) and Allergic rhinitis (15%).

**Keywords:** Asthma, frequent ill children, IgE, acute respiratory diseases.

## ASSESSMENT OF EFFECTIVENESS IN ANTIRETROVIRAL THERAPY WITH FIRST-LINE REGIMENS IN HIV-INFECTED PATIENTS

**Bîstriţchi Ina**

*Academic adviser:* Holban Tiberiu, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** The HIV/AIDS infection in the Republic of Moldova is a priority public health problem. In the Republic of Moldova, after the onset of HIV/AIDS (1987) until 2011 were registered 7125 people infected with HIV. In 2011 were detected 721 new cases of HIV (13.87 to 100000 population), in 2010 to 704 cases. In 2011 were stricken with AIDS 420 persons (2010 - 290). The most frequent AIDS related conditions are pulmonary infection with Mycobacterium tuberculosis – 49,19%, esophageal candidiasis – 20% and the HIV fatigue syndrome (wasting syndrome) – 6,66%. International and national guidelines recommends that any patient with T-lymphocyte number CD4<350 cells/µl, should receive HAART (Highly Active Antiretroviral Therapy), whether it is asymptomatic, and the number of T-lymphocytes with CD4<200 cells/µml are with advanced HIV infection should receive immediate HAART. In addition, patients with CD4 between 350-500 cells/µl and HIV RNA>100.000 copies/ml should receive HAART. In the Republic of Moldova is provided universal access to HAART for people with HIV/AIDS, which started to be applied since 2003. Currently in HAART are included 1606 people with HIV/AIDS, out of which 771 people started HAART in 2011.

**Objectives:** assessing clinical, immunologic and virologic evolution in naive HIV-infected patients, which received HAART 36 weeks (9 months).

**Materials and methods:** We followed up 40 adult patients diagnosed with HIV/AIDS infection (average age 36,4 years), supervised in the specialized department and territorial cabinet of the Clinical Hospital of Infectious Diseases „Toma Ciorba", of which, 19 (47,5%) patients initiated HAART with AZT(zid ovudine)+3TC(lamivudine)+EFV(efavirenz) (I regimen) and 21 (52,5%) patients with TDF(tenofovir)+FTC(emtricitabine)+EFV(efavirenz) (II regimen), were evaluated during the first 36 weeks.

**Results:** Out of the 40 patients who have initiated HAART, 28 (70%) patients were detected late with a number of CD4 < 350 cells/µl, out of which 18 (64,2%) patients were detected very late with a number of CD4 < 200 cells/µl. The most frequent opportunistic infections were present in the patients of our group, consisting of oropharyngeal candidiasis - 45%, pulmonary tuberculosis – 37,5%, Herpes Zoster – 7,5%, HIV fatigue syndrome (wasting syndrome) – 7,5% and HIV encephalopathy – 7,5%.

At initiation of HAART, 75% of the investigated patients were in AIDS stage (A3 – 7,5%, B3 – 25%, C2 – 7,5% and C3 – 35%). The average CD4 value at HAART initiation was: I regimen – 214,11±16,77 cells/μl and II regimen – 146,61±22,92 cells/μl ($p<0.05$). The average of viral load at HAART initiation was: I regimen – 1502,6±523,5 copies/ml and II regimen – 1623,5±794,5 copies/ml (p 0.05). When assessed at 12 weeks 13 patients had undetectable viral load (I regimen - 7 (36,8%), II regimen - 6 (28,6%)), at 24 weeks - 9 patients had undetectable viral load (I - 5 (26,3 %), II - 4 (19,04%)) and at 36 weeks - 9 patients had undetectable viral load (I - 7 (36,8%), II - 2 (9,5%)). The increase in CD4 was for I regimen to 222,11±32,45 cells/μl, maintaining at the same level with the baseline, and for II regimen – 200,42±43,36 cells/μl (to 53,8 cells/μl - of 1,36 times from baseline) (p 0.05).

**Conclusions:** This study showed that: 1. Over two thirds (70%) of HIV/AIDS – infected patients were detected late, with the number of T-lymphocytes CD4<350 cells/μl, with or without AIDS related conditions, fact that leads to the need of improving HIV testing strategies. 2. Effectiveness of ART regimen applied appreciated in terms of virological response is higher for I regimen (3TC+EFV+AZT), and in terms of immunologic response is higher for II regimen (TDF+FTC+EFV). The dissociated virological and immunological response at HAART, registered for some of the patients, in many cases is the result of insufficient adherence to treatment, which increases the risk of progression of the disease.

**Key words:** HIV/AIDS infection, antiretroviral therapy (HAART), late diagnoses.

## VARICELLA COMPLICATED WITH LOBAR PNEUMONIA AND PARAPNEUMONIC PLEURISY

**Olaru Claudia-Adriana**

*Academic adviser:* Diaconescu Smaranda, M.D., Ph.D., Professor, Children Emergency Hospital „Sf. Maria", Iasi, Romania

**Introduction:** Chickenpox is an acute, benign, highly contagious disease characterized by generalized vesicular exanthema with self-limited evolution. Pneumonia is the most serious complication of varicella, occurring more frequently in adults (>20%) than in children.An outbreak of the disease started in late autumn 2011 in Romania and continues at present.

**Case report**: The authors present the case of a 4 years old boy admitted into the Infectious Diseases Hospital with chickenpox.On the 4-th day of the disease high fever, dyspnea with tachypnea, intercostal retractions, pleuritic pain and cough appeared and the patient was transferred to the Children Hospital.

Clinical examination showed abolished left basal vesicular breath sound with wet crackles in the middle and superior lung area; chest X-ray revealed inferior left lobe pneumonia and mild pleural effusion. Tracheal aspirate culture was negative.Leucokytosis with neutrophilia and increased ESR and C-reactive protein was found.

Broad spectrum antibiotherapy was started with favourable evolution after 3 weeks.

**Discussions:** Among the most serious complications of varicella is pneumonia; it is less common in children than in adults but it may lead to death. However, the epidemic status in Romania in 2011-2012 was associated with an increased number of viral pneumonias; in our case the radiological aspect was highly suggestive for a secondary bacterial infection even with negative aspirate culture(explained by prior antibiotherapy).The history for chickenpox vaccine was negative in our patient.In Romania, chickenpox immunization is not included in the National Programe of Immunisations at this moment.

## LYME'S DISEASE. CLINICAL AND SOCIAL ASPECTS

**Şchiopu Irina**

*Academic adviser:* Morcov Grigore, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Lyme disease is an infectious disease with chronic relapsing evolution induced by microorganisms of the genus Borrelia, transmitted by tick bite. It affects the skin, joints, central nervous system (CNS) and internal organs. The affectation of the skin is manifested by the presence of erythematous–oedematous macules with round–oval shape, with well defined edges, with pale center and an erythematous shallow at the periphery.

**Purpose:** To acquaint with epidemiology, etiopathogenesis, clinical examinations, paraclinical examinations and treatment of Lyme's disease by studying a group of patients admitted to public medical institution DDVR in Republic of Moldova, in the period of 2004-2011.

**Aims:**

- To study reference literature on the etiology, pathogenesis, clinical data, modern diagnostic and therapeutic approach of Lyme's disease
- To study the aspects of clinical evolutionsof 57 patients diagnosed with Lyme's disease
- Estimation of the efficacy of introduction of an antibiotic in the treatment of Lyme's disease
- Establishing the correct diagnosis depending on clinical stage
- Assessment of epidemiological features of Lyme's disease in Republic of Moldova

**Materials and methods:** This study included 57 patients, aged between 5 and 70 years, all diagnosed with Lyme's disease. All the patients were examined, diagnosed and treated in Dermatovenerology Clinic of Medical University „N. Testemiţanu" located within DDVR public medical institution.

**Results:** After complete researches of the 57 patients the following data were obtained: a big number of patients were treated from 2004 to 2011 in hospital. The number of positive results diagnosed and confirmed in laboratory conditions in Republic of Moldova was 254 patients. From the group of patients examined it was determined that 23 patients (40%) were from rural areas and the peak of 34 patients (60%) was from urban areas. The infection occured more frequently during warmer months of the year: April (17,5%), May (14%), June (23%), July (21%), August(14%), September (10,5%). The basic symptoms and frequently complaints of the patients were: headache, which was found in more than 50%, also low appetite, fatigue and general malaise. Primary manifestations occur more often on the legs-53%, and are followed by other body regions that are less affected. General laboratory tests allowed us to note the following changes in general blood analysis: lymphocytosis is above the normal range and is up to 60%, ESR is increased up to 12-50 mm/h. After examination of all the patients using ELISA serological test, the following results were obtained: primary stage – 33 patients, the secondary stage – 18 patients, the third stage – 6 patients.

**Conclusions:**

1. The rate of addressing increases during the warm seasons, especially in June and July-34%
2. There is an increase of the number of patients diagnosed since 2008, with Lyme's disease that were treated in DDVR hospital, with a predominance of females over males, at an ratio of 3:1
3. Efficiency of the treatment is 100% when the disease is diagnosed at primary stage, but it is less efficient when the disease is diagnosed in the secondary or tertiary stage
4. Most of the patients were admitted to the hospital in the primary stage of the disease, which denotes an increased change of the population on the pathology.
5. In Republic of Moldova the disease is recorded more frequently in patients with habitat in forests, alongside the rivers Nistru and Prut in rural population – 40%, in urban – 60%.

## MULTIDRUG RESISTANT TUBERCULOSIS

**Margineanu Cătălina, Jugaru Doinița, Barbu Elena, Juganaru Victoria**

*Academic adviser:* Alexandrescu Dana, M.D., Ph.D., Professor, Transilvania University, Brasov, Romania

**Background:** In recent years there is an increasing incidence of multidrug resistant tuberculosis which has important medical, social and economical consequences.

**Patients and methods:** We report the case of a 44 year old male, smoker which was diagnosed in 2005 with multidrug resistant pulmonary tuberculosis. The patient is from an old disease outbreak, his father had pulmonary TB.

**Results:** The patient was hospitalized in 2005 and 2006 with secondary bilateral fibrocaseus ulcerating pulmonary tuberculosis and right pleural tuberculosis with positive BK in sputum culture. He followed and completed the treatment strictly supervised (first-line regimen) and in the second month of treatment BK was negative. Five months after the treatment ended the patient was hospitalized with reactivated pulmonary TB, miliary form, BK positive in sputum culture. Antibiogram showed the existence of resistant BK stains at three first-line antituberculosis drugs: Isoniazid, Rifampicin and Streptomycin. There was established an individualized treatment with four drugs which included reserve drugs. The treatment lasted 23 months with a smooth evolution of the patient with radiological improvement and bacteriological negativation.

**Conclusions:** In severe chronic MDR-TB are important: a correct clinical and laboratory diagnosis, completed appropriate treatment regimen, monitoring results, patient behavior including his education regarding the disease.

## CASE REPORT: NON-HODGKIN'S LYMPHOMA T-CELL WITH PRIMARY SKIN DAMAGE

**Morgoci Victor**

*Academic adviser:* Musteață Larisa, M.D., Ph.D, Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** I studied a clinical case of non-Hodgkin T-cell with primary damage to the skin. This pathology is a malignant tumor that develops from hematopoietic cells (T lymphocyte) which are located extra medullary. Is found very rarely (0.2 - 0.4 to 100,000 of total population) and 1 to 2.2% of all lymphomas.

**Purpose and objectives:** To study a case report with Non-Hodgkin's lymphoma T-cell with primary skin damage, from the clinical perspective and treatment efficacy. To analyze different treatment schemes: CHOP, CHOEP, CVAMP, VAMP and Roferon.

**Materials and methods:** Clinical case.

**Results:** We established the following diagnosis: Non-Hodgkin's lymphoma T-cell with primary skin damage, with progression in the lungs, stage – VI A.

**Conclusions:** A. It was found lymphoma Non-Hodgkin T-cell with primary skin damage, with progression in the lungs, stage - VI A; B. The priorities of the treatment with Roferon in association with the next schemes of treatment, CHOP ", CHOEP", CVAMP ", VAMP".

**Keywords:** Lymphoma, Non-Hodgkin's lymphoma, primary T-cells with primary skin damage

## PATHOGENETIC, CLINICAL, DIAGNOSTIC AND THERAPEUTIC ASPECTS OF ICHTHYOSIS

**Cîvîrjic Irina, Bîcos Irina**

*Academic advisor:* Morcov Grigore, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Each year, more than 16 000 children affected by a form of ichthyosis are born in the world. Ichthyosis can affect people of any age, gender or racial type. The most commonly encountered forms of this disease are ichthyosis vulgaris the incidence being reported as 1 case per 250 population and the X-linked ichthyosis with a frequency of 1 per 6 000 population.

**Purpose and Objectives :** Evaluation of the pathogenetic, clinical, diagnostic and therapeutic aspects of different types of ichthyosis in order to estimate the epidemiological features and the specific aspects of patients with ichthyosis in Republic of Moldova.

**Methods:** the literature review, the retrospective analysis, the statistical, comparative and graphical methods.

**Results:** The retrospective, monocentric, descriptive study included the analysis of 60 medical records selected for the past 3 years, 17 records for the year 2009, 25 records for 2010 and 18 records for 2011. Thus, from these 60 medical records, including new cases as well as repeated hospitalizations, was obtained a group of 45 patients with different froms of ichthyosis registered in the Public Medical-Sanitary Institution Republican Dermatovenerologic Dispensary (RDVD) of the Republic of Moldova. It was determined that within this group of study there is no sex prevalence, the affected men, women report being established as 24 to 21. This research also highlighted that 29 of 45 people or 64% are suffering from ichthyosis vulgaris, the second most common disease being NBCIE with 18% of affections, or 8 people of 45 from the study. The most frequently detected age period of impairment in this group includes patients from 11 to 20 years in 42% of cases and from 6 to 10 years in 33% of cases. The distribution of the same 45 patients depending of their year of birth revealed that 46.6% of cases are born in 1991-2000 years and 37.7% between 2001-2011 years. Considering climacteric factor as a major trigger of exacerbations in ichthyosis, we investigated the study group encoding on their addressability month of the year or season. The results showed that 35% of patients were sent for treatment in the RDVD in spring, where February and March are considered the top months of exacerbation. Supposing the implication of the territorial factor into pathogenesis of ichthyosis, we have observed the probability of its prevalence in some regions of Moldova where 57.7% cases is encountered in the center of the republic, half of them in the capital Chisinau.

**Conclusion:** The ichthyosis is a rare but a difficult disease. The most common type encountered in Moldova is ichthyosis vulgaris (64%) and the most frequently detected age period of impairment is from 11 to 20 years (42%). An important factor for exacerbations symptoms was revealed as climate factor, the addressability percent increasing in the spring (35%). This pathological condition gives an ugly aspect of the skin, and once damaged facial skin, the psychological consequences are imposing.

**Keywords:** ichthyosis, retrospective study, group, patients, prevalence.

## ALOPECIA IN CHILDREN - CORRECTION AND PROPHYLACTIC

**Pats N.**

Grodno State Medical University, Grodno, Republic of Belarus

**Introduction:** At present time there is no standard treatment of children's alopecia and the outcomes are at times disappointing. The existing methods are not always effective.

**Purpose:** to improve the efficiency of alopecia areata treatment caused by dysmicroelementosis in children and juveniles a new method of treatment has been elaborated and approached to prophylaxis.

**Objectives:** The objectives of the present study were to evaluate the elaborated method of alopecia areata correction due to dysmicroelementosis in children and juveniles and to determine the main approaches to dysmicroelementosis prophylaxis with clinical manifestations of alopecia.

**Materials and methods:**

The method is applied as follows: after the patient's assessment by a dermatologist and exclusion of alopecia areata of mycotic etiology, the levels of Pb, Cu and Zn excretion with urine are determined. In the presence of alopecia sites in children which had developed no earlier than 2 months previously and in the increase of urine lead excretion within the limits from 0.1mg/l to 0.2mg/l, and the increase of copper and zinc urine excretion, the patient is administered a certain complex consisting of the following preparations: Kyolic, Spirulina platensis, Sophora japonica The whole complex should be taken with meals for a period of 2 months. 32 children and juveniles aged from 4 to 17 years residing in Belarus and Russia, and having the clinical manifestations of alopecia areata. Control groop – 18 children with alopecia areata, tretment with «Medetopect». Statistical method: «Statistica 6.1».

**Results:** Complete hair growth regeneration in foci of alopecia was noted in 29 patients from fest groop, the overall positive detoxification of the organism was marked as well, microelements urine composition before and after the treatment providing the evidence of this.

The program of primary prophylaxis of the alopecia areata of increased chemical hypersensitivity should be started with the educational work among various groups of population about possible ways of heavy metal salts penetration into the human organism. Secondary prophylaxis necessitates elaborating regimens of prophylactic supervision of children with the syndrome of increased chemical hypersensitivity. Integrated rehabilitation is only possible in coordinated activities of professionals in the field medicine and education.

**Key words:** children, alopecia areata, dysmicroelementosis, method of correction, prophylactic.

## THE ASPECTS OF THE CLINICAL EVOLUTION OF MALNUTRITION IN EARLY CHILDHOOD

**Pavlovschi Iana, Pavlovschi Pavel**

*Academic advisor:* Guragata Anna, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Hypotrophy – a chronic disorder of nutrition caused by protein and energy starvation. According to the statistics provided by the WHO, the child mortality is mostly determined by acute respiratory diseases, diarrheal diseases and perinatal factors in equal proportions (approximately 19%). Every second child who suffered and died from these diseases was diagnosed with hypotrophy.

**Aim:** The research of the hypotrophy course with varying degrees of manifestation taking into account the duration of the disease and comorbidities.

To identify the most common malnutrition's causes and nutritional errors that caused the hypotrophy.

**Methods and materials:** A retrospective analysis of clinical and paraclinical examination data of 50 children suffering from hypotrophy treated at the Clinical Republican Hospital for Children 'E.Cotsaga'

during 2010 – 2011 was carried out. The researchers used the software 'WHO Anthro' to establish the nutritional status of the researched children (the 'WHO Anthro' software for PC, version 3, 2009 – software designed for the assessment of the worldwide growth and development of children. Geneva, WHO, 2009 - http://www.who.int/childgrowth/software/ru/).

**Results and discussions:** The average age of children was 10 ±7, 3 months. The research concentrated upon the study of second and third degree hypotrophy. The anamnesis has shown that 9 children (18%) were breastfed, 18 children (36%) were fed replacement products (11 children (22%) were fed partially adopted mixtures, 7 children (14%) were fed unadapted mixtures (whole cow's milk), 15 children (30%) mixed-fed. Approximately 40% of children were mixed-fed on NAN lactose-free mixtures, Alfare, Nutrilac/Nutrilon, Maliutka (Малютка). Approximately 24% of children suffered from exogenous hypotrophy development while as a manifestation of endogenous factors, the hypotrophy was marked in the case of 18% of children; 58% of children suffered from hypotrophy caused by violations of nutrition types (unadapted milk mixtures, flour products' excess, and lactose intolerance).

**Conclusions:** Main causes of hypotrophy diagnosed among researched children were gastrointestinal diseases (gastroduodenitis, enterolitis) with the development of the secondary malabsorbtion syndrome as well as prenatal facts (congenital malformations, prematurity and cystic fibrosis). The most frequent diet errors were early transition of children to mixed and artificial feeding using whole cow's milk and flour products. A number of breast-fed children were diagnosed with a lactase deficiency.

**Key words:** malnutrition, nutritional status, diet errors.

## BABIES MATRIX AS AN INSTRUMENT OF ANALYSIS OF PERINATAL MORTALITY AND MORBIDITY (by data of the Aktobe Tertiary Care Center during 2010-2011)

**Askar Sana**

*Academic adviser:* Tusupkaliev A., M.D., Ph.D.; Balmagambetova S., M.D., Ph.D., Assistant Professor, West Kazakhstan State Medical University "Marat Ospanov", Aktobe, Kazakhstan

**Introduction**: Babies Matrix is an adjustable tool of evaluation, which allows collecting, organize, analyze and convert data in information for arrangements on Infant health protection. BABIES integrates five conceptions in order to help the Program manager to make decisions:

1. Time: Age of the fetus/infant at death
2. Group of Weight at birth or Dimension of the fetus/infant
3. Thinking in two dimensions – Weight at birth and Time in matrix of death
4. Interpretation of boxes in BABIES and grouping it in complexes of arrangements
5. Untapped Opportunities.

**Aims and Tasks** for proceeding of BABIES Matrix:

1. to view the data and adapt the Matrix to the medical clinic where the Program proceeds
2. to put the data in the Matrix
3. to determine "Untapped Opportunities"
4. to analyze "Untapped Opportunities" by period, place and contingent
5. to choose the arrangement strategy and to determine targets and tasks
6. to choose detectors of the arrangement result and the process of your Program
7. to repeat the cycle in order to achieve continuing of the situation improvement.

**Materials**: The work is based on meta-analysis of the infants medical histories within the period of 2010-2011, analyzed by BABIES Matrix.

**Results**:

| Weight of infant at birth in gr. | Antenatal mortality | Intranatal mortality | Early neonatal mortality | Late neonatal mortality | Postneonatal mortality |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 500-999 | 2010-11.1 | | | | |
| 1000-1499 | 2011-5.4 | | | | |
| 1500-2499 | 2010-10.1 | | 2010-8.5 | | 2010-1.5 |
| 2500 and more | 2011-5.8 | | 2011-3.6 | | 2011-0.6 |

**Analysis of our results:**

*Main problems within a period of 2010 were in:*

- low qualification of Doctors-neonatologists
- lack in Human recourses
- training of Personnel in scarce
- unearned practical skills of Staff
- not all midwives were able to evaluate infant state correctly before doctor's examination.

*Thus, the following complexes of arrangements were being undertaken:*

- Posts of Midwives were strengthened (4 instead of 3) and a number of doctors-in charge were added (3 instead of 2)
- Doctors-neonatologists followed professional trainings on infant resuscitation
- Trainings on infant resuscitation, handwashing and compliance of the thermal chain were performed constantly.

**Conclusions:**

Thus, BABIES Matrix helps:

- to determine a problem in the area of Mother and Infant health;
- to choose the most effective interventions for solving problems;
- to carry out monitoring and evaluation of efficacy of those interventions.

**Key words**: perinatal mortality, BABIES Matrix, arrangements, age of death.

## EARLY MARKERS OF ATRIAL FIBRILLATION

**Barbe Adrian, Viligorskaia Ecaterina**

*Academic adviser*: Poliaska Oksana, M.D, Ph.D., Professor, Bukovinian State Medical University, Chernivtsy, Ukraine

**Introduction:** Atrial fibrillation (AF) is the most widespread arrhythmia, which increases with the aging of population. The frequency of ischemic stroke in patients with non-rheumatic form of AF is 5% per year that is by 2-7 times more than in patients without AF. [O.Y. Zharinov, 2011] This type of disorganization of heart beat is one of the most important factors of thromboembolic complications and heart failure in patients with cardiac disease [A.S.Sychev, 2011].

**Purpose:** For identifying markers of AF we have examined 20 patients with stable angina of the IIIrd functional class (FC III). Group I consisted of the patients with AF, group II consisted of the patients

without AF. Supervised groups were identical, according to gender and age of the participants. The average age of the patients was 50.2.

According to Framingham study, 0.3-0.4% of adults suffers from various forms of AF, reaching 8.8% of people aged over 80 years. Many epidemiological studies: Framingham study, MRIFT, EVA, MONICA, were conducted to determine the prevalence of coronary heart disease and risk factors for its development. However the studies of AF on the population's level are rarely conducted.

**Methods:** All patients were determined by body mass index (BMI), Kerdo index, held echocardiography and biochemical parameters of blood and urine. Software StatSoft Statistics 8.0 (average arithmetic, standard errors, Student's t-test, the Kolmogorov-Smirnov test, U-Mann-Whitney test) were used to process the survey results.

**Results:** We have identified the likely ($p<0,01$) differences in the groups during comparison. Thus, patients from group II appeared to have significantly higher body weight, BMI was higher than 25, the highest Kerdo index, signs of the left ventricular hypertrophy. The patients with AF have a high prevalence of risk factors: 2/3 of patients have hypertension, hypercholesterolemia, 25% are smokers, half of the surveyed patients with AF conduct sedentary lifestyle, all patients have excess body weight, left ventricular hypertrophy, increasing of the activation of sympathoadrenal system.

**Conclusion:** Early identification of persons at AF risk can prevent the development of arrhythmias and stroke and therefore a decrease of cardiac and cerebral death.

**Keywords:** atrial fibrillation, early markers, Kerdo index, Framingham study, tachyarrhythmia, stable angina, left ventricular hypertrophy, arterial hypertension, biochemical blood analysis.

## IDENTIFICATION OF THE MAIN STEROID-SENSITIVE DEVELOPMENT MECHANISMS IN EXPERIMENTAL MODEL OF BRONCHIAL ASTHMA

**Bazhenova Yulia, Grineva Yulia**

*Academic adviser:* Demko Irina, M.D., Ph.D., Associate Professor; Salmina Alla, M.D., Ph.D., Associate Professor; Lyudmila Kaptyuk, M.D., Ph.D., Associate Professor, Krasnoyarsk State Medical University, Krasnoyarsk, Russian Federation

**Introduction:** Bronchial asthma (BA) is a serious problem in all countries irrespective of the level of their development. Prevalence of the disease fluctuates, depending on the region, and averages in the majority of the states from 2 to 25,5 %. Annually, all over the world, BA carries away about 250 thousand lives, many of which could be saved with adequate treatment and educating the patients. In present, there is a rise of illness growth with BA and actual experimental modeling of the given disease for the purpose of a fuller understanding of pathogenesis and working out ethiopathogenetical therapy methods. In the literature, a variety of experimental models BA with animals which are used for studying various aspects of pathogenesis and approbations of new ways of treatment is described. At the same time each model has certain features which limit the sphere of its use. For today, the urgency of such works is increased in connection with the detection of new markers of BA and, accordingly, new directions of pathogenesis BA research and to search for pathogenetical well-founded methods of treatment. We first hypothesized that the reduced sensitivity to corticosteroids in bronchial asthma may be due to increased expression of P-glycoprotein (Pgp).

**Objective:** To study the nature of the coupling CD38-and Pgp-dependent mechanisms of hypereactivity and bronchial steroid-sensitive allergic animals to create a concept to overcome the reduced sensitivity to corticosteroids in bronchial asthma.

**Materials and methods:** The objects of research are laboratory animals (rats) of both sexes at the age of 6-7 weeks. Group 1 - rats with simulated asthma; group 2 - animals with a simulated asthma and "treated" glucocorticosteroid (GCS), dexamethasone; group 3 - the control group (nonallergic);

**Results:** In the process, an experimental simulation of asthma in animals, assessment of clinical signs allergization ovalbumin, and immunocytochemical study of preparations of bodies of animals and spectrofluorimetrical research of preparations of animal bodies were carried out. The study obtained a model of bronchial asthma in rats, confirmed clinically, and found that: the expression of CD38 was higher in group 1 rats; the activity of CD38 in experimental models of asthma is the highest at the site of localization of the inflammatory process, i.e. in the lungs; revealed a positive correlation relationship (r = 0,720894) between the activity of ADP-ribozilciklazy in the tissues of lung and spleen in the first group of animals suggests that the activity of CD38 is increased in asthma, not only in the lungs, but also in the spleen; the level of Pgp expression did not differ in rats with simulated asthma and control groups.

**Conclusions:** It would be desirable to notice that now already there are modulators of activity in both expression of Pgp and CD38 which demand the further studying and in the future could be used for treatment BA.

**Keywords:** bronchial asthma, P-glycoprotein, CD38, steroid dependence, steroid-sensitive.

## PERIPARTUM CARDIOMYOPATHY: CASE REPORT

**Chiosa Oxana**

*Academic adviser:* Revenco Valeriu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Peripartum cardiomyopathy (PPCM) is a disease of uncertain etiology, characterized by left ventricular systolic dysfunction and symptoms of heart failure, which occur in previously healthy women mainly during the end of pregnancy and the first 5 months after delivery. The incidence of PPCM is around 1 in 2500–4000 in the USA, 1 in 1000 in South Africa, and 1 in 300 in Haiti. Risk factors for PPCM include multiparty, advanced maternal age, twin pregnancy, Afro-American race etc. The precise cause and mechanism of PPCM remains unknown, but numerous hypotheses have been proposed (myocarditis, abnormal immune response to pregnancy, abnormal response to the hemodynamic stress of pregnancy, excessive prolactin production etc). The excessive prolactin production hypothesis represents a first potential disease-specific pathophysiological mechanism which offered bromocriptine as a potential novel therapeutic agent for treatment of PPCM patients.

**Purpose:** Revealing the importance of early diagnosis and initiation of adequate treatment in patients with PPCM.

**Objectives:**

- Study of the incidence, risk factors, possible causes of PPCM;
- Study of the clinical picture, evolution, new treatment strategies, prognosis of PPCM.

**Material and methods:** literature review, data of various studies, retrospective analysis of patient's chart and treatment sheet.

**Results:** A 44-year-old woman was admitted to the department of Cardiology with following complaints: dyspnoea, chest discomfort, heart palpitation. Complaints ofdyspnoea, persistent cough and fatigue appeared about 3 years ago after Cesarean delivery of the second baby. Her treatment was not adequate about 2 years. She gave no history of any cardiac problems before. On examination, she was

pale, slightly icteric, with nasolabial triangle cyanosis. There was oedema of low extremities. Her BP was 100/70 mm Hg, HR- 98 b/min, irregularly!! irregular. The cardiac auscultation showed gallop rhythm, significant cardiac murmurs. ECG: sinus tachycardia interrupted by polymorphic ventricular extrasistoles. Chest X-ray: venous stasis and increase in cardiac silhouette. Echo-CG showed dilatation of all chambers, ejection fraction-33%, there was mitral and tricuspid regurgitation (IV degree), severe pulmonary hypertension-75-80 mmHg. The laboratory investigations: increased liver tests. The final diagnosis was proposed: Postpartum cardiomyopathy. The patient was treated with diuretics, β-blockers and ACEIetc.

**Conclusion:** Peripartum cardiomyopathy is a relatively rare but a life-threatening form of heart failure. Heightened suspicion is important when a pregnant woman presents with signs of heart failure, because early diagnosis allows proven treatment to be started. Standard heart failure therapy should be started in postpartum patients with this disease, using available local protocols.

**Keywords**: peripartum cardiomyopathy, prolactin, treatment.

## RHYTHMOCARDIOGRAPHY USED TO STUDY THE IMPACT OF VALIDOL AND NITROGLYCERIN ON HEART RATE VARIABILITY AMONG PATIENTS WITH STABLE STENOCARDIA

**Chernyaev M.**

*Academic adviser:* Safronova E., M.D., Ph.D., Associate Professor, Chelyabinsk State Medical Academy, Chelyabinsk, Russian Federation

**Introduction:** One of the main reasons of frequent able-bodied citizens' mortality is ischemic heart disease. Nitroglycerin is used for the reduction of stenocardia attacks, but in case of intolerance of the medication or if side effects appear, it may be substituted for validol. Nowadays peripheral vegetotropic effects of these medications are not completely studied, thus the research that is being carried out is of great topicality.

**Aims:** The present research is aimed at studying the way nitroglycerin and validol affect heart rate variability among patients with stable stenocardia.

In the research were included 32 patients with stable stenocardia of I (16%) %), II (56%) and III (28%) dynamic classes from the Cardiology department of outpatient clinic №8 (Chelyabinsk, Russia). The average age of the group is 54±6,2 years. Rhythmocardiography was realized on apparatus-program complex "Micor" (Russia) of high resolution in order to study heart rate variability. Rhythmocardiography was carried out 2 minutes before and 2 minutes after sublingual nitroglycerin intake and on the other day 10 minutes before and 10 minutes after sublingual validol intake. Heart rate variability was studied initially in lying position (ph) and also in 4 stimulating probes: Vm- Modified Valsalva Maneuver, pA-Ashner-Danjiny Test, AOP –Active Orthostatic Test, $PWC_{120}$ –Loading Test Power Working Capacity simultaneously measured with EKG in real-time. Following findings were determined: RR - beat-to-beat interval; SDNN – Standard Deviation of Normal-to-Normal Intervals of sinus heart rate HR; ARA –Amplitude respiratory arrhythmia; separately were defined: quadratic dispersion of humoral-metabolic HR deflections (σl), sympathetic HR deflections (σm), parasympathetic fluctuations (σs) and their spectral analogues for determination of control factors' correlation in constitutional deflection spectrum BCP -VLF%, LF%, HF%. Statistics were elaborated with the help of StatPlus® program (2009).

**Results:** It was proved from the realized research that with validol and nitroglycerin intake the total heart rate variability (SDNN) significantly increased in all probes. With nitroglycerin intake in com-

parison with the reference level the RR duration in the background probe fell (ph) (p<0,0001), humoral metabolic impact increased aloud: σl в ph (p<0,05), Vm (p<0,001), pA (p<0,0001), VLF% в ph (p<0,01), pA (p<0,05); sympathetic manipulation: σm в Vm (p<0,0001), pA (p<0,01), AOP (p<0,001), PWC (p<0,01), LF% в AOP (p<0,01); parasympathetic regulation fell: σs в ph (p<0,01),HF% в ph (p<0,001), Vm (p<0,01), pA (p<0,0001); with nitroglycerin intake the response value to stimulus in AOP increased: d-a NN% (p<0,01), d-a NN, sec (p<0,05). In probe with validol significantly increased the RR range in all other probes: ph, AOP (p<0, 0001), Vm, pA (p<0,001), PWC (p<0, 01); humoral-metabolic and sympathetic impact increased in all probes, except PWC, the amount of parasympathetic deflections (σs) increased in AOP (p<0, 01) and PWC (p<0, 05), meanwhile the percentage of parasympathetic impact (HF %) (p<0, 05) for certain reduced by ph. Thus, the prescription of these medications has both: positive aspects – SDNN increase after nitroglycerin and validol intake, with validol intake the RR increase in all probes may be observed, σs in AOP and PWC and negative aspects-the increase of humoral-metabolic and sympathetic regulation under the impact of surveyed medications, as normally parasympathetic regulation should predominate. It brings about the necessity of specific control of the prescription and the individual selection of the medications even contrary to standard schemes.

## THE ROLE OF CARDIAC MARKERS TNI, CK- MB, LDG FOR PREDICTION OF SURVIVAL IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

**Cuciuc V., Cernit V., Grumeza D., Sandu V., Abraş M., Grib A.**

*Academic adviser:* Grib L., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** There is an increasing morbidity of patients with acute coronary syndrome (ACS) in the structure of population mortality. The most common risk factors in ACS group , which encompasses pathology of acute myocardial infarction (AMI) is hypertension. In 2000 the European Society of Cardiology and the ACC/AHA (*American College of Cardiology/American Heart Association*), recognized the pivotal role of biomarkers with elevations in their levels the "cornerstone" of diagnosis of AMI.

Troponina I (TnI), Creatine kinase MB isoenzyme (CK-MB), Lactat Dedhidrogenase (LDG), Myoglobin (MYO) – these are markers of cardiac injury. Established correlation in the levels of these markers would allow the prognosis of the survival chances of patients with AMI.

**Aims:** The goal of this study is to examine the distribution of the biomarkers of cardiac cell injury and their association with the AMI mortality rate.

**Materials and methods:** The research was performed retrospectively, based on the archive data of the Municipal Hospital Clinic "Sf. Treime". It has involved 17 patients with diagnosis of AMI and hypertension, like risk factor. Our patients were tested in the laboratory, data were received using comprehensive testing platform "The Alere Triage Meter Pro", using "Alere Triage Cardiac panel" of SANMEDICO company. This is an immunoassay, for quantitative measurements of MYO (ng/ml), CK-MB (ng/ml) and TnI (ng/ml). The marker and the main criterion of patients selection was the TnI below the 0.05 ng/ml.

**Results:** Patients were diagnosed with AMI, according to WHO criteria. Total number of 17 patients were examined (100%), with an average age of 57 years, 7 of them were men (41.17%) and 10 – women (58.83%). Survived during the first 24 hours after hospitalization – 7 ps (41.17%), and 10 ps (58.83%) have died. It was detected CK-MB: 58.82% above the norm (10 ps), 41.12% in normal limits (7 ps); LDG: 52.94% above the norm (9 ps), 47.06% below the norm or in normal limits (8 ps); MYO: 52.94% above the norm (9 ps).

Were identified arterial hypertension level 1 and 2 in all patients, 10 of them (58,82%) were identified with anterior extended MI, that corresponds to obstruction of left anterior descending artery (LAD) artery, 3 ps (17,64%) with circular MI, that corresponds to obstruction of circumflex (CX) artery, and 4 ps (23.53%) with diaphragmatic (inferior) MI, that corresponds in most cases to obstruction of right coronary artery (RCA). From the total number of patients, we identified 9 ps (52.94%) with narrow or wide QRS tachyarrhythmia.

**Discussion:** The main questions in our study were:

1. Increased serum levels of which markers have been associated with evidence of reversible or irreversible cardiac injury (cell lesion)?
2. What major coronary artery is frequently involved in AMI, in our region?

It has been demonstrated that testing for troponins initially on admission and repeatedly after 6 or 12 hours provides better risk stratification than preciously used algorithms based on ECG, CK-MB. Elevated levels of CK-MB, LDG and MYO denote a cardiac injury.

In our cases they were associated with negative troponine results, which emphasize the reversible cardiac injury. Correlated with ECG data, which determine ST elevation lead V1-V4 (52.94%), infer damage of LAD artery.

**Conclusion:** Study data estimate implying of LAD in the coronary artery pathology (58.82% cases of extended anterior MI), in condition of functionally compromised heart (52.94% of arrhythmias).

Biomarkers values ranking shows the degree of cardiac injury. At the same time they allow the prognosis of the survival chances of patients with AMI.

**Keywords:** TnI, CK-MB, LDG, AMI, LAD, RCA, CX.

## THE INFLUENCE OF TRIMETAZIDINE ON THE TREATMENT OF COPD ASSOCIATED WITH ISCHEMIC CORONARY ARTERY DISEASE

**Condaruc Natalia**

*Academic adviser:* Butorov Valentina, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** COPD associated with ischemic cardiopathy is not only a medical problem, but also a socio-economical one; its treatment still remains a current direction in contemporary medicine. The frequency of associated pathology is increasing and tends to affect younger people, of working age.

**Aim:** To study the clinical efficacy of myocardial cytoprotector - trimetazidine (Preductal MB, France) and its use in the complex treatment of patients with COPD associated with ischemic cardiopathy.

**Objectives:** 1. To study the influence of trimetazidine on clinical and paraclinical evolution of patients with COPD associated with ischemic cardiopathy. 2. Estimate the tolerance degree of trimetazidine in patients with COPD associated with ischemic cardiopathy.

Material and methods: The study included 52 patients with II degree COPD, associated with ischemic cardiopathy (mean age 58,2±2,2 years) wich were divided into 2 similar groups. The basic group (n=26) received basic therapy combined with trimetazidine (70 mg/day), the control group (n=26) - only basic therapy. Diagnosis of COPD was set based on the GOLD criteria (2006) and the diagnosis of ischemic cardiopathy on the criteria developed by the Romanian Society of Cardiology (2004). The patients were investigated by ECG, Hollter, echocardiography, spirography, POL indexes: malonic dialdehyde (MDA), superoxide dismutase (SOD) and catalase.

**Results:** Following the administration of combined therapy with trimetazidine it was found a significant decrease in the frequency of ischemic episodes by 33,6% ($p < 0,05$) and in the frequency of dysrhythmias by 30,7% ($p<0,05$), while in the control group positive evolution was not statistically significant. It was determined a significant reduction of MDA by 1,85 ($p<0,05$), with the increase in SOD activity by 2,6 ($p<0,05$) and catalase by 1,5 ($p<0,05$), in the control group also being determined a positive, but insignificant, increase. It was determined the improvement of myocardial contractibility, the ejection fraction increasing by 11,8% ($p<0.05$), while in the control group the increase was insignificant. Respiratory function indexes in both groups improved, but there were no significant differences ($p>0,1$). During the study, the drug showed a good tolerance.

**Conclusion:** Trimetazidine has a pronounced anti-ischemic, antiarrhythmic and antihypoxanth effect. The obtained results allow us to recommend the combined therapy with trimetazidine in the treatment of patients with COPD associated with ischemic cardiopathy.

**Key words**: COPD, ischemic cardiopathy, trimetazidine, oxidative lipid peroxidation, ischemia, arrhythmias.

## CARDIOVASCULAR RISK ESTIMATION IN PATIENTS WITH INTRACLINIC ATHEROSCLEROSIS

**Dragan Ion**

*Academic adviser:* Caproş Natalia, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Cardiovascular diseases are currently the leading cause of death in industrialized countries and are expected to become so in emerging countries by 2020. Among these, coronary artery disease (CAD) is the most prevalent manifestation and is associated with high mortality and morbidity. Quantitative assessment of risk is useful for clinical decision making. Several scores have been developed to estimate ischaemic and bleeding risks, with different outcomes and time frames (GRACE, TIMI, Duke).

**Objectives:** Cardiovascular risk assessment in patients with unstable angina pectoris and their stratification for the appropriate management election.

**Materials and methods:** The study was made in the period of december 2010 - april 2011 and included 80 patients with the diagnostic of unstable angina pectoris based on the clinical, electrocardiographic and echocardiographic evaluation. There have been assessed anginal syndromes, factors for cardiovascular risk, hemodynamic parameters at hospital admission, the results of the laboratory investigation. Duke score was calculated by the equation: Score = feature of angina x (1 + frequency of angina outbreaks/24h) + ST/T abnormalities. Depending on the total points, the risk was stratified in 3 groups: low, moderate, high.

**Results:** The mean age of the patients included in the study was 60,72±0,89 years. Most of the patients showed angina pain at the admission. Clinical signs were dyspnoea (93,75%), palpitations (63,75%), presyncope. At the admission, 68,75% of the patients showed high blood pressure. Crucial risk factors were: arterial hypertension (91,25%), overweight/obesity (91,25%), dyslipidemia (38,75%), diabetes mellitus (28,75%). Echocardiographic atherosclerotic changes of aorta and valves were registered in 98,75% of cases. The assessment of Duke score has been established that 2,5% of the patients had low cardiovascular risk, 23,75% - moderate and 73,75% - high risk that correlates with a death rate of over 2% in one year.

Patients with high risk were older, they required a longer hospitalization, they had higher blood pressure values and showed more pronounced changes in the lipid metabolism.

**Conclusions:** Most of the patients with unstable angina pectoris have a high risk of cardiovascular events, which correlates with a death rate over 2% per year. Assessment of cardiovascular risk allows choosing of an adequate treatment (drug therapy or revascularization) which would increase the survival rate.

**Keywords:** atherosclerosis, cardiovascular risk, angina pectoris, Duke score.

## THE ATRIAL NATRIURETIC PROPEPTIDE PLASMA LEVELS IN PATIENTS WITH NONVIRAL LIVER CIRRHOSIS OF DIFFERENT AGE

**Prysyazhnyuk Vasyl, Prysyazhnyuk Iryna**

*Academic adviser:* Voloshyn Alexander, M.D., Ph.D., Professor, Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction:** Atrial natriuretic propeptide (proANP) is one of the most reliable markers of heart failure and independent predictor of cardiovascular risk in cardiac patients. The role of this cytokine in the development of hepatologic diseases is less investigated.

**The aim:** Our study purpose was to study possible age-related features of proANP plasma content in patients with nonviral liver cirrhosis and its relationship with biochemical blood parameters.

**Materials and Methods:** Our study involved 48 patients with nonviral liver cirrhosis. All the patients were divided according to age: first group (30–44 years) included 14 patients, second group (45–59 years) – 18 patients, third group (60–74 years) – 16 patients. Control group consists of 8 healthy volunteers. ProANP plasma content together with plasma activities of aspartataminotranspherase (AST), alaninaminotranspherase, total laktatdehydrogenase (LDH), alkaline phosphatase, gammaglutamiltranspherase and plasma contents of glucose, cholesterol, tryglycerides, urea, creatinine, bilirubin and albumin were studied.

**Results:** ProANP plasma concentration was significantly higher in patients with liver cirrhosis of all age groups compared with the healthy individuals. In the first group it was 1,51±0,20 nmoll/l, in the second group – 1,56±0,22 nmoll/l, in the third group – 1,85±0,37 nmoll/l, while the control levels were 0,31±0,04 nmoll/liter. There was also a trend towards a gradual increase of the proANP blood level with age. For patients with liver cirrhosis established a direct correlation between the plasma content of proANP and urea, creatinine concentrations, AST and total LDH activities.

**Conclusions:** The plasma content of proANP increases in patients with liver cirrhosis of all ages. This increase correlates with the activity and severity of liver cirrhosis and is the highest in older patients with decompensated liver cirrhosis.

**Key words:** liver cirrhosis, atrial natriuretic propeptide.

## EVALUATION OF OSTEOARTHRITIS DURATION ON THE BONE MINERAL DENSITY

**Gusak S., Yatsushun Kh., Bodnar R., Lepyavko A., Slaba U.**

*Academic adviser:* Smiyan S., M.D., Ph.D., Ternopol Medical University "I. Ya. Gorbachevsky", Ternopol, Ukraine

**Introduction**: Among the rheumatic diseases osteoarthritis ranks first in the world and is the second spread ailment after ischemic heart disease and cerebrovascular disease in Europe (Kovalenko V. M., 2009). The gradual development of osteoporosis and its invisible clinical signs lead to disease progression and severe consequences. Involutive and pathological changes in cartilage and bone tissue lead to the development of osteoarthritis and osteoporosis which are interconnected, inter-processes and progress with age and are parallel.

**Aims:** The purpose of the work was to stress the impact of osteoarthritis duration on the bone mineral density. To achieve this goal, we examined 87 patients with primary osteoarthritis (OA), aged from 35 to 76 year (57,28 ± 2,2 year), where women predominate.

results. The average duration of osteoarthritis was (7,56 ± 1,02 year). Osteopenic syndrome was diagnosed in 41,38% (n = 36) patients, among which 11 patients were diagnosed with primary osteoporosis.

**Results:** Study of osteoarthritis disease duration influences basic densitometric parameters of the bone showing reliable differences between groups of patients with disease duration below 5 years and over 10 years.

Bone mineral density decreases consequently with increasing of osteoarthritis disease duration, in the group with duration of OA over 10 years it is (0, 826 ± 0,04) g/cm2, which is 14, 32% less than in the group with duration of disease below 5 years and by 10, 02% less than in the group with disease duration from 5 to 10 years.

Indicator Young - Adult was less in patients with disease duration more than 10 years - (70,33 ± 3,38)%, which is 13, 30% less than in patients with disease duration below 5 years and 7.43% percent less than in patients with disease duration from 5 to 10 years.

The percentage patient's BMD deviation from the average population rate is the lowest in patients with a osteoarthritis duration more than 10 years and is (75,67 ± 4,98%), which is 13, 58% less than in the group with duration of the disease of «1 - 5 years» and by 11, 37% less than in the group with the duration of disease of «5 -10 years.»

**Conclusion:** Summarizing we can say that the degree of bone demineralization increases consequently with duration of OA disease.

## TEST-RETEST RELIABILITY OF PATIENTS GLOBAL ASSESSMENT, PHYSICIAN GLOBAL ASSESSMENT AND WOMAC INDEX IN KNEE OSTEOARTHRITIS

**Salaru Virginia, Mazur-Nicorici Lucia**

*Academic adviser:* Mazur Minodora, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In osteoarthritis pain and physical function are the main outcome measures, and self-report questionnaires are the preferent assessment method. This is evidence suggesting that self-reports of physical function represents what people experience while performing activities rather than their ability to perform activities.

**Objective:** To study reliability characteristics for global assessments and compared test reliability of both PGA, MDGA vs. WOMAC in knee osteoarthritis.

**Methods**: Patients that were at least 40 years old and had experienced clinical symptoms of OA in the knee at least 3 months before inclusion into study were eligible for inclusion in this trial. All patients were required to fulfill the American College of Rheumatology classification criteria for OA in the knee. The

Patient Global Assessment (PGA) asked a patient to rate on the scale how they feel overall. The Physician Global Assessment (MDGA) is a similar item completed by the assessing physician. Both these measures were incorporated into other indices. To assess patient pain we used the Western Ontario and McMaster Universities Index; The WOMAC contains five pain, two stiffness, and 17 physical function items, and is available in five-point Likert (LK) and 100-mm visual analogue (VA).

**Results:** We examined 53 patients with OA of 50 years old. Patients completed the PGA, visual analog scale for pain (VAS Pain), VAS Fatigue, VAS Sleep and PGA. Physicians completed the MDGA at the time of the patient's appointment day. Test results were assessed using interclass correlations (ICC). "Substantial" reliability was between 0.69-0.79 and "almost perfect" > 0.80. As endpoint, physical function and the patient's global assessment were evaluated at baseline and at the 8 week. The Western Ontario and McMaster Universities (WOMAC) Osteoarthritis Index was used to assess physical function and pain. This study was conducted according to the principles of the Declaration of Helsinki (1996) and good clinical practice.

In the study participated three rheumatologists and 53 patients. Test reliability was 0.702 for PGA, 0.961 for MDGA, and 0.897 for WOMAC; VAS results were 0.742 for Pain, 0.741 for Fatigue, and 0.800 for Sleep. The correlation between PGA and MDGA was -0.172. The WOMAC measured pain in 50%, stiffness in 42.7% and physical function in 53.9%.

**Conclusion:** The patients with osteoarthritis had relatively low physical function and knee pain. The Patient Global Assessment, Physician Global Assessment, WOMAC index, and VAS Pain, VAS Fatigue, and VAS Sleep all showed good to excellent test-retest reliability in OA after hospitalization. MDGA was more reliable than PGA. The correlation between PGA and MDGA was low.

**Key words:** Osteoarthritis, WOMAC, PGA.

## REVIEW OF ACTUAL TREATMENT OF RHEUMATOID ARTHRITIS IN MOLDOVA

**Moisei Cristina**

*Academic adviser:* Cerlat Sergiu, M.D., University Assistant , State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Rheumatoid Arthritis (RA) is an autoimmune disease that affects about 21 million people worldwide (0.6-1.3%). In Moldova, RA prevalence is of 1% among adult population, meaning 35000 cases. Untreated it leads to joint destruction with following deformity and disability. In the last 25 years, a better understanding of RA immunopathogenesis, along with expanding technology, has led to significant advances in drug development. Beginning with the wider use of methotrexate in rheumatology in the 1980's, improved disease management has resulted in improved functional outcomes, decreased need for surgical intervention and growing use of disease-modifying antirheumatic drug (DMARD). The next great advance began in 1998 with the introduction of biologic agents targeting the pro-inflammatory cytokines, which have enabled the application of an ethiopathogenic therapy.

**Objectives and Purpose:** Our study aimed the reviewing of medication evidence currently used in RA patients from Moldova and detecting the percentage of patients treated with biologics.

**Materials and methods:** Data were extracted from 40 files of RA patients treated in the Rheumatology unit of the Clinical Hospital "Sfînta Treime", Chisinau city in the period January-July 2011.

**Results:** From 40 files of RA patients, 6 (15%) were men and 34 (85%) were women (male to female ratio 1:5). The mean age was 52.85 years, ranging from 20 to 75 years; 82.5% of patients were aged 45-70

years. Disease duration ranged from 1 to 25 years, with a mean of 8.22 years. 82.5% of patients had seropositive RA; 35% had chronic and 60% progressive disease, while 5% patients had early arthritis. 77.5% of cases had grade III disease activity and 67.5% had grade III functional impairment.

100% of patients administered NSAIDs (diclofenac, nimesulide); various SAIDs (prednisolon, methylprednisolon, dexamethasone) are used in proportion of 92.5% from total number. As to DMARD therapy – 77.5% patients administered methotrexate (7.5-10mg weekly); 20% of patients use either used sulfasalazine (1-2g/24h) in the past and 5% use leflunomide 20mg. 1 (2,5%) patient administered rituximab and 5 (12.5%) – tocilizumab.

**Conclusions:** The main DMARD therapy was the internationally accepted gold standard, methotrexate, while a significant number of patients used sulfasalazine and 5% presently use leflunomide (the second largely accepted DMARD for the treatment of Rheumatoid Arthritis). Although the majority of the patients had severe disease, biological agents were used in small proportions, only 1 patient administered rituximab (anti CD20 therapy) and 5 (12.5%) - tocilizumab (IL6 inhibitor). The main limitation to this restricted use is the cost of the therapy, i.e the yearly cost of methotrexate for the insured patient is of 1200 MDL, leflunomide therapy costs around 20000 MDL, sulfasalazine is 100% covered by the insurance, while rituximab costs 104000 MDL and tocilizumab therapy varies 96-192000 MDL per 1 course.

**Key words**: DMARD therapy, Rheumatoid Arthritis.

## CARDIAC ARRHYTMIAS AND ACUTE MYOCARDITIS IN CHILDREN – CLINICAL AND ELECTROCARDIOGRAPHICAL STUDY

**Poiană Ina, Foca Eugenia, Iaconi Diana**

*Academic adviser:* Stamati Adela, M.D., Ph.D. Associated Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

Introduction: The diagnosis of acute myocarditis (MA) is complicated due to various clinical manifestations - from asymptomatic supraventricular arrhythmias to severe heart failure. The diagnosis of MA should be based on anamnesis data, physical examination, laboratory investigation results (specific serological markers), noninvasive instrumental methods (EKG, EcoCG), and, if necessary, invasive methotds (endomyocardial biopsy).

**Aim:** Assessing the proportion and types of arrhythmias in children with acute myocarditis.

**Objectives:**

- to analyze the clinical and paraclinical features of MA in children.
- to assess and analyze arrhythmias on standard EKG in children with MA.
- to estimate the importance of Holter monitoring in establishing the primary diagnosis of arrhythmias associated with MA.

Material and methods: The study was retrospective, analyzing the observation cards of 54 children with primary diagnosis of MA, treated in the cardiology department ICŞDOSMşiC during the years 2009 - 2010, of whom were selected 25 children with rhythm disorders. Patients underwent clinical examination, biochemical analysis and instrumental investigations (EKG, EcoCG mode M, B, Doppler) for the establishment of the clinical diagnosis.

**Results:** The study included 9 girls and 16 boys, with an average age of 8,3 ± 5,67 years. Anamnestic data revealed in 17 (68%) children a prodrome of a viral infection. About 80% of children had clinical signs of cardiac and respiratory disorders. At admission, 20 (80%) children presented signs of

heart failure associated with rhythm disorders. Standard EKG showed: supraventricular extrasystoles in 5 (20,83%) cases, ventricular extrasystoles in 3 (12,5%) cases, extra-junctional extrasystoles in 2 (8,33%) cases, atrio-vetricular dissociation in 2 (8,33%) cases, sinus tachycardia in 2 (8,33%) cases, repolarization process disorders in 2 (8,33%) cases, idioventricular rhythm in 1 (4,16%) case. Holter monitoring has allowed the tracking of the following transitory and concealed arrhythmias: sinus rhythm with shift to atrial rhythm in 2 (25%) patients, sinus tachycardia in 4 (50%) patients, supraventricular extrasystoles in 6 (75%) patients, ventricular extrasystoles in 5 (62,5%) and a case of ventricular tachycardia (12,5%).

Conclusions: Of the total number of 54 children with MA, 25 (46,3%) had various isolated and combined arrhythmias and 17 (68%) children had a history of a viral prodrome. The most common arrhythmias revealed with standard EKG were associated with a I-II degree heart failure in 8 (40%) children, of whom 3 with sinus tachycardia, 2 with supraventricular extrasystoles, and 1 child with ventricular extrasystole. Holter monitoring allowed to determine arrhythmias undetected by EKG at rest, including 6 (11,1%) cases of arrhythmias with an increased sudden death risk.

**Key-words:** myocarditis, arrhythmias, Holter-monitoring.

## FEATURES OF INFECTIVE ENDOCARDITIS WITH EMBOLIC COMPLICATIONS

**Curudimov Mihail, Curudimov Efimia**

*Academic adviser:* Grib Liviu, M.D., Ph.D., Professor, Grejdieru Alexandra, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Infective Endocarditis (IE) is a severe disease with in-hospital mortality up to 20%, mostly due to embolic complications that increase the risk of death about 3 times. The incidence of cerebral embolism is 17-20% of all patients with IE, while non-cerebral embolism incidence is about 23-27%, both being probably underestimated because of the silent clinical evolution.

**Methods:** Retrospective survey of 94 adults with definite IE admitted in 3 hospitals from November 2008 through January 2012.

**Results:** The average age of the patients was 51,8±0,6 years, including 62% men and 38% women.

In our survey 16 (17%) of patients developed embolic episodes, of which cerebral embolism 6.4%, pulmonary embolism 4.3%, kidney embolism 3.2%, splenic embolism 3.2%, retinal embolism 2.1%, extremities embolism 2.1% and cardiac embolism 1.1%. There is a relatively small percentage of cerebral embolism (6,4%) compared with data reported in literature.

Embolism detected in one organ had a higher rate of 81.3% (n=16) compared to embolization of two organs 18.8%. *Staphylococcus aureus* was more commonly detected 12,5% in patients with embolic episodes (n=16) vs. those without embolic complications – 3,8% (n=78).

In patients with IE and embolic complications transthoracic echocardiography revealed vegetations in 13 (81,3%) versus 49 (62,8%) in those without embolism. In both groups aortic and mitral valve were more commonly affected, but in patients with IE and embolic conditions mobile vegetations were 1,8 times more frequently (50%) than in patients without embolism (28,2%). Also large vegetations (>20 mm) were observed by 2,5 times more frequently in patients with embolism than in those without embolic complications (12.5% vs. 5.1%).

**Conclusions:**

1.Patients with IE complicated by embolism had more frequently proven mobile valvular vegetations and *Staphylococcus aureus* infection.

2. In IE, the embolic complications are widely undiagnosed and require imaging investigations (CT, MRI, Doppler investigation) for early diagnosis, initiation of appropriate treatment and prognosis improvement in these patients.

**Key words**: Infective Endocarditis, embolic complications, vegetations.

## ASSOCIATION BETWEEN STATIN THERAPY AND IN STENT RESTENOSIS

**Grosul Iea**

*Academic adviser:* Popovici Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Restenosis after percutaneous coronary interventions (PCI) remains an unsolved clinical problem. Increasing evidence indicates the importance of inflammatory responses to vascular injury in the pathogenesis of restenosis. Several agents with anti-inflammatory action have been studied for the prevention of restenosis post-PCI, including statins. Their pleiotropic effects act favorably on disease progression. The aim of our retrospective study was to examine the association between statin therapy and occurrence of instent restenosis.

**Methods:** A total of 67 patients (mean age of 56 years, range 39-72 years, 82% men, 24% with diabetes mellitus) with coronary stents who underwent a repeated coronary angiography due to worsening of their clinical symptoms, were enrolled in the study. According to angiographic findings these patients were divided into three groups: 1st group - without instent restenosis and progression of other coronary lesions (15 patients); 2nd group – patients with instent restenosis ± progression of other coronary lesions (28 patients) and 3rd group – without instent restenosis, but with progression of other coronary lesions (24 patients).

**Results:** 47 (70%) patients were on treatment with statins and 20 (30%) patients did not receive any statins after initial PCI. The number of patients that did not receive statins in each of these three groups were the following: in 1st group – 2 (13,3%) patients; 2nd group – 10 (35,7%) patients and 3rd group – 8 (33,3%) patients. The high percentage of patients that were not receiving statins is explained by low medication compliance. In addition, there were no differences in total cholesterol (CT), LDL-choloesterol (LDL-C) and HDL-cholesterol (HDL-C) levels between these three groups, irrespective of statins treatment: 1st group – CT – 5,02 mmol/l, HDL-C – 1,23 mmol/l, LDL-C – 2,93 mmol/l; 2nd group – CT – 4,97 mmol/l, HDL-C – 1,2 mmol/l, LDL-C – 2,88 mmol/l and 3rd group – CT – 4,9 mmol/l, HDL-C – 1,21 mmol/l, LDL-C – 2,83 mmol/l.

**Conclusion:** This study suggests that statins may have a favorable effect in reducing the angiographic restenosis independent of their cholesterol-lowering effect. Statin therapy improve clinical outcome of patients after percutaneous coronary interventions and represents an independent predictor factor for restenosis.

**Key words:** percutaneous coronary intervention, instent restenosis, statins.

## EFFICACY OF LERCANIDIPINE IN HYPERTENSIVE PATIENTS WITH METABOLIC SYNDROME

**Abraş Marcel**

*Academic adviser:* Revenco Valeriu, M.D., Ph.D, Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction**: The metabolic syndrome, a constellation of abnormalities [obesity, glucose intolerance, insulin resistance, dyslipidemia (low HDL-cholesterol, high LDL-cholesterol and triglycerides], and elevated blood pressure, predicts the development of type 2 diabetes mellitus (T2D) and CV disease. One of the commonest components of metabolic syndrome is hypertension. Lercanidipine, a new dihydropyridine calcium channel blocker of the third generation is recommended in hypertensive patients, but the role in hypertensive patients with metabolic syndrome has not been established clearly yet. Its main advantage over first- and second-generation calcium channel blockers is lower incidence of adverse effects, such as reflex tachycardia and peripheral edema.

**Objectives**: The aim of this study is to assess the efficacy of lercanidipine in hypertensive patients with metabolic syndrome.

**Methods:** For this study, we consecutively enrolled 25 patients, of both sexes, aged 18–70 years, with metabolic syndrome and mild-to-moderate essential hypertension (according to the guidelines of European Society of Hypertension and European Society of Cardiology, 2007) who previously had not received antihypertensive treatment. Patients were than allocated to the lercanidipine 10 mg/day. Nonresponding patients after the initial 2 weeks were titrated up to 20 mg.

**Results**: At baseline, blood pressure (BP) was 157,7±13,4/93,6±5,3 mm Hg; after 6 weeks of treatment, BP was 128,1±1,9/79,9±0,9 mm Hg (–30,8±3,3/–13,6±1,5 mm Hg versus baseline, $p<0,0001$). Most frequent side effects were headache (10%), flushes (8%), palpitations (4%) and lower limbs oedema (2%).

**In conclusion**: In our study we observed that lercanidipine was effective and well-tolerated in patients with metabolic syndrome and mild-to-moderate hypertension in the daily practice. **Keywords**: Metabolic syndrome; hypertension; dihydropyridines; lercanidipine; tolerability

## CORRELATION BETWEEN CIRCULATING IMMUNE COMPLEXES AND EXPRESSION OF EXTRACARDIAC MANIFESTATIONS IN INFECTIVE ENDOCARDITIS

**Dolinţă Irina**

*Academic adviser:* Grejdieru Alexandra, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Background:** Infective Endocarditis is a serious infection of the heart endocardium, particularly the heart valves are associated with a high degree of illness and death. It generally occurs in patients with altered and abnormal heart architecture, in combination with exposure to bacteria through trauma and other potentially high-risk activities involving transient bacteremia. Endocarditis remains a devastating disease with a high mortality despite timely diagnosis and treatment.

**Objective:** to establish the correlation between circulating immune complexes and the degree of expression of extracardiac manifestations in infective endocarditis and it's utility in nowadays diagnosis.

**Patients and methods:**

To examine the role of circulating immune complexes (CIC) in infective endocarditis, we studied 51 patients with infective endocarditis (IE) for the presence of CIC, from the Institute of Cardiology from Chisinau, the Republic of Moldova. We have used ELISA method, as the elective method to identify the level of CIC. We also included in this study, the clinical examination of the patients both with normal and high levels of CIC.

**Results:** We identified 42 patients with a high-level of CIC and 9 pacients with a normal value of CIC. Among the pacients with high-level of CIC 35 (83.3% ) had subacute endocarditis (SBE), and 7 (16.7 %) had acute infective endocarditis(AIE). Systemic deposition of immune complexes results in the vasculitic lesions clasically associated with IE: so 8 (19.04%) had peripheral lesions (Osler's nodes, petechiae, splinter hemorrhages et.al), and 31 (80.96%) had severe immunological manifestations such as: glomerulonephritis, mycotic anevrysms.et.al.

**Conclusion:** These findings support the hypothesis that CIC may be important in the pathogenesis of peripheral and imunological lesions in infective endocarditis.

**Key words**: circulating immune complexes, infective endocarditis, clinical manifestations.

## THE COURSE OF CORONARY HEART DISEASE AT DIFFERENT OXYGEN SATURATION

**Osadchuk L., Gulaga O.**

*Academic adviser:* Polyanska O., M.D., Ph.D, Professor, Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction**: In industrialized countries, as well as in Ukraine, coronary heart disease (CHD) is one of the most common diseases, which ranks first place among causes of death. Equally important is the problem of chronic obstructive pulmonary diseases (COPD), which is the fourth most significant cause of death among Ukrainian population. The simultaneous presence of COPD and coronary artery disease leads to a syndrome of "mutual burden."

**Aims:** The aim of our research is to study CHD flow rate depending on the saturation of oxygen.

**Methods end results**: We examined 20 male patients aged from 47 to 72 years with coronary heart disease with postinfarction cardiosclerosis. The first group consisted of 12 patients with CHD without concomitant pulmonary disease, the second group - 8 patients with coronary heart disease with concomitant COPD. The level of oxygen saturation has been measured by pulse oximeter "UTAS oxy-201." In the first group, the average blood oxygen saturation is 97 ± 0,18, and patients of the second group - 93 ± 0,39%. Among patients of the second group the majority of men was smokers and smoked about a pack of cigarettes every day. In this group of patients has been noticed heavier disease that manifested itself in deterioration of patients, frequent instability of angina. It is known that metabolic disturbances in cardiac muscle are dependent on many factors, including: arterial blood oxygen saturation, myocardial extraction of oxygen, coronary blood flow, in the cross diameter of coronary arteries, arterial tone, presence of atherosclerotic plaque and coronary vasoconstriction. This group has found a direct correlation between oxygen saturation and such data, as hemoglobin ($r = 0,51$; $p < 0,05$) and erythrocytes ($r = 0,34$; $p < 0,05$.), which confirms the combined effect of coronary, ventilation and hemic hypoxia on the myocardium. Also, it has been revealed a tendency of sodium increase in plasma of second group patients ($r = 0,40$; $p < 0.05$), which may confirm renal dysfunction in these patients.

**Conclusion**: Reduced oxygen saturation in patients with coronary artery disease with concomitant COPD leads to increased myocardial ischemia with possible destabilization of angina.

**Key words**: angina, coronary vasoconstriction, coronary heart disease.

## GOUT AND CARDIOVASCULAR RISK: A COHORT STUDY

**Danchak Svitlana, Soliliak Oksana**

*Academic adviser:* Smiyan Svitlana, M.D., Ph.D., Professor, Ternopol State Medical University "I.Ya. Horbachevsky", Ternopol, Ukraine

**Introduction**: Gout is an inflammatory arthritis characterized by self-limiting but excruciatingly painful acute attacks. The relation of gout and hyperuricaemia in cardiovascular diseases has been well documented. It is known, that the cardiovascular disorders are the main reason of death in patients suffering from gout, and also that high blood pressure and hypercholesterolaemia are the main pathogenic mechanism of metabolic changes confounding influence on cardiovascular risk in such patients.

**Objective:** Our aim was to assess the prevalence cardiovascular risk factors in gout patients.

**Methods:** A total of 102 consecutive adult male patients aged 41-72 years diagnosed with gout between 2010 and 2012 were enrolled in the study. Hyperuricemia was defined as serum uric ≥420 mcmol/L. SCORE index was used for cardiovascular risk assessment, where low risk was defined when SCORE <1%, moderate risk was defined when 1% ≤ SCORE <5%, high risk - 5% ≤SCORE <10%, and very high when SCORE ≥10%.

**Results:** All patients aged ≤45 years had low cardiovascular risk factors which did not depend on smoking status, blood pressure and cholesterol level. These results differed from those obtained in group aged from 46 to 59 years, where moderate and high cardiovascular risk was found in equal proportion among non-smokers. In the same age group, the smokers with hypertension had high and very high cardiovascular risk. Finally, the group of patients aged ≥60 years, 56% had very high cardiovascular risk, 34% had high risk, and only non-smokers (10%) had moderate cardiovascular risk.

**Conclusions:** Gout is associated with cardiovascular risk indicators. The prevalence of hyperholesterolaemia, hypertention and smoking increases with age and should be considered in the complex management of patients suffering of gout.

**Key words:** gout, cardiovascular risk, hypertension, hyperuricaemia, hypercholesterolaemia, SCORE index.

## ARRHYTHMIAS IN RHEUMATIC HEART DISEASES PATIENTS

**Cigoreanu Ion**

*Academic adviser:* Vetrila Snejana, M.D., Ph.D, University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: In recent decades the rheumatism is decreasing. The number of patients affected by rheumatic heart disease failure in the world reaches 15.6 million, and annually are registered about 470000 new cases.The rhythm disturbance is common in these patients. The atrialfibrillation is described in medical literature as the most frequent arrhythmia in patients with mitral valve involvement. In mitral stenosis the prevalence of atrial fibrillation increases with age. It is known that the atrial fibrillation is

present in 10% of patients aged up to 30 years, while the age over 50 years its reaches till 50% cases.

**Objectives:** To analyze the characteristics of arrhythmia in rheumatic heart disease at patients hospitalized in the Institute of Cardiology from Republic of Moldova.

**Methods:** In the study where included 24 patients with defined diagnosis of rheumatic heart disease, 18 (75%) men and 6 (25%) women, median age 58 years old (range 41-75), 12 (50%) patients with mitral valve disease, 7 (29.1%) patients with aortalvalve disease, and 5 (20.8%) patients with associated involvement. We analyzed the patients' complaints, disease history, and the results of the clinical and laboratory examination, the Electrocardiography (ECG) in the resting position, transthoracicechocardiography (EcoCG), Doppler EcoCG.

**Results:** In the study group were prevailed patients from countryside-16 (66.6%) patients versus 8 (33.3%) patients from urban space. The data analysis showed that ½ (50%) of the patients suffered acute rheumatic fever in childhood (ARF). The common complaints at admission were dyspnea in 20 (83.3%) cases, peripheral edema at 15(62.5%), patients with syncope 3 (12.5%). The ECG evaluation showed the atrial fibrillation (AF) at 16 (66.6%) patients, included 7 (29.1%) with chronic atrial fibrillationform and4 (16.6%) patients hadatrial paroxysmal fibrillation. Theatrial flutter and the extrasystolies where found less 3 (12.5%) and 2 (8.3%) patientsrespectively. The conductibility disturbance certified in 9 (37.5%) patients, including left branch block5 (20.8%) patients, rightbranch block3 (12.5%) patients, and the atrio-ventricular block1 (4.16%) patient. TheEcoCG analysis confirmed the structural changes on valves: mitral valve stenosisin 8 (33.3%) patients, mitral valve regurgitation with different degrees- 4 (16.6%) patients, aortic orifice stenosis-4 (16.6%)patients, and the aortic regurgitation- 3 (12.5%) patients, the tricuspid valve regurgitation in 3 (12.5%) patients.The cardiomegaly has been found in 13 (54.1%) patients, more frequently left atrium dilatation at 9 (37.5%) patients.

**Conclusion:** The atrial fibrillation was the most frequent arrhythmias in our study group certified at 2/3 of patients, predominantly chronic form at patient with mitral valve involvement.

**Key words**: Arrhythmia, rheumatic heart disease, Electrocardiography, Echocardiography.

## PREVALENCE OF METABOLIC SYNDROME AMONG PATIENTS WITH CARDİOVASCULAR DISEASES

**Abu Sneineh Marwan Nabil**

*Academic adviser:* Shvets Liliya, M.D., Ph.D., University Assistant, Vinnitsa State Medical University "N.I. Pirogov", Vinnitsa, Ukraine

**Introduction**: According to the criteria of such organizations as World Health Organization (WHO) and the American Association of Clinical Endocrinologists (AACE) metabolic syndrome (MS) is a disease that can be defined as a complex of metabolic, hormonal and clinical disorders, which are high risk factors for cardiovascular diseases, based on primary insulin resistance and compensatory systemic hyperinsulinemia. A person with MS has a greatly increased risk of cardiovascular disease and premature death. There are 40 - 60 million people suffering from MS in Europe, according to WHO reports.

The **purpose** of this work is to investigate the prevalence of the MS among patients who suffer of different cardiovascular diseases.

**Methods and results**: At the cardiology department of Vinnytsia Pirogov Regional Clinical Hospital, 174 patients (88 women and 86 men) with MS were examined. First, all the patients filled questionnaire. Afterwards, the body mass index (BMI), waist circumference, blood pressure, heart rate, blood glucose,

total cholesterol and triglyceride (TG) levels were measured. MS was determined according to the criteria (NCEP-Mod ATP-III 2005) in the presence of abdominal obesity: waist circumference ≥ 102 cm or 40 inches (men), ≥ 88 cm or 36 inches (women); dyslipidemia (TG ≥ 1,7 mmol / L (150 mg / dL)), HDL cholesterol <1.03 mmol / L (<40 mg / dL men), 1.29 mmol / L (<50 mg / dL women) blood pressure ≥ 130/85 mm .mmHg, the level of fasting plasma glucose ≥ 5,6 mmol / L (100 mg /dL). In the presence of three or more criteria, patients can be diagnosed with MS.

**Conclusion**: Results showed that the average age of survived patients was 57,9 ± 12,1 years, and the average BMI of the patients was 30,9 ± 6,8 kg/m2, thus only 15% of the patients had normal BMI. The remaining patients suffered from overweight or obesity. In addition, the waist circumference in 59% of men and 95% of women was more than 102 cm and 88 cm respectively.

The average systolic BP was 144 mm Hg, and diastolic – 89 mm Hg, average heart rate - 73 beats per minute. Besides, in the blood of the patients were detected following changes: 17 % had fasting hyperglycemia, while 70% and 33 % had high levels of cholesterol and TG correspondently. All in all, 48% of the examined patients were found to have MS (58% of females, 42% of males).

According to the results above alongside with external information and other researches in this sphere, it is obvious that patients with MS have a rather poor prognosis and high risk of cardiovascular complications and diseases.

**Key words**: metabolic syndrome, prevalence, abdominal obesity, hypertension, risk of cardiovascular complications.

## CHANGES OF LIPID SPECTRUM IN HYPOTHYROID PATIENTS

**Condru Valentina, Alexa Zinaida**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Statistical data confirm a continuous growth of the incidence and morbidity of the pathology of thyroid gland, both at the international and national levels. The thyroid hormones play an important role in the regulation of physiological and metabolic processes. Their deficiency has a negative impact on the lipid spectrum. Hypothyroidism is considered to be the main cause of secondary dyslipidemia.

**Aim:** Evaluation of the changes of lipid spectrum in hypothyroid patients.

**Materials and Methods:** The study was conducted on 113 patients with primary hypothyroidism with TSH>4,05 mlU/l. The evaluation of lipid spectrum indices was performed in the morning after a 12-h fast through blood biochemical test. Plasma levels of total cholesterol, triglyceride, HDL-chol, LDL-chol were studied. Moreover, the statistical correlation analysis between thyroid hormone levels and metabolic indices was assessed.

**Results:** The execution of biochemical examination determined the following average values: cholesterol 6,90±2,05 mmol/l, triglyceride 2,1±1,38 mmol/l, LDL-cholesterol 5,36±1,65 mmol/l. The average value of HDL-cholesterol was 1,31±0,41 mmol/l. The correlation analysis highlights a statistically significant inverse linear correlation between $T_3$ and $T_4$ and cholesterol levels, and a statistically significant direct linear correlation between TSH and cholesterol.

**Conclusions:** Hypothyroidism is associated with: hypercholesterolemia, hypertriglyceridemia, hyperlipoproteinemia LDL fraction, HDL-cholesterol remains unaltered.

Along with the decrease of T3 and T4 levels and the increase of TSH, the cholesterol indices rise.

**Key words:** hypothyroidism, thyroid hormone, lipid metabolism.

## THE STUDY OF ANTITUBERCULOSIS ACTIVITY OF NEW SYNTHESIZED COMPOUDS OF TIOUREIDE ACID-2-( 2 – PHENILETIL)- BENZOIC

**Stratan Ecaterina**

*Academic adviser:* Laurențiu Morusciag, M.D., Ph.D., Associate Professor, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania; Cotelea Tamara, M.D, Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", CruduValeriu, M.D, Ph.D., Associate Professor, Phthisiopneumology Institute, Chisinau, Republic of Moldova

**Introduction**: Tuberculosis still remains the major danger for people's health in most of the countries. The treatment of this illness hasn't had the expected results. It's the best way to stop the spread of the infection. The main reason of this defficiency is drug resistance and often multidrug resistance of Mycobacterium tuberculosis to anti-tuberculosis drugs used in therapy. The study of new substances with anti-tuberculosis activity and elaboration of new effective remedies could increaese the range of anti-tuberculosis medicines.

**Aims:** The synthesized compounds to benzoic acid thioureides are of great scientific and practical interest to elaborate the new effective drugs. The aim of this study was to determine the anti-tuberculosis activity of synthesized to benzoic acid thioureides compounds.

**Methods and results:** Using the reference strain H37R of M.tuberculosis isolated from TB patients there was made a study of invitro antituberculosis activity of N- (2-fenetilbenzoil) -N- (3.5diclorfenil) - thioureiaina number of substances of class thioureidesacid2 -(2'-fenetil)- benzoic acid by determining the minimum inhibitory concentration (MIC). Activity above the minimum inhibitory substance was studied in the liquid medium (Middlebrook 7H9) and solid (Lowenstein-Jensen). To study the MIC of the substance were used 0.2 ml suspensions H37R and wild strains of a turbidity 5CFU at each concentration of the substance: 200 mg/ml, 50 mg/ml, 30mg/ml, 10mg/ml, 7mg/mland 4mg/ml. The MICof of the substance synthesized N-(2-fenetilbenzoil)-N-(3.5diclorfenil)-thioureia was established on 10mg/ml.

**Key words:** invitro, anti-tuberculosis drugs.

## INFLUENCE OF PLATELETS RICH PLASMA (PRP) ON THE REGENERATION OF SKIN CONDITIONS ALLERGIC DERMATITIS

**Kuleshova A., Maznichenko I., Pokara Y., Kiro L.**

*Academic adviser:* Holodkova Elena, M.D., Ph.D., Professor, Odessa National Medical University, Odessa, Ukraine

**Introduction:** Modern approach to the problem of skin diseases characterized by the influence on the regeneration of tissues at the cellular level, leading to restoration of structure and function of the body as a whole.

**Aim**: to examine the effects of PRP on regenerative properties of skin conditions allergic dermatitis.

**Materials and methods**: Experiments were performed on female mice ICR, aged 3-4 months. PRP received by treating peripheral blood Machinery Smart Prep (Harvester Corp.). Animals were divided into two groups. The first group in plot area for 10 days rubbed potassium dichromate, then locally, intradermal injected into the affected area PRP dose of 0.1 ml twice at intervals of 7 days. The second group of animals rubbed dichromate of potassium, during the same periodand then watched the self-healing skin. Animal deduced from the experiment on the 17th, 31st and 45th day. Conducted pathologic study involved skin using different methods of coloring material.

**Results**: Macroscopically, visible damages to skin were not observed at the animals of the first group. The skin was covered with hair. In the morphological study of the skin revealed the preservation of its layer structure, satisfactory vascularization of the zone lesions, expressed basal layer, the structure of hair is not changed. Macroscopically, the skin of the animals from the second group was thin, with varying degrees of proliferation of connective tissue. Microscopically we detected acanthosis, small spongiosis, without bubbles, leukocyte infiltration of various degrees of severity, extension of epidermal outgrowths, areas of parakeratosis and phenomenon of acantholysis. Blood vessels had a small caliber.

**Conclusions:** PRP promotes high quality and rapid reparative regeneration of skin, which helps preserve the morphological properties of tissue. The positive effect correction caused by several factors (cytokines and other biologically active substances), which enhance chemotaxis and proliferation of cellular elements in the lesion focus, and participate in the processes of adaptation.

## CHARACTERISTICS OF DRUG RESISTANT TUBERCULOSIS IN CHILDREN

**Zamornea Ala**

*Academic adviser:* Kulcițkaia Stela, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Drug-resistant (DR) Mycobacterium tuberculosis (TB) infection represents a serious and growing problem. One of the greatest clinical challenges is the diagnosis and treatment of pediatric drug-resistant TB. There is a lack of diagnostic tools adapted to children, too little information on safe, effective treatment regimens and virtually no pediatric formulations of second line TB drugs available. Pediatric TB remains difficult to diagnose microbiologically, with the result that detection of drug-resistant TB in children is an ongoing challenge. Since children diagnosed with TB predominantly represent recently acquired TB infection, they provide an important indication of drug-resistant TB prevalence and transmission within their communities. Drug-resistant TB is essentially a man-made problem, which consumes large amounts of healthcare resources.

**Purpose and objectives:** evaluation the clinical features of drug-resistant TB at children and to establish the risk factors in the development of drug-resistant TB at children, to ensure optimization of early detection and improvement of control drug-resistant TB cases in children.

**Methodology and materials:** Retrospective study about 74 cases of drug-resistant TB at children, hospitalized at the Phthisiopneumology Hospital Chisinau, Moldova, between 2006-2011.

**Results**: The most common diagnosis established was a form of secondary tuberculosis - pulmonary infiltrative TB - 47 (63.52%). Risk factors of DR TB at children are: contact with TB patients, poor living conditions, lack of chemoprophylaxis, associated diseases, non-vaccination or low-quality vaccination BCG.

The way to detect drug – resistant TB children was passive in 45 cases (60,81%), by addressing the family doctor with characteristic clinical signs of tuberculosis. By the prophylactic examination of chil-

dren with risk factors, particularly examination of contacts with TB patients, were found 29 children (39,18%). Among the children active detected, in 18 cases (24,32%) were found clinical signs present or long time, in 3 cases were even hemoptysis, but only after laboratory investigations of suspecting tuberculosis, appeared the "concern" of parents about health of children. Only 11(14,86%) children at the time of hospitalization had no acute clinical signs.

The presence in family of an adult patient with pulmonary tuberculosis were found in 65 cases (87,83%) and 39 (60%) of these were already MDR confirmed, as a consequence of transmission of resistant strains from adults. By performing the tuberculin test with 2 TU were determined hyperergical reaction at 25 (33,78%) children with drug-resistant TB, in 36 (48,65%) cases determined normergical and at 13 (17.56%) children with drug-resistant TB TST Mantoux 2 TU were «negative.»

The result of treatment in children with resistant forms of tuberculosis was always positive.

**Conclusions:** Drug-resistance in children and teenagers frequently is primary, as a consequence of transmission of resistant strains from adults. TB drug resistance at children and teenagers require special attention and immediate action, because drug-resistance has a negative impact on TB treatment efficiency. MDR TB speaks of recent transmission in the community and therefore it is a failure of TB control program.

**Key words**: Mycobacterium tuberculosis, tuberculosis, resistance to drugs, children, diagnosis.

## DETECTION OF TUBERCULOSIS IN YOUNG CHILDREN

**Ribnova N.**

*Academic adviser:* Vilc Valentina, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** About one million children develop tuberculosis (TB) annually worldwide, accounting for about 11% of all TB cases. The presence of TB in children is an important indicator of the overall status of health in a particular country. Children are highly susceptible to tuberculosis. Young children under 3 years have an immature (weak) immune system which is unable to control severe infections. A vast number of children infected remain undiagnosed – creating a reservoir of future adult disease. Diagnosis is difficult at children and often fatally delayed – early symptoms and signs of tuberculosis at children are common and easily missed. Knowledge on the factors that influences TB at children is of utmost importance to evaluate transmission in communities and to adjust TB control activities.

The main **purpose** of the present study is to establish the risk factors in the development of TB at children <3 years old, to ensure optimization of early detection methods and improvement of control activities for TB.

**Objectives:** Determining the efficiency of early detection of TB at children;

Evaluations of risk factors whitch are conductive to TB infection in children.

**Methodology and materials:** Retrospective study about all cases of primary TB at children <3 years, hospitalized in the Phthisiopneumology Hospital Chisinau, Moldova, between 2006-2010. The patients have been classified into two samples based on the principle of detection: groupI- 122 children diagnosed through active case finding (prophylaxis examinations) and group II - 47 children diagnosed through passive methodology (through addressing with symptoms characteristic to TB). The discriminator analyses have been applied to determine the risk factors that are conductive to development of TB in children.

The statistical analyses of the study results was done based on computer software applying variation analyses in specialized applications (Microsoft Excel 2002 for Windows).

**Results**: The highest share of TB has been registered in the 2 - 3 age group and it was the same for both samples (42,6 ± 6,7% vs 42,6± 7,5%, p>0,05). The structure of the clinical forms in both samples show a higher degree of presence of TB of intrathoracic lymph nodes, the share reaching higher values in sample I (1,5 times higher) (85,2 ± 4,8% vs 55,1 ± 7,6 %, p<0,001).

Advanced forms of TB with complications more often have been registered when addressing and consulting doctors in 31,9 ± 7,1%, p<0,01 compared with 8,2 ± 3,7 registered in prophylaxis examinations. A small share of children were under surveillance of phtiziopneumologists or family doctors before diagnosed with TB in 60,7 ± 6,6% in sample I and in 29,8 ± 6,9% in sample II (p<0,05), which demonstrates an inefficient work in high risk groups. As a rule, the source of infection represented the parents, either mother or father, nearly in equal proportions; rarely grandmother, grandfather or other relatives, neighbors.

The analyses showed that the highest canonic correlation of risk factors is the following: contacts with TB patients; unsatisfactory life conditions; non-appliance of chemoprophylaxis; associated diseases; irregular administration of chemoprophylaxis; incomplete families; lack of vaccination or low quality of BCG vaccination; TB death outbreaks; parents abusing alcohol.

**Conclusions:** Active TB case finding in children is predominant – 72,19%. Control of TB in children requires identification and treatment of all sources of TB among adults. To improve the early detection of TB in children it is necessary to increase the awareness at family doctors and physicians on the etiology of the diseases; conducting a more profound analysis of anamnesis data; increase knowledge on TB symptoms which can take the mask of other diseases and ensuring timely examination of risk groups.

**Keywords**: tuberculosis; children; detection; diagnosis

## COPD ASSESSMENT TEST – NEW TOOL FOR EVALUATION OF COPD

**Slutu Victoria**

*Academic adviser:* Corlateanu Alexandru, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Background:** A short, easy-to-use health status questionnaire is needed in the multidimensional assessment of chronic obstructive pulmonary disease (COPD) in routine practice. The COPD assessment test (CAT) is a short, easy-to-complete health status tool that has been developed to help patients and their clinicians assess, quantify the symptoms and impacts of COPD and enable better communication between patients and physicians about these consequences of their disease. It was demonstrated that it has good measurement properties, is sensitive to differences in state and should provide a valid, reliable measure of COPD health status.

**The aim** of this study was to detect the factors that can predict HRQL in patients with COPD.

**Methods:** Into the study were enrolled 60consecutive COPD patients. They were analyzed age, gender, anthropometric, pack years, spirometry, BODE index. Health-related quality of life was assessed by the CAT and the St. George Respiratory Questionnaire (SGRQ).

**Results:** 60 COPD patients were studied, mean age was 60.2±7.5 years, mean FEV1, % was 34.6±11.3%. Patients across all stages GOLD/ATS/ERS classification had similar age and pack/years (p>0.01). Pearson correlation coefficient analysis demonstrates in COPD patients a significant positive correlation be-

tween the CAT and the total score of the SGRQ (r=0.59, p<0.01). Also correlations between CAT and MRC score are significant (r=0.48, p<0.01). CAT score correlated negatively with 6 MWD (r = -0.52, p<0.01). The forward stepwise regression analysis shows that the age, dyspnea and oxygen saturation are important predictors of HRQL in COPD patients which explains 58% of the CAT score.

**Conclusion:** The CAT is a simple and easy-to-use questionnaire that distinguishes between patients of different degrees of COPD severity. Age, dyspnea and oxygen saturation in patients with COPD are independent risk factors for worsening of HRQL.

## ASSESSMENT OF LUNG FUNCTION AND FUNCTIONAL CAPACITY IN PATIENTS WITH LIVER CIRRHOSIS

**Corlăteanu Olga**

*Academic adviser:* Tcaciuc E., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Background:** Various changes can be detected by pulmonary function tests at patients diagnosed with chronic hepatic diseases. These changes characterize the "hepatopulmonary syndrome" result in hypoxemia and affect one-third of all patients diagnosed with cirrhosis.Hepatopulmonary syndrome is defined by liver disease, intrapulmonary vasodilatation at the capillary and pre-capillary levels, and impaired arterial oxygenation.

**The aim** of this study is to assess and compare the pulmonary function and physical capacity in patients with liver cirrhosis according to the Child-Pugh score and to correlate these variables within each group.

**Methods:** Into the study were enrolled 40 patients with liver cirrhosis. Spirometry, hemoglobin levels, dyspnea by BORG scale, exercise capacity by 6-min walking test (6MWT), blood gas analysis were evaluated. Blood gases were measured in supine and sitting positions.

**Results:** The patients were classified into three groups, according to cirrhotic severity, using Child's-Pugh classification (A - 7 patients; B – 24 patients; C - 9 patients). There were significant differences (p < 0.01, ANOVA) in FEV1 between 3 groups: there was observed a decrease of pulmonary function with progression of cirrhosis from 107 ± 13.1% in group Child's-Pugh A to 89 ± 17.4% in group Child's-Pugh C. Also there was detected a diminution of PaO2 in supine and sitting positions with progression of cirrhosis. The longest 6-min walking distance (6MWD) was 435 ± 17.8 m by group A, then group B (354.6 ± 43.4 m), and group C (310 ± 63.6 m). There was a strong negative correlation between 6MWD and Child-Pugh classification (r = -0.55, p< 0.01).

**Conclusion:** 6MWT is a useful tool for assessing physical function in chronic liver disease patients. The progress of liver disease contributes to the onset of several complications which together appear to contribute to the reduction of pulmonary function and functional capacity of patients.

## RELATIONS: ENDOGENOUS INTOXICATION SYNDROME–OXIREDOX AND NITRIC OXIDE

**Grițco Ludmila**

*Academic adviser:* Cerempei Liudmila, M.D., Ph.D., Proffesor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Key indicators in the pathogenesis of acute pancreatitis are: trypsin, chymotrypsin, elastase, kallikrein, nitric oxide.

**Purpose:** Determining the role of oxiredox system and NO in establishing endogenous intoxication syndrome in children with acute pancreatitis

**Materials andmethods:** It was done astudy in PMSISCM "V. Ignatenco" in the pediatric gastroenterology department and included 100 patients. Children were divided into the following groups: first group, healthy children-20, II-group 40 children with acute pancreatitis during the onset, third group of 30 children who received standard therapy and *BowelGuna*, and fourth group of 30 children who received standard therapy. Treatment duration was one month.

**Results and discussions:** The highest values of early HPL were recorded in studied patients from group II-16,76±0,29uc/ml($p<0,001$). Intermediate HPL-hexane, was registered at the maximum values in children with acute pancreatitis study group II who received Guna Bowel on the first day and constituted 5,27±0,15uc/ml with a return to normal limits 4,81±0,17 uc/ml a month. MDA values were observed in large amounts in children from study group II18,96±0,99uc/ml with subsequent decrease in value soverone month after treatment with Guna Bowel 17,14±0,47uc/ml. Nitric oxide was observed in study group IV patients(81,39±3,98m/l) compared with healthy children(78,7±2,85m/l). In children from study group III – obvious reduction of nitric oxide up to 74,67±6,34 m/l was revealed. In patients with acute pancreatitis, increased concentration of middle moleculesup to 22,58±1,77m/land returned to normal 14,66±0,6m/l after treatment with GunaBowel. The level of necrotic substances was determined at maximal values in study group II2,28±0,17u/c with are turn to normal after treatment with GunaBowel for 1month(1,46±0,07u/c).

**Conclusions:** 1.Endogenous intoxication syndrome in children with acute pancreatitisis characterized biologically by increasing concentration of average molecules at the onset of the disease to 22,58±1,77u/c and return to normal indices over amonth of standard treatment and inclusion in regimen after the onset of acute pancreatitis of *BowelGuna*; 2. Therefore, the realized study confirms the direct correlation between lipid peroxidation indicesHPL, DAM) and endogenous intoxication syndrome values (average molecule, necroticsubstances). Coloring directly was determined fromAAT, NOand the level ofHPL, DAM, mediamolecule, necroticsubstances, which confirms the depletion ofcompensatoryprocessesand implementation of the inflammatory process in the pancreatic gland.

## NEW IMAGISTIC METHOD FOR ASSESSMENT OF LIVER STRUCTURE IN CHILDREN

**Grițco Ludmila, Marginean Oana, Cerempei Ludmila, Bologa Ludmila, Revenco Ninel, Cerempei Emil**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova University of Medicine and Pharmacy Târgu-Mures, Romania

**Introduction:** Newly, acoustic radiation force impulse (ARFI) elastography has been introduced as a noninvasive technique for evaluating liver fibrosis.

**Matherial and methods:** The present study was carried out at the I$^{st}$ Pediatric Clinic Tg.-Mures, Romania, between 2010 September and 2011, April; it was a prospective study including a control group composed of 38 children with normal clinical and paraclinical findings related to the liver function and a lot of 96 children with different causes of hepatopathies.

In group of patients with liver damage there were 28 overweight and obese children (considered overweight whether their weight was between the 85$^{th}$ and 95$^{th}$percentilefor age and sex, and obese whether their weight exceeds 95$^{th}$ percentile, respectively), all of them with modifications to the standard abdomi-

nal ultrasound (high echogenicity, granular liver aspect, posterior attenuation suggestive for steatosis); there were 48 patients with various malignancies under or after chemotherapy, with tumor infiltration of the liver or hepatotoxicity related to cytostatic treatment and a number of 20 patients with various etiology of hepatopathy (viral hepatitis, acute toxic hepatitis, drug hepatotoxicity).Alanine transaminase(ALT, IU) was 19,56±8,67 SD in the control group, and 37,42±31,16 in the group of children with liver diseases, while aspartate transaminase (AST, IU) was 24,88±8.67 SD in the control group, and 39,92±20,12 in the group of children with liver inury.

As far as it concerns aspartate transaminase(AST, IU), in the control group it were, also, smaller levels than inthe groupofchildrenwithhepatopathies, the difference between AST mean for the two groups was, as for ALT, statistically extremely significant, with $p<0.0001$ We searched for correlations between global SVW and other determined parameters (AST and ALT) in each group, but we obtained no statisticaly significant correlations between the assesed parameters, except that between SWV and AST, only for the group of children with liver injury ($r = 0,54$ and $p = 0,01$),statistically significant.

**Conclusions:** In normal conditions (children with free liver tissue), SVW was higher for the segment VIII compared to I, statistically significant, meaning that caudate lobe is "softer", difference that does not exist in the group of liver diseases.

SWV values in group of children with hepatopathies were found to increase particularly in the segment I (caudate lobe), which shows that it is first affected by any liver injury.

**Key words:** elastography, ultrasound, liver, children.

## CHARACTERISTICS AND TREATMENT OUTCOMES OF PATIENTS WITH MDR TUBERCULOSIS

**Bobiliov Natalia**

*Academic adviser:* Iavorschi Constantin, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Multidrug-resistant (MDR) tuberculosis is a growing clinical and public-health concern. The treatment of patients with MDR- and XDR-TB is more complex, toxic and costly and less effective than treatment for other forms of TB. A better understanding of risk factors associated with poor treatment outcomes among MDR- and XDR-TB patients would be useful to provide better case management.

**Objectives:** The aim of this study was to determinate the characteristics, treatment outcomes and risk factors associated with poor treatment outcomes among patients who were treated for MDR-TB in intensive phase.

**Methodology and materials:** Retrospective study about all cases of MDR TB of patients hospitalized in the Phthisiopneumology Department of Municipal Hospital, Bălți, Moldova, between 2009-2010. Fifty patients were enrolled to the trial from June 2009 to August 2010. It was examined the group of patientsaccording tothe distributionofcasesbygenderaffiliation, age, location and living conditions, employment, harmfulhabits, associateddiseases, changesintreatment regimens, adverse effects, regimen and the influence of these factors on outcomes of treatment for MDR TB. The statistical analyses of the study results were done based on computer software specialized applications (Microsoft Excel 2007 for Windows).

**Results**: MDR TB is more common in men 84% than in women 16%, the most affected age is 19-49 - 80%, and the urban population is affected in 68% than rural 32%. According to the structure ofsocial

categories the damageoccursas follows: unemployed population 74%, the employees 12%, pensioner 4%, students 4%, disabled persons 4% and from the prison – 2%.

Associated diseases were represented by chronic toxic hepatitis 30%, cardiovascular failure 8%, viral hepatitis 8%, HIV infection 8%, after surgery 6%, encephalopathy of mixed etiology 6%, gastroduodenal ulcers 4%, and diabetes 2%. Among the studied patients 36% were new case, 64% retreatment. The harmful habits had 80%, the rest 20% were denied them. Among the harmful habits 60% were the use of alcohol, 30% – the use of tobacco, 10% - the use of narcotic substances.

The adverse effects were in 54% cases, the rest 46% tolerated well the treatment. The most frequentlyoccurring adverse effects were seizures 20%, insomnia 10%, gastroduodenaldisorders 14%, skinrash anditching each of 12%,arthralgia 10%.The most frequently adverse effects occurred in 50% of consumersof alcohol, 20% in consumers of tobacco, 10% consumers of narcotic substances and 20% in patientswho deny adverse effects.

The treatment regimen was complied in 58%, in the rest 42% it wasn't complied. The irregulartreatmentwaswidespread among 60% consumers of alcohol, 20% consumers of narcotics, 14% patients with adverse effects, 6% among others. The causes of noncompliance of treatment were drunkenness 60%, refusal to take drugs10%, absence from stationary 30%. The treatment time were: under the 6 months 10%, 6 months-68%, more than 6 months - 22%. Outcomes of treatment: 70% AFB -, 26% BK+, 4% deaths. Among BK+ there was 16% treatment failure, 10% abandonment.

**Conclusions:** Close attention needs to be paid to monitoring patients in order to ensure adherence of treatment, avoiding of harmful habits and to make an adequate changes in treatment when adverse effects occur.

**Key Words:** tuberculosis, multidrug-resistant, treatment outcome.

## PECULIARITIES OF TUBERCULOSIS IN PREGNANT WOMEN AND WOMEN DURING OF THE FIRST 3 YEARS AFTER CHILDBIRTH

**Evstratii Ecaterina**

*Academic adviser:* Vilc Valentina, M.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The problem of pulmonary tuberculosis in pregnancy has attracted the attention of doctors for many years and it is still a current issue. The disease is a significant contributor to maternal mortality and is among the three leading causes of death among women aged 15–45 years in high burden areas. The exact incidence of tuberculosis in pregnancy, though not readily available, is expected to be as high as in the general population. The clinical and laboratory diagnosis, and therapy during pregnancy and post partum period, deserve special attention. Also untreated pulmonary tuberculosis in a pregnant woman would be a definite risk for transmission of disease to the new born. Limitations in the diagnosis of tuberculosis during pregnancy, safety of antituberculosis therapy and the need for prophylaxis must be in the knowledge of all the physicians giving care to pregnant women.

**Objectives:** The aim of the study was to characterize the type and presentation of tuberculosis in pregnant women and women during of the first 3 years after childbirth. We also aimed to identify any problems and difficulties in the diagnosis and management of tuberculosis associated with pregnancy; evaluation of risk factors that lead to the development of tuberculosis in pregnant women and women during the first 3 years after childbirth

**Methodology and materials:** This retrospective study was conducted at the thePhthisiopneumology Hospital from Chisinau and Institute of Phthisiopneumology from Moldova between 2001-2010. A total of 66 women diagnosed as having pulmonary TB were included in the study. These were divided into two groups: I – 33 cases of pregnancy associated with pulmonary tuberculosis and II – 33 cases of pulmonary tuberculosis in women during of the first 3 years after childbirth. Both the groups have been compared according to age, type of disease, extent of disease. Where possible the diagnosis was confirmed by culture of *Mycobacterium tuberculosis*. Otherwise, patients were diagnosed on clinical and radiographic evidence and response to treatment.

**Results**: Has been found that most of pregnant women suffering from pulmonary TB included age between 25 - 34 years (66,7%) and women during the first 3 years after childbirth with active TB – 18 - 24 years (48,5%). Pulmonary TB was found at pregnant women more frequently in the third trimester of pregnancy – 57,6%; in group II in the first 12 months after labor – 63,7%. The common causes for a delay in diagnosis were late presentation and non-specific symptoms. TB in pregnant women were detected more frequent by active method (72,7%), in group II – in 57,6% cases, $p> 0.05$. The structure of the clinical forms in I group show a higher degree of presence Pulmonary infiltrative TB (39,4%) and Pleural TB (39,4%), in II group predominated Pulmonary infiltrative TB – 84,8%, $p<0.001$. In most cases (72,7%), TB was diagnosed on the background pregnancy. 8 women (24,2%) from I group and 16 (48,5%) women from II group had a positive contact history of TB. The majority of women delivered at term – 87,9%, 12,1% of pregnancies ended in abortion, including two for medical reasons, one initiated by the patient and one pregnancy ended in miscarriage. The main factors to development of tuberculosis among women in both groups had contact with patients with active tuberculosis and concomitant diseases.

**Conclusions:** These findings necessitate more serious thought on the issue of targeted TB screening during pregnancy, postpartum period keeping in mind the consequences of late diagnosis, the nonspecific presentation of the disease during pregnancy and the specific needs and vulnerabilities of both mother and fetus.

**Key words:** pregnancy, tuberculosis.

## CLINICAL CASES OF TRANSIENT AND INTERMITTENT COMPLETE LEFT BUNDLE BRANCH BLOCK

**Taşnic Mihail, Cozma Constantin, Costru-Taşnic Elena**

*Academic adviser:* Revenco Valeriu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** The transient complete left bundle branch block (TCLBBB) represents an important marker of myocardial ischemia. Although its low incidence, it must be distinguished from other similar forms, like: intermittent block (manifested in rest), exercise-induced transient block (block of the 3rd phase of the action potential) which appears at increased heart rate (95-126 contraction/min. in average) and transient block induced by bradycardia (block of the 4th phase of the action potential.)

The actual attitude to intraventricular blocks isn't rigid and doesn't require an obligatory association of an organic heart disease. Frequently, the coronary angiography and the ventriculography in patients with TCLBBB are normal, although there are cases with significant coronary lesions. In patients with „clean" coronary arteries we can suppose the disparity of the refractory phases of the Hiss bundle branches, the fibrosis of the cardiac conduction system in different infectious diseases. The significance and the prognosis of the intermittent block and the exercise-induced block are controversial.

According to the Framingham study, the TCLBBB appears at the same age as the permanent block, presents the same prognosis and can be associated with organic cardiac diseases. There are also numerous scientific papers supporting the absence of organic heart diseases in patients with TCLBBB.

**Purpose and objectives:** The comparative study of the intermittent block and the TCLBBB.

**Materials and methods:** We analyzed 2 cases of complete intermittent block and 2 cases of transient complete left bundle branch block.

**Results:** We observed that the TCLBBB presents the same features (dyspnea, palpitations at moderate exercise, specific ECG changes which resolves at rest). The exercise stress tests were stopped because the block appeared. The 24h ECG monitoring highlighted the appereance of TCLBBB at the heart rate (HR) higher than 65-70 beats/min and it's solving at a lower HR. In both patients the coronary circulation presents a predominant right type, without stenosis. In one patient, by the retrospective analysis of the coronary CT-perfusion, we detected a complete myocardial bridge on the lower third of the posterior interventricular branch with lower contrasting in the area under the bridge and an incomplete myocardial bridge on the middle third of the first marginal branch. The analysis of intermittent blocks also included two female patients with frequent heart palpitation and regular dyspnea at rest and little exercise. The repeated ECG showed on a background of atrial fibrillation the aparition of QRS series specific for complete blocks followed by normal QRS complexes. The 24h monitoring didn't show a correlation with the heart rate.

**Conclusions:** The transient complete left bundle branch block represents a multifactorial entity with a variable prognosis, from marker of myocardial ischemia to manifestation of increased heart rate. The differentiation of different forms of the TCLBBB can be done by 24h ECG monitoring with frequency limits specification and by coronarography to exclude myocardial ischemia.

## FREQUENCY OF PROTOZOAN AND HELMINTHIC INTESTINAL INFECTIONS IN EMERGENCY HOSPITAL FOR CHILDREN "ST. MARIA" IASI, ROMANIA

**Dumitrescu Ana-Maria, Gâlea Silvia, Maxim Irina**

*Academic adviser:* Bahnea Roxana-Gabriela, M.D., University Assistant, University of Medicine and Pharmacy "Gr. T. Popa", Iasi, Romania

**Introduction:** Intestinal parasites are an important health problem, as they affect a large number of individuals, resulting either in asymptomatic cases or in states of chronic diarrhea and malnutrition. This study had the objective of investigating the frequency of intestinal parasitic infection in children (0-16 years old) admitted in Emergency Hospital for Children "St. Mary" Iasi, Romania, as this is a pediatric tertiary care center for the Moldavia region and because there is no recent data in the literature about such investigation in this large area.

**Materials and methods**: A retrospective study was conducted using the stool microscopy results from January to December 2011 which were obtained from archived records of the Department of Parasitology of the Hospital. Intestinal parasitic infection was diagnosed by direct fresh parasitological examination of the stools. The stool samples were processed using saline and iodine mounts and examined microscopically for ova and cysts of parasites.

**Results:** Overall, female patients were more affected (58.23%). Among 1168 positive coproparasitological tests, 98.70% of patients had single parasitic infection, and 1.30% had more than two types of intestinal parasites. In double and triple parasitic infection (12 cases), there were associations be-

tween a protozoan and a helminth (66.66%), between two helminthes (25%), or a protozoan and two helminthes (8.33%).

The frequency of protozoan infection was found to be above 96%, and was represented only by *Giardia lamblia*, which affected almost equally male and female patients. There were 5 different species of helminthes in stool specimens (52 cases). *Ascaris lumbricoides* (80.76%) and *Enterobius vermicularis* (9.61%) were the most frequent among them and affected equally male and female patients. *Hymenolepis nana* (5.76%) and *Trichuris trichiura* (3.84%) correlated with female patients and *Ancylostoma duodenalis* (1.92%) affected only male patients.

**Conclusion:** Our data revealed a different pattern of intestinal parasitic distribution comparing with those reported in industrialized or developing countries. We highlight the special need to educate the community on proper personal hygiene and basic sanitation measures to reduce health problems caused by intestinal parasites.

**Key words**: intestinal parasites, coproparasitological tests, Giardia lamblia.

## THE CLOSEST RESULTS OF CORONARY SHUNTING OPERATION ON WORKING HEART WITH ARTIFICIAL BLOOD CIRCULATION

**Enginoev S.**

*Academic adviser*: Kondratyev D., M.D., Ph.D., Professor, Astrakhan State Medical Academy, Astrakhan, Russian Federation

**Purpose:** the comparative analysis of efficiency of operations of coronary shunting on working heart with artificial blood circulation.

**Material and methods:** The analysis of results of 2254 operations of coronary shunting of the patients who were on treatment in the federal center it is warm – vascular surgery of Astrakhan since April 2009 till June 2011. Statistical data processing was made by means of the Microsoft Exel program.

**Results and discussion:** Coronary shunting with artificial blood circulation without a cardioplegia (CP) was executed at 874 patients (men – 648 (74 %); women – 226 (26 %)). Middle age of the patients was 56,8 years. We identified an acute myocardial infarction in the anamnesis of 638 patients. The emission fraction was less then 35 % in 122 patients. Stenocardia of the III-IV functional class was found in 716 patients. An acute coronary syndrome was met in 25 patients. Average duration of operation was 171 minutes with a time of artificial blood circulation of 73 minutes. Expenses of blood components were 45,6 ml *per* operation. Medium duration of hospitalisation after operation was 8,6 days. The hospital lethality was 7. Complications: acute perturbations of brain blood circulation-4, acute myocardial infarction-13, bleeding-7, instability of a breast-18, infection of the sternum -7. Cause of death: acute perturbations of brain blood circulation -6, acute myocardial infarction-1.

**Conclusion**: Coronary shunting with artificial blood circulation without a cardioplegia is rather safe method of treatment of coronary heart disease. Unloading of heart reduces need in oxygen of the myocardium that allows applying various ways of drainage of the anastomosis zone, and also doesn't limit the surgeon on time at the main stage in favor of improvement of quality of work. This technology can be used by the surgeon with "average" manually skills. Use of artificial blood circulation at observance of the appropriate preventive measures (intraoperation ultrasonic research of an aorta) isn't reflected in number of embol complications. This technique can be recommended for application for daily practice as for treatment of patients with stable forms of coronary heart disease, and at an acute coronary syndrome.

## TREATMENT OPTIONS IN ERYSIPELAS

**Fustei Roman**

*Academic adviser*: Streltov Liuba, M.D., University Lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Erysipelas remains a pathology training frequency, which requires continuous treatment method.

**Purpose and objectives**: the appreciation of modern tactics of treatment in erysipelas forms.

**Material and method:** this is a lot of 241 cases of erysipelas, treated in the clinic in the years 2002-2011. Women / men: 2:1.

**Results:** The distribution according to clinical appearances was: erythematous erysipelas- 129, erythemato-bullous erysipelas- 62, bullous erysipelas- 31, gangrenous erysipelas- 19. The elective location of the pathology was feet- 213 cases, in more cases in patients trophic disturbances. The erysipelas of the arms was in 17 cases, the erysipelas of the scrotum in 2 cases, the erysipelas of the mamma in 7 cases and of the heard and face in 2 cases Pathology has been commonplace in employable age 30-60 years. Concurrent disorders: diabetes mellitus-20 cases, venous pathology 33 cases, atherosclerosis gr. II – III –5 cases, cardiovascular pathology- 53cases, obesity gr. II-III –15cases, malign tumor pathology – 10 cases, mastitis – 1 case. Bacteriological test revealed the presence of Streptococcus aureus, who in 37 cases has been associated with St. Aureus, 7 cases – Klebsiela, 4 cases with E. Coli. Besides of traditional method of administration of antibiotics of penicillin and cephfalosporin groups i/m or i/v in treatment of the erysipelas, we gave the antibiotics our patients local lymphotropic and into the limph nodes in the affected place. The effect of this method is the direct action of the drug after the active forms of streptococcus, that is reproduction in the lymphatic. We revealed that after these methods of treatment the patients were discharged with 2-6 days dependent upon developmental form. Bullous-necrotic forms (54 cases) require openings and drainage, necrectomy in some cases. Local treatment: in 24 cases of necrotic masses faster has been used preparation from seaweed – Algipor. In 6 cases of massive tissue defect, we performed skin plastic treatment in the second stage. Prophylactic treatment included the administration of Thienam during the next year with a frequency one dose in three months.

**Conclusions**:

1. Erysipelas is a frequently pathology in patients with employable and in several accompanying disorder appearance in severe morphological forms.
2. Administering a treatment complex, which includes the preexisting pathology cure and erysipelas by using of method of local lymphotropic and into the lymph nodes administration of antibiotics in association with the use of Algipor in local treatment of erysipelas does the conditions for decreasing of the number of relapsing forms of erysipelas and the term of hospitalization and prevent appearance of relapses.

## THE INTRACEPTIVE DISORDERS AT PACIENTS DIAGNOSED WITH DEPRESSION

**Botezatu Victoria, Dvornic Dorin**

*Academic adviser*: Moldovanu Ion, M.D., Ph.D., Professor; Drăgan Boris, M.D., ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** neurological scientific research of depression.

**Purpose and objectives**: to determine the intraceptive disorders in pacients diagnosed with depression.

**Materials and methods**: Beck questionnaire that highlights the affective state of the subject at the time of interrogation. The Spielberger test to asses the general and momentary state. VMP-2 (Vegetative Motor Profile) – to stand out the motor and vegetative disorders caused by depression.

**Subjects**: the tests were used on 2 groups, the study group (20 patients diagnosed with depression) and the control group (392 students from the State Medical and Pharmaceutical University "Nicolae Testemitanu").

**Results**: the prevalence of depression after Beck and Spielberger equalizes to 100 %. The control group measures 49,5% of subjects with depression (using the Beck scale) and 58 % of subjects with a high level of anxiety (using the Spielberger test). From the medical point of view, there is an influence of depression on the quality of life, but without a linear correlation.

**Conclusion**: according to the performed study, a high prevalence, in patients with depression, has the next disorders: headaches, insomnia, vertigo, syncope, weight loss, anxiety, fatigue, gastrointestinal disorders.

**Keywords:** Depression, Beck, Spielberger, PVM-2, disorder.

## DYSLIPIDEMIA AND HYPERGLYCEMIA IN HYPERTENSIVE PATIENTS WITH METABOLIC SYNDROME

**Grib Andrei, Abraș Marcel, Mazur-Nicorici Lucia**

*Academic adviser*: Revenco Valeriu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Metabolic syndrome (MS) is a combination of interrelated risk factors, which include: dyslipidemia (DLP), hyperglycemia, high blood pressure, and abdominal obesity. This coexistence of metabolic disorders promotes atherosclerotic cardiovascular disease, being also a causative factor for type 2 difabetes mellitus (DM). Hypertension is one of the most common manifestations of MS, which has a high prevalence worldwide (25-35% in adults and 60-70% in people over 70 years) due to the global epidemic of DM and obesity. Another association of hypertension and MS is DLP, induced by the action of insulin on lipid metabolism, which increases very low density lipoprotein synthesis in the liver.

**Methods:** It was a retrospective study of patients from the Institute of Cardiology, the key criterion being grade I-II hypertension. Diagnosis of MS was established according to criteria proposed by NCEP/ATP III in 2005. MS was considered in patients having at least 3 of 5 criteria. DM was established according to American Diabetes Association definition in 2003.

**Results:** There were 168 hypertensive patients included of which we selected 114 patients with grade I-II hypertension divided subsequently into four groups: with MS and DM (n=32); with MS, but no DM (n=29); no MS and no DM (n=37); no MS, but with DM (n=16). Following evaluation in these groups included determination of lipid and glucose metabolism features.

Patients with MS only had significantly higher TG levels than patients with DM only (2.23±0,04 vs. 1.30±0,06 mmol/l, respectively). Similarly, values of TC and LDL-C were highest in patients with MS only (5.80±0.04 and 4.71±0.03 mmol/l, respectively). Serum levels of HDL-C had shown inverse correlations compared with TG. Calculating the atherogenic coefficient revealed that TC/HDL-C ratio is significantly higher in MS groups compared to non-MS groups, independently of the presence of DM.

Evaluation of glucose metabolism in the study group revealed that 45 (39.5%) patients were diagnosed with type 2 diabetes and 69 (60.51%) patients were nondiabetic, of which 38 (33.3%) patients with

impaired glucose homeostasis (IGH) and 31 (27.2%) patients with normal glucose regulation (NGR). Group assessment found that IGH meets in higher proportion among nondiabetic patients with MS (84.4%), than among nondiabetic patients without MS (29.7%).

**Conclusions:** Lipid metabolism disorders is more common in the group of hypertensive patients with MS, and were not altered by the presence of DM. DLP was mainly manifested by a significant reduction in HDL-C, high levels of TG, TC and LDL-C and increased TC/HDL-C ratio, which implies a more enhanced atherogenic activity in groups of patients with MS.

Glucose metabolism disorders are common in 72.8% of hypertensive patients and only 27.2% of them have normal glucose regulation. Comparison of nondiabetic groups revealed that IGH meets in higher proportion among nondiabetic patients with MS, than among nondiabetic patients without MS. Thus, hyperglycemia is highly associated with hypertension, particularly in patients with MS.

**Keywords:** Hypertension, metabolic syndrome, type 2 diabetes mellitus, DLP, hyperglycemia.

## EPLERENONE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

**Gulaga O.**

*Academic adviser*: Tashchuk V., M.D., Ph.D., Professor, Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction:** Heart failure is a frequent complication after acute myocardial infarction and has a poor prognosis. The increasing of heart failure is about 1-2% per year. 50% of patients with heart failure after acute myocardial infarction, usually, live no more than 5 years.

The **purpose** of our research was to estimate treatment efficiency in patients with myocardial infarction which is complicated by heart failure, with using of the antagonist of aldosterone eplerenone on parameters of lipid and protein peroxidation.

**Material and methods:** We have investigated 37 patients (33 men and 4 women) with acute myocardial infarction in age from 39 to 68 years. A diagnosis was made according to the standards of European organization of cardiologists. All patients were divided into two groups.

The first group included 14 patients, who were prescribed standard therapy with verospiron in the dose 25 mg/day during 10 days, the second one – 13 patients who has got standard therapy with eplerenone in the dose 25 mg/day during 10 days. Control group included 10 patients healthy volunteers. We have measured concentration of malone aldehyde and oxidative modification of proteins.

**Results:** We have found an increasing of lipid and protein peroxidation processes in both groups before treatment. The parameters of malone aldehyde and oxidative modification of proteins were significantly higher than in control group. Differences in the indices of both groups were statistically not reliable.

Standard treatment led to diminishing of peroxidation processes– the patients of the first group had decreased indices of malone aldehyde and oxidative modification of proteins, however these indices were higher than in control group. The results of the second group were more expressed.

**Conclusions**: The conducted research testify that the using of the antagonist of aldosterone eplerenone in a complex treatment of patients with acute myocardial infarction, which is complicated by heart failure, lead to decreasing of processes of lipid and protein peroxidation.

**Key words:** myocardial infarction, heart failure, eplerenone, peroxidation.

## OBSTRUCTIVE SARCOIDOSIS

**Calaraş Diana, Munteanu Oxana**

*Academic adviser*: Botnaru Victor, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Sarcoidosis is a multisystemic granulomatous disease of unknown cause, that mainly affects the lungs. Being an interstitial lung disease, it is generally accepted that sarcoidosis demonstrates mostly a restrictive pattern in pulmonary function tests. Some authors mention that sarcoidosis could show an obstructive pattern also, but to a lesser extent.

**Aim:** to assess the frequency of the obstructive and restrictive patterns in patients with pulmonary sarcoidosis using pulmonary function tests.

**Materials and methods**: We performed an analysis of 95 patient's clinical records with biopsy proven or highly suggestive of sarcoidosis, cases registered in a third level medical institution, during year 2011. All the patients underwent chest X ray and pulmonary function tests.

**Results:** Our study group consisted of 74 (77,9%) females and 21 (22,1%) males, mean age 49,5±9,0. In our group, 86 (90,5%) were non-smokers, ex-smokers - 4 (4,2%), and current smokers - 5 (5,3%). According to the radiological stages we had 25 (26,9%) subjects in stage I, 49 (52,7%) in stage II, 13 (14,0%) – stage III and stage IV – 6 (6,5%) patients. We found decreased FEV1 and decreased FEV1/FVC only in 8 (8,4%) cases, but we have also found other functional signs of obstruction, like decreased $MMEF_{25-75\%}$ in 51 (53,7%) cases, suggesting small airway obstruction; increased RV in 40 (42,1%) cases – corresponding to the air-trapping phenomenon, and increased TLC in 20 (21,3%) cases – suggesting hyperinflation.

In contrast, we found only 15 (15,7%) cases of concomitant decrease of FVC and normal or increased FEV1/FVC, suggestive of restrictive pattern, also decreased TLC in 8(8,5%) subjects, decreased RV in 4(4,3%) cases; concomitant decreased FVC, increased FEV1/FVC and decreased TLC – in 8 (8,5%) cases.

**Conclusion:** Our study showed that pulmonary sarcoidosis determines more obstructive defects than restrictive, depending on how we define obstruction.

**Key words:** sarcoidosis, obstruction, restriction, pulmonary function tests

## CORRELATIONS COMORBIDITIES ON QUALITY OF LIFE IN PATIENTS WITH COPD

**Brunchi Lucia, Butnaru Mihaela**

*Academic adviser*: Alexandru Corlăteanu, M.D., Ph.D., Senior lecturer, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Chronic Obstructive Pulmonary Disease (COPD) is characterized by limited airflow that is incompletely reversible, can progress and may be associated with an abnormal inflammatory response of lungs to irritants. COPD is a major cause of morbidity in the elderly, affecting about 15% of the population aged over 65 years.

**Material and Methods:** In the questionnaires the following indices were studied: age, 6 minutes walk test (6MWD), index smoker - pack / year, Health - related quality of life (HRQL) instruments included: Saint George's Respiratory Questionnaire (SGRQ), Clinical COPD Questionnaire (CCQ), and comorbidities evaluated by Charlson and CDS index. The study was conducted on a group of 60 patients (30 men and 30 women) aged between 50-80 years and average of 64.45 (± 8.59).

**Results:** Average data obtained from analyzing questionnaires were: 18.05 (±19.45) package /year – index smoker, 245.30 (±89.88) - 6MWD. Correlational analysis showed that there was no correlation between Charlson index 2.43 (±1.52) and 6-minute walk test p= -0.41, index smoker p= 0.04, Health – related quality of life instruments: CCQ 64.03 (±11.14), p= 0.25, SGRQ 2.86 (± 0.78), p= 0.31, as well as between CDS 4.33 (±2.52) and 6MWD p= -0.35, index smoker p= -0.01, CCQ 64.03 (±11.14), p= 0,29, SGRQ 2.86 (± 0.78), p= 0.38.

**Conclusion:** Analyzing the impact of comorbidities on quality of life, we found a significant contribution to pathologies associated quality of life in elderly patients. The results tell us that COPD patients differentiate specific allegations of complaints characteristic of other diseases and can be used as specific tools for measuring quality of life of COPD.

**Keywords:** COPD, Charlson index, CDS index.

## THE RELATIONSHIP BETWEEN BODY MASS INDEX AND HEALTH RELATED QUALITY OF LIFE IN PACIENTS WITH COPD

**Butnaru Mihaela**

*Academic adviser*: Alexandru Corlăteanu, M.D., Ph.D., Senior lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Chronic obstructive pulmonary disease (COPD) is a progressive illness, which affects public health due to its exacerbations and can reduce the life - threatening risks from a sudden flare of its symptoms. It is one of the leading cause of chronic morbidity and mortality worldwide, that's why, the assessment of the life quality is used on a large scale in clinical trials. **The aim** of the study was to analyze the influence of body mass index (BMI) on quality of life in pacients with COPD.

**Materials and methods:** 60 pacients with COPD were enrolled into the study: 30 men and 30 women, mean age was 64.45±8.5 years. The following parameters were studied: age, the spirometric data (FEV1%, FVC, FEV1%/FVC), BMI, health-related quality of life (HRQL) by Saint George's Respiratory Questionnaire (SGRQ) and Clinical COPD Questionnaire (CCQ).

**Results:** The mean FEV1 was 45.34±12.94%, the mean FVC was 55.77±17.12%; the mean FEV1/FVC was 59.03±11.71%. The mean body mass index (BMI) was 29.12± 6.89 kg/m$^2$. We detected severe deterioration of quality of life in patients by SGRQ and CCQ. The mean total score of SGRQ was 64,03±11,14; symptoms score was 78.88±12.39; activity score was 59.02±14.33; impact score was 62.24±11.09. Also CCQ demonstrated deterioration of quality of life. There were no significant correlations between HRQL and BMI.

**Conclusions:** COPD is an important cause of severe deterioration of quality of life. The correlation analysis didn't show any relationship between BMI and HRQL. Further investigation of the relationship between BMI and HRQL would be useful.

**Key words:** COPD, BMI, HRQL.

## EVALUATION OF THE CLINICAL FEATURES OF EVOLUTION OF CRONIC OBSTRUCTIVE PULMONARY DISEASE IN PATIENTS WITH ACCOMPANYING ISCHEMIC HEART DISEASE

**Vornicova Olga**

*Academic adviser*: Butorov V., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Chronic obstructive pulmonary disease (COPD) concern to one of the widespread diseases in the world. According to latest WHO official information 210 million of people suffer from COPD. According to data of different researches co-morbidity of ischemic heart disease (IHD) and COPD among aged people reaches to 62% and 15–year survival rates consists 25%.

**Materials and methods:** 50 patients were examinated and divided in 2 groups: First group includes of patients with COPD in II and III stages; Second group–patients with COPD II and III stages and IHD. During this study was used: studying of the main symptoms using diagnostic criteria, standardized questionnaire Rose for IHD diagnose, 6 minute walk test, functional examination of the respiration, pulse-oxymetria, biochemical blood analyses, system inflammation markers, electrocardiography, X-ray examination of the chest, heart USG .

**Results**: In patients with COPD in association with IHD were identified the following risk factors: smoking, diabetes, increased body mass and more pronounced clinical symptoms, also were observed disorders of lipid and carbohydrate metabolism, more significant increase in indicators of systemic inflammation. Spirographical examination revealed in patients with COPD abstractive pulmonary disorder dominates while in comorbidity mixed types of respiratory disorder dominates. By analysis of 6 min walk test results the shortest distance was overcome by patients with COPD and IHD. Data of electrocardiography shows that patients with only COPD had primarily signs of affections of right heart. In the group of patient with COPD and IHD were determined biventricular signs of affection, also more frequently were observed arrhythmias. IHD in significant part of patients with COPD progressed without symptoms, and only 45% of cases show signs of myocardial ischemia. According to the test results in patients with COPD in association with IHD pronounced remodeling process in heart was revealed. In both groups were evaluated symptoms of pulmonary hypertension with the highest levels in patients with COPD and IHD.

**Conclusions:** The presence of associated pathology aggravates the clinical evolution of COPD and the prognosis of diseases, leads to remodeling, increasing the degree of pulmonary hypertension. COPD with IHD plays an important role in the development of restrictive components of respiratory failure. Mixed disorders of respiratory function dominate in these patients. Great reduction of volume and flow indices of external respiration was observed.

**Key words**: COPD, IHD, lung function, heart remodeling, clinical evolution.

## FEATURES OF FLU COURSE IN PREGNANT WOMEN

**Enginoev S.**

*Academic adviser*: Cherenova O., M.D., Ph.D., Associate Professor, Astrakhan State Medical Academy, Astrakhan, Russian Federation

**Objectives**: to study the clinical features of the flu in pregnant women.

**Materials and methods:** Laboratory analysis of 37 pregnant women with flu.

**Results and discussions:** The age of studied women was from 17 to 33 years. Pregnancy terms: less than 12 weeks – 7 (18,9 %) cases; 13-20 weeks – 12 (32,4 %) cases (the I trimester); 21-29 weeks – 9 (24,3 %) cases (II trimester); 30-38 weeks - 10 (27,02 %) cases (III trimester). Flu at pregnant women proceeded with typical clinical manifestations. All patients presented fiever (up to 39 *C), weakness, and pain in different parts of yhe body. The sore throat was met in 35 (94,6 %) patients, cough in 36 (97,3 %), thorax pain at 5 (13,5 %) patients. The easy form of the flu was found in 33 (89,2 %); the heavy form in 4 (10,8 %) patients. In the III trimester of pregnancy flu proceeded more hard. Complications: bronchitis - 29 (78,3 %) cases, pneumonia - 5 (13,8 %) cases. The 4 pregnant women with H1N1 flu, complicated by hemorrhagic pneumonia, ended with a lethal outcome. Flu H1N1 was diagnosed in 4 patients, flu H3N2 in 4 patients and flu In in 1 patient. The average duration of hospitalisation was 5,6 days. General duration of the illness - 9,3 days.

**Conclusion:** flu in pregnant women has typical clinical manifestations. Flu H1N1 presents most hard proceeds.

## ERECTILE DYSFUNCTION-MARKER OF CARDIO-VASCULAR PATHOLOGY

**Stavila Natalia**

*Academic adviser*: Dumbraveanu Ion , M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In the last years there has been a progressive increase ED in men after 40 years, the prevalence reaching 52%. Als the incidence of CV pathology remains as up. It's mortality, represent 60% of overall mortality. If in the 70s- 80s of last century it was considered that 70-90% of ED had psychogenic substrate, presently is considered that predominant factors implicated in ED etiopathogeny there are organic ones. The most common pathogenetic factor of installing the ED is the vascular component, as sharing the same risk factors like Endothelial Dysfunction. A potential explanation why ED may serve as an early symptom of events that endanger the cardiovascular system was developed by Montorsi. According to his hypothesis "artery size" - smaller arteries, such of the penis ones, suffering earlier from obstruction induced by plaque than the largest arteries, for example, coronary arteries, so erectile dysfunction may precede a heart attack.

**Objectives:** Establishing cause-effect link between CV pathology and ED, determination of cardiogenic causes of ED in men with age after 40 years, who addressed the first time at andrologist doctor with erectile difficulties.

**Materials and methods:** Between 2008 and 2010 were examined 169 patients, which addressed primary with erectile dysfunction without undergoing treatment for another pathology previously diagnosed. For the diagnosis of ED was used IIEF questionnaire (international index oferectile function), BMI(body mass index).

Laboratory examinations included: cholesterol and its fractions, triglycerides, blood sugar. Instrumental examination included ECG, ECHO heart, Dopplerography of penile arteries.

**Results:** IIEF questionnaires showed a severe degree of ED in 24% (41men), 54% moderate severity (92 men), and mild in 22% (36) men. High BMI was detected in 103 patients 61%, and increased blood pressure in 45 (27%) patients. Elevated levels of cholesterol or its free fractions in 38 (22%) men, increased blood sugar in 29 (17%) men.

**Conclusions:**

1. There is increasing evidence suggests that erectile dysfunction is primarily avascular disease and may be a marker for cardiovascular disease, and depending on the degree of erectile dysfunction can appreciate the progression of pathology CV

2. Patients with erectile dysfunction should be carefully examined, to exclude other major disorders suffering patient which clinically not yet occurred.

3. Exclusion of risk factors and lifestyle changes can improve sexual functionand also prevent installation of early CV disease.

**Key-words:** Erectile Dysfunction(ED), Cardio-Vascular Deasise(CVD), Endothelial Dysfunction.

## CARDIAC AUTONOMIC NEUROPATHY IN DIABETES

**Macovei Cristina, Cozma Constantin**

*Academic adviser:* Alexa Zinaida, M.D., Ph.D., State Medical and Pharmaceutical University „Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Cardiovascular form of diabetic autonomic neuropathy (CDAN) is represented by sympathetic (accelerative) and/or parasympathetic (inhibitive) influence upon cardiovascular system induced by prolonged action of elevated glicemia. CDAN perturbs cotidian usual activity, decreases life quality, increases mortality level and also it occupies an imposing part of healthcare service costs[2]. According to different studies, CDAN prevalence variates between 16,8 - 25,3% in diabetes type 1 and 22,1 - 34,3% in type 2. [3]

CDAN manifestations such as decrease in effort toleration level and silent ischemia, determine an unfavourable prognosis, as a result myocardial infarction develops 50% more frequently in CDAN diabetics versus non-CDAN (Valensi J. 2001). Prolonged QTc interval, being an independent predictive factor of cardiovascular mortality, is associated with a high risk of developing malignant ventricular arrhythmias and sudden death.

Prompt diagnosis and chronic complications screening of diabetes have a positive impact upon therapeutic efficiency, life quality improvement and decrease in mortality level.

Objectives: Frequency determination of cardiovascular form of diabetic autonomic neuropathy depending on type of diabetes, its duration in concordation with clinical and paraclinical data.

**Materials and methods:** There have been examined 72 patients (18 with type 1 diabetes and 54 with type 2) through clinical (examination, inquiry) and paraclinical (Ewing tests, QTc interval, sinus rhythm variability, circadian index) methods. This patients were divided, according to diabetes duration, into 3 groups – A(0-5years), B(5-10years) and C(>10years).

**Results:** In group of patients with type 1 diabetes, CDAN incidence - 22,2% (4 pts). Group A: 6 pts., with average duration of diabetes 2,4±3,2years – there wasn't any data of CDAN. Group B: 8 pts., average duration 9,4±1,6years, signs of CDAN were determined in 2 pts (25%). In group C: 4 pts., average duration 17,5±6,2years – 2 pts (50%).

In group of patients with type 2 diabetes, CDAN incidence - 29,6% (16 pts). Group A: 17 pts., average duration 2,89±1,62years – CDAN datas in 17%. Group B: 21 pts., average duration 10,32±1,5years, CDAN in 43% cases. In group C: 16 pts., average duration 17,56±4,8years, CDAN signs in 25% cases.

Conclusions: In type 1 diabetes first signs appear after a diabetic evolution of over 5 years with subsequent incidence elevation directly proportional to diabetes duration. In type 2 diabetes CDAN mani-

festations may be present during primary diagnosis, determining an insignificant increase in incidence during evolution.

All patients with type 1 diabetes with diabetic duration over 5 years and patients with type 2 diabetes during diagnosis – require evaluation against CDAN.

Clinical manifestations of DAN may significantly affect patients life, however it continues to be frequently misdiagnosed [1]. Application of functional tests, ECG, inquiry and Holter-ECG monitoring distinguish precocious signs of CDAN much before suggestive clinical manifestations.

**Key words:** diabetic autonomic neuropathy, Ewing tests, QTc interval

# Surgical Sciences Section

## THE ADVANTAGES OF MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS (MIPO) BY ANTERIOR APPROACH IN DISTAL HUMERAL SHAFT FRACTURES

**Popa Ecaterina Diana, Balaur Angelica**

*Academic adviser:* Sîrbu Paul Dan, M.D., Lecturer, University of Medicine and Pharmacy „Gr. T. Popa", Iasi, Romania

**Introduction:** Complex distal humeral shaft fractures management is debatable due to the fact that ORIF with plates is associated with a higher morbidity while intramedullary nails do not present reliable results.

**Purpose**: to emphasize the advantages of MIPO by anterior approach in distal humeral shaft fractures.

**Material and methods:** We have operated 19 distal humeral shaft fractures (3 type 12-A, 11 type 12-B and 5 type 12-C / AO classification) using the MIPO technique imagined by Livani and Belangero, in order to avoid the problems related to the neural vascular structures of the arm and especially to the radial nerve. 5 patients were registered with traumatic radial nerve palsy. The proximal approach of 3-5 cm was realized between the biceps (medially) and deltoid muscle (laterally). The distal approach of 3-5 cm was performed by subperiosteal dissection of the lateral supracondylar ridge of the humerus, with retraction of brachioradialis and long carpal extensor muscle, as well as the radial nerve, even though unseen. A classic or a DCP plate of 4.5 mm with 10-14 holes was molded and twisted medially to adapt to the anterior face of the humeral lateral column and diaphysis, thus avoiding occlusion of the coronoid or of the olecranon fossae. The plate was inserted from distal to proximal and fixed onto the shaft with at least 2 proximal and 2 distal screws (after reestablishing the humeral axis, length and rotation). In a single case we have performed MIPO after surgical exploration of the nerve. The patient started a rehabilitation program immediately or after a short immobilization. 6 fractures in 6 patients (with arm wrestling mechanism in 3 cases) were operated by indirect reduction and biological plating, avoiding the related problems. According to AO classification, there was 1 fracture-type 12A, 2-type 12B and 3- type 12C.

**Results:** 18 fractures healed within a mean time of 9 weeks after surgery, while we have recorded a non-union in an obese female patient. There were no vascular or nerve complications, except 3 transient paresthesia for the radial nerve. All primary neurological lesions recovered within 6-8 weeks. Elbow functional results were considered excellent according to SECEC score.

**Conclusions:** The authors are promoting the advantages of this technique regarding safety and feasibility as well as plate stability which allows a fast rehabilitation. Even if it is a demanding technique, MIPO seems to be the best option for distal third humeral fractures and a viable solution for distal fractures with radial nerve palsy.

**Key words:** MIPO, anterior approach, radial nerve, subperiosteal dissection.

## RADIOLOGICAL DIAGNOSIS OF ACROMIO-CLAVICULAR INJURIES

**Tulbure Vasile**

*Academic adviser:* Filip Gornea, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** According to the literature, acromio-clavicular injuries represent a problem in the contemporary traumatology because of the possible complications. Radiological diagnosis of acromio-clavicular injuries is important for deciding upon the optimal method of treatment. In acromio-clavicular joint (ACJ) research, by routine radiography of the shoulder, small fractures certainly can not be viewed. It should be viewed simultaneously both ACJ, with a cephalic tilt image from 10° to 15°, especially in the small joint suspected fractures. As with other musculoskeletal injuries, ACJ trauma is not sufficient to perform only single plane radiography. Thus, in suspected ACJ dislocations, radiographs should be performed in an axillary lateral view of both shoulders. This image allows assessing the posterior displacement of clavicle and small fractures. Bossart reports the need of stress radiographic examination, with weights suspended from each arm of the patient.

**Material and methods:** The retrospective study was conducted on 83 patients, treated surgically in the Republican Hospital of Traumatology, department No1, between the years 2000-2011. The Rockwood´s classification (1987) and imaging examinations were performed to assess the type of ACJ trauma.

**Discussions:** The distribution of patients by gender was as follows: 79 men and 4 women. Type 3 of lesions were determined in 53 patients, type 4 for was established in 25 cases and the type 5 – in 5 cases. All patients were examined by standard antero-posterior imaging, bilaterally. Rg 10° tilt tube. In 37 cases an axial image was used. Stress radiographs, with 8 kg weights hanging arm, was performed in 3 patients. ACJ angle of 10°-20° was appreciated in 14 patients, 30°-40° - in 27 cases and 50° - in 42 patients. During the research, it was noted that the greater the acromio-clavicular angle the more advanced the degree of dislocation was. Coraco-clavicular distance exceeded the normal range by 50-60%.

**Conclusions:** In order to evaluate the acromio-clavicular injuries it is necessary to examine bilaterally ACJ, using multiple imaging modalities.

**Keywords:** acromio-clavicular injuries, acromio-clavicular joint, radiological diagnosis.

## SCHOOL SPINAL SCREENING IN MOLDOVA: FIRST STEPS

**Kusturova Anna**

*Academic adviser:* Capros Nicolae, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Scoliosis presents a great problem for orthopedists in most countries. It is widespread in children and adolescents, and ranges from 1,3-3 to 27,6% of them. Surgical treatment is carried out too late, when the deformation of the spine becomes extremely severe. The risk of surgical intervention in such cases is too high. To solve this problem, many countries develop the scoliosis screening programs. Screening for scoliosis has been practiced worldwide for many years and has provided valuable knowledge about prevalence, aetiology and the natural history of idiopathic scoliosis. School screening for scoliosis beyond its scope of early identification of spine deformities has contributed to the field of research for aetiology of idiopathic scoliosis. Early diagnosis allows for bracing that is reported to be effective by numerous outcome studies. Unfortunately, we have not such a program in the Republic of Moldova. As a

result, a lot of young patients come to our clinic with severe spine deformities which can be treated only by surgical intervention.

**Methods:** A primary orthopedic examination was performed of 1398 pupils, aged from 7 to 18: 728 girls (52,07%) and 670 boys (47,93%). The screening procedure combined the visual inspection of the trunk in 6 positions, including the Adam Forward Bending Test and the scoliometer measurement of angle of trunk rotation (ATR). Seven degrees of ATR was chosen as cut-off point for referral to radiography.

**Results:** Fifty seven (4,07%) pupils were found positive on both standing, forward bending test and scoliometer measurements > 7°. There were 41 (71,93%) girls and 16 (28,07%) boys. Fifty four (3,86%) were confirmed with spine deformity on standing radiographs, from which 39 (72,22%) girls and 15 (27,78%) boys. 2 girls and 1 boy had normal spine curvatures on X- ray examination (false positive). Individual treatment program are to be elaborated for the each patient.

**Conclusions:** School spinal screening programs are used in many countries around the world for early diagnosis of spinal deformities, they establishing this pathology at the beginning when physical exercises and brace therapy are helpful; reduces the necessity of surgical treatment. In spite of intensive development of many instrumental methods for orthopedic examination the main method is the physical one with scoliometry. We have just begun this difficult work and hope to cover the entire young population of the Republic of Moldova.

**Keywords:** spinal screening, scoliosis, orthopedic examination.

## SURGICAL TREATMENT OF THE INTRA-ARTICULAR FRACTURES OF THE DISTAL FEMUR, TYPE C (AO)

**Hîncota Dumitru**

*Academic adviser:* Croitor Gheorghe, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Distal femoral fractures occur usually in two patient populations: young people, especially young men, after high-energy trauma, and elderly persons, especially elderly women, after low-energy injuries. In the older group, most of the injuries occur after moderate trauma such as a fall on a flexed knee. In the younger group, distal femoral fractures occur after high-energy trauma. These fractures are often open, comminuted, and most probably the result of direct application of load to a flexed knee. Most are caused by vehicle accidents, including motorcycle accidents, but they can also result from industrial accidents or falls from heights. Most of these patients are younger than 35 years, with a definite male preponderance. Surprisingly, the degree of comminution in the supracondylar region is often equivalent in both these groups. However, younger patients experiencing high-energy trauma have a greater incidence of additional intra-articular disruption or segmental or more proximal shaft comminution.

**Material and methods**: During 2010-2011 in NSPCEM were treated surgically 66 patients with distal femoral fractures, 31 patients with intra-articular fractures (AO type C1-2, C2-19, C3-11); 19 were men and 12 women, aged 17-81 years. Mechanisms of injury were vehicle accidents – 19 cases, accidents at work – 2 cases, catatrauma – 1 case and, habitual trauma – 9 cases. Principles of minimally invasive osteosynthesis of distal femur were used in 1 patient, TARPO procedure – in 7 patients, retronail – in 4 cases, the Ilizarov apparatus – in 1 case, plate osteosynthesis through a lateral approach – in 19 cases. All patients were operated in supine position. Indirect reduction of the fragments (in case of minimally invasive osteosynthesis, TARPO and retronail) was performed by applying a roll under the knee, that permitted a flexion at $60^0$ and on orthopedic table, using skeletal traction system through tibial tuberosity with idling leg.

**Results**: In all cases the reduction of the articular surface (main objective) and fixation of the femoral diaphysis were achieved. In case of classic approach (19) this goal was achieved through a large incision, elevation of the vastus lateralis, ligation of the perforator vessels, soft tissue stripping, and medially placed distractors. Minimally invasive procedures (MIPO, TARPO, retronail) provide a gentler approach to soft tissues, with best results of union.

**Conclusions**: The goal of the treatment of a metaphyseal-diaphyseal fracture does not lie in obtaining of a "beautiful" postoperative radiograph; it consists of the restoration of the function of the respective limb in the shortest time. Minimally invasive techniques contest the indications in complex distal femoral fractures type C/AO, representing, in most authors' opinion, the best and preferred methods of surgical treatment.

**Keywords:** distal femur, intra-articular, TARPO, retronail.

## CALCANEAL FRACTURES: PARTICULARITY OF EPIDEMIOLOGY

**Hadirca Eduard**

*Academic adviser:* Croitor Gheorghe, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** Fractures of the calcaneus are the commonest fractures of the hindfoot which have low incidence, but frequently require complex reconstructive surgery, and cause significant longterm disability. These occur most often in young individuals, and continue to have devastating consequences for many patients.

**Purpose:** The aim of this study was to review the epidemiology of injury.

**Methods**: Data were collected from the database of National Scientific-Practical Center of Emergency Medicine, in the period between years 2009-2011. Over this period 226 patients were treated in our unit. Details about patients were retrospectively recorded, together with details of their injury and primary treatment.

**Results**: Analysing 226 care histories of the patients with calcaneus fractures it was determined that most (85,8%) were intraarticular (thalamic), 22 patients(9.7%) extrathalamic, 4 patients with combinate bilateral fractures and 6 patients without dislocations. Fractures were much commoner in males, weith a male to female ratio of 4:1 and the mean patient age was 45 years (43 in males, and 48 in females).Over three-quarters of the calcaneal fractures were isolated injuries, and 16.1% had multiplesystem injuries. Of the 226 fractures, 12 (5.3%) were open. The most common mechanism of injury was a fall from height – 92.9% of patients.Conservative treatment of calcaneal fractures was applied on 78.3% of patients.

**Conclusions:** This study is limited to a retrospective nature of data collection,and inevitably some information was not recorded in the case reports.

**Keywords**: Calcaneus, Fracture, Epidemiology.

## USE OF AMOXICILLIN FOR THE PREVENTION POSTOPERATIVE COMPLICATIONS IN EXPERIMETAL TRAUMATOLOGY

**Baytinger Andrew, Ivaneev Nikolay**

*Academic adviser*: Baytinger Vladimir, M.D., Ph.D, Professor, Siberian Medical University, Tomsk, Russia

**Introduction:** Nowaday using an antibiotic therapy in traumatology is very actual. When the healing of an open fracture is performed by using intarmedullary osteosynthesis, this includes the possibility of bacterial infection penetration. Bacteria produce a virulence-related polysaccharide exocellular slime (the glycocalyx), which preferentially adheres to the surfaces of implant. This biofilm resists antibiotic penetration and provides a degree of protection from antibodies and macrophages (A.Gristina, 1984). Often Staphylococcus spp. bacteria are the cause of osteomyelitis. To prevent the postoperative complications antibiotics of a broad spectrum: cephalosporins, aminoglycosides, clindamycin, fluoroquinolones, amoxicillin-clavulanic acid are used. Slatter, 2003). 15% amoxicillin has a broad action spectrum and has a long time of effect (48 h). The use of penicillins (amoxicillin) in rats is limited because rats are hypersensitive (anaphylaxis in repeated application) and amoxicillin can cause enterotoxemia. The aim of our research was to emphasize the opportunity of using amoxicillin in preventing the postoperative complications after intramedullary osteosynthesis.

**Methods:** Female Wistar rats (N=27) were used in the experiment. In all the cases an open fracture of tibia middle third was made. After skin incision of the internal surface of the shin an approach to tibia was performed. Then tibia was fractured in the middle third. Healing of fracture was made by using K-wire (intramedullary osteosyntesis) with different covers: steel (n=9), calcium phosphatis (n=9), hydroxyapatite (n=9). To prevent infectious complications after surgery amoxicillin 15% (15 mg/kg intramuscular) was once injected. Control of animal condition and suture condition was done daily for 35 days. Furthermore X-ray examination of the fracture zone on the $14^{th}$ and $35^{th}$ days carried out.

**Results:** There were no infectious complications in all experimental groups during the postoperative period. There were no cases of enterotoxemia. During the first week edema of the operating shin was observed. On the $8^{th}$ day after surgery all rats moved freely and stepped on the operated paw. X-ray showed absence of osteomyelitis signs on the $14^{th}$ and $35^{th}$ days after surgery.

**Conclusions:** This investigation shows that 1 injection of amoxicillin (15 mg/kg intramuscular) is advisable for the prevention of infectious postoperative complications in rats with open bone fracture. This drug is easy to be used and not expensive.

## CLINICAL AND SCINTIGRAPHIC ASSESSMENT OF THE SPHINCTER OF ODDI DYSFUNCTION IN THE PATIENTS WITH POSTCHOLECYSTOMY SYNDROME

**Balan Irina**

*Academic adviser:* Peltec Angela, M.D., Ph.D., University Assistant, State Medical and Pharmaceutical "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The standard diagnostic for sphincter of Oddi dysfunction (SOD) is manometry, a tehnically difficult, invasive test that is frequently complicated by pancreatitis. Non-invasive hepatobiliary scintigraphy in cholecystectomised patients using a complex scoring system have been promoted as sensitive and specific alternatives. Sostre *et al.* proposed a score which combines quantitative and visual criteria for interpretation of hepatobiliary scans.

**Aim:** Evaluation of different types of sphincter of Oddi dysfunction using the Scintigraphic Score

**Materials and methods:** Thirteen patients with SOD were prospectivelly enrolled. Hepatobiliary scintigraphy was performed to all patients. Normal sphincter had scores 0-4 points, while patients with SOD had values of 5-12 points. Patients were divided into 2 goups depending on the scinthigraphic score appreciated <5 or >5 points. The evaluated criteria were algic and dyspeptic syndrome, biochemical and ultrasound parameters.

**Results:** Four patients (score <5 points) caused equally (50%) pain with swelling and pressure character, evolution in accesses, located predominantly in the right upper quadrant and epigastrium with irradiation (double-duct type of SOD). In nine patients was assessed pain with pressure character, constant, located predominantly in the right upper quadrant (66.6%) with irradiation, associated with cholestatic syndrome (biliary type of SOD).

**Conclusions:** In patients with scintigraphic score > 5 points was established the biliary of sphincter of Oddi dysfunction. Hepatobiliary scintigraphy scored may become the noninvasive test of choice to screen postcholecystectomy patients with suspected sphincter of Oddi dysfunction.

**Keywords:** postcholecystectomy syndrome, sphincter of Oddi dysfunction, scintigraphic score.

## DIFFICULTIES IN IDENTIFICATION OF TRAUMATIC DIAPHRAGMATIC INJURIES

**Colesnic Victor, Gurghis Radu, Tintari Stanislav, Bordian Victor**

*Academic adviser:* Rojnoveanu Gheorghe, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The diagnosis of traumatic diaphragmatic injury (TDI) still remains a real challenge for the surgeons, and its delay can lead to unfavorable outcomes.

**Purpose:** Assessment of diagnostic tests for the patients with TDI.

**Methods:** The casuistic comprises 17 consecutive patients with TDI admitted to the Emergency Department from 2008 to 2011. The average age was 31 (ranging 17-56) years, with a sex ratio 4,7:1 (male:female). Penetrating thoracoabdominal trauma predominated (76,47%) over blunt injury. There were fourteen (82,35%) left-sided diaphragmatic ruptures. The underlying mechanism for TDI was assaults – 64,70%, followed by falls – 17,65% and motor vehicle collision – 17,65%. The average time from hospital admission to surgical management was 89 (ranging 20-180) min for penetrating wounds, and 806 (ranging 65-2220) min for blunt trauma. The median systolic blood pressure and heart rate were 109 (ranging 40-160) mmHg, and 96 (ranging 74-130) beats per minute, respectively. There were five (29,41%) patients in hypovolemic shock. Alcohol intoxication was present in 35,29% of the cases. The associated injuries in these patients included hollow viscus laceration (5), liver laceration (5), splenic laceration (4), lung injury (3), rib fractures (2), limb fractures (2), pelvic fracture (2), pancreatic injury (2), kidney laceration (1), urinary bladder injury (1), head injury (1). The average Injury Severity Score (ISS) was 27 (ranging 12-48). Only three patients (17,65%) had solitary diaphragmatic injuries. The distribution of severity of diaphragmatic injuries by grade was: grade I – 17,64%, grade II– 41,18%, grade III – 29,41%, grade IV – 11,77%.

**Results:** The majority of patients (62,50%) with penetrating wounds were sent straight by to the operating theatre for vital signs: predominantly performed by laparotomy, and only in 2 cases by thoracotomy. Other patients have been investigated: fourteen patients had chest radiographs, with four (23,53%) patients suspicious of a diaphragmatic rupture, CT scan – performed in 2 cases, excluded TDI. Laparoscopy

determined TDI in 3 of 7 cases, while the remaining establishing other injury requiring laparotomy. Postoperative complications occurred in 2 patients: posttraumatic pneumonia, pleurisy and pericarditis. Two people died due to severe polytrauma. The average length of hospital stay was 11(ranging 4-44) days.

**Conclusion:** TDI remains a difficult diagnostic problem determined by multiple injuries and the severity of polytraumatism. In the presence of a wound over the lower half of the chest and left abdominal flank, as in polytrauma patient, TDI requires a high index of suspicion to prevent further complications. The diagnostic of TDI can be made in complex, dynamically: chest radiograph and CT scanning in blunt injuries, and laparoscopy being the investigation of choice in penetrating ones.

**Keywords:** Diaphragmatic rupture, thoracoabdominal injury, polytrauma.

## SURGICAL TREATMENT OF DEFECTS TiBi

**Stratan Vladimir**

*Academic advisor:* Verega Grigore, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: The study aims to therapy treatment methods used in tibial defects. It is necessary to know the methods and cases in which these methods were used to get that positive treatment.

**Purpose and Objectives**: The criteria that guided us in making this research were the following:

literature review with reference to the issue concerned;

**Material and methods:** This study was performed on 50 patients admitted to the IMSP Hospital of Traumatology and Orthopedics, Section 5, during the period of 2000-2011, in order to examine the type and methods used in treatment. Patients of both sexes with an age of between 16-61 years. Examination of both tibia.

**Results:** According to the data from the record of cases investigated we found:

In 82% has been used Ilizarov method; In 2% External fixation has been made; In 10% was performed osteoplasty; In 2% was made alloplastic; In 2% was performed fixing brooch.

This mirror image of the results we obtained in this study by type of methods used in treatment.

**Conclusion:** After this presentation I became aquainted with the main methods of tibialis treatment defects.

After performing the case study we observed that the treatment was effective, the patients were satisfied with the treatment. The results of these works were recorded and a great number of men who suffered of tibilal fault, right tibia was affected (including the distal end), Ilizarov technique was used and the incidence of posttraumatic osteitis.

**Keywords:** Ilizarov method, Avascular Grafts, graft vascular Grafts OSAS (from stem cells).

## EXPERIENCE IN THE USE OF ULTRASOUND EXAMINATION IN DIAGNOSIS OF ACUTE PLEURAL EMPHYEMA

**Simonets Y., Bodrova A.**

*Academic adviser:* Makarov V.V., M.D., Ph.D., Associate Professor, Kharkov National Medical University, Kharkov, Ukraine

**Introduction:** The study aim was to investigate the possibility of using the pleural cavity ultrasonography in a complex of diagnostic measures in patients with acute pleural emphysema.

**Material and Methods:** We studied the results of treatment in 38 patients with acute emphysema, which were examined by pleural cavity ultrasonography in a complex of diagnostic measures. All patients had unilateral localization of acute emphysema. The multichamber emphysema was observed in 12 cases. All patients had pleural puncture.

**Results:** We used the combination of ultrasound examination of pleural cavity with radiological methods of diagnosis and CT in the dynamics in 26 patients. In 12 patients, the X-ray of the chest was performed only on the admission; further dynamic control of the pleural cavity was performed only by ultrasonography. This approach of dynamic diagnostics can reduce the radiation exposure of patients.

**Conclusions:**

1. The pleural cavity ultrasonography is a highly informative diagnostic method in the complex diagnosis of acute pleural emphysema. Its use is demonstrated for determining the boundaries, structure, localization of encapsulation; determining the place of puncture of pleural cavity; for the differentiation of adhesive process and the free liquid in pleural cavity.

2. Combined application of X-ray and ultrasonography of pleural cavity increases the efficiency of diagnostic measures and reduces radiation exposure of patients.

3. The use of ultrasonography is a promising method of diagnosis of acute pleural emphysema.

**Key words:** pleural emphysema, ultrasonography, diagnostic.

## THE COMPARATIVE ANALYSIS OF QUALITY OF LIFE IN PATIENTS OPERATED FOR COMPLICATED CHOLEDOCHOLITHIASIS

**Senko A., Dembitskiy A.**

*Academic adviser:* Savolyuk S., M.D., Ph.D., Associate Professor, Vinnitsa National Medical University "N. Pirogov", Vinnitsa, Ukraine

**Introduction:** At the present stage of development of biliary surgery, altogether with traditional (laparotomic) methods, there exist MINIMA invasive methods of biliary decompression, but aspects of the final choice of strategy and tactics of the optimal treatment of these patients still remains relevant and disputable nowadays.

**Aim:** The improvement of the remote results of complex surgical treatment of patients with complicated form of choledocholithiasis, on the basis of indicators of quality of life.

**Materials and Methods:** The medical examination of quality of life in 120 patients, who were operated during the 2007 – 2010 for complicated choledocholithiasis.

According the method of the operation the patients were divided into 2 groups:

- 60 patients, who were treated with external drainage of biliary ducts,
- 60 patients, who were treated by means of methods of the internal drainage.

The assessment of quality of life was held by the general questionnaire SF-36 of the patients on the seventh day after the operation and in a year's period.

**Results:**

The first group, the seventh day after the surgery:

- the transcutaneous transhepatic cholangiostomy (TTCHS)
- the laparotomic choledochotomy with the external drainage of the common bile duct (EDCH)
- laparoscopic choledochostomy (LSCHS)

The second group, the seventh day after the surgery:

- the endoscopic papillosphincterotomy (EPST)
- the stenting
- the blending of choledochoainoaistomosis (CHAIA) and choledochoduodenoastamosis (CHDA)

The first group, a year after the surgery:

- TTCHS
- LSCHS.
- EDCH

The second group, a year after the surgery:

- the stenting of the choledoch
- CHAIA
- EPST
- CHDA.

**Conclusions:**

1. Each of the methods of the biliary decompression has clear indications and contraindications, the final choice of the method of the surgery, we believe, should be based primarily on the assessment of its impact on the quality of life in patients with the choledocholithiasis in the postoperative period with the primary usage of the sphincter-preserving invasions.

2. Using the methods of the external biliary decompression the indicators of quality of life of the patients after the sphincter miniinvasive procedures such as the transcutaneous cholangiostomy and laparoscopic transhepatic choledochostomy, reached to 97,4 ± 2,1% and 85,3 ± 2,8% (related to the healthy people).

3. Among the methods of the internal biliary decompression, the highest results reached the stenting - 94,0 ± 3,7% (related to the healthy people).

4. Despite the fact that at the present stage of development of the biliary surgery the choledochoduodenoastamosis is widely used because of its simple technique and physiology, we recommend to use the choledochoainoaistomosis, after the application of which the indicators of quality of life of the patients are higher.

**Key words:** choledocholithiasis, quality of life, surgical techniques and methods, long-term consequences.

## THE LAPAROSCOPIC ANTIREFLUIX SURGERY FOR HIATAL HERNIAS: EARLY RESULTS

**Mocan Alina**

*Academic adviser:* Isac I., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Hiatal hernias have been the focus of surgeons over many years. The update of this

subject is due to the increasing number in patients with these diseases as a result of diagnostic possibilities, with the advantages of laparoscopic approach. Hiatal hernia in 66% cases is associated with gastro-esophageal reflux. Surgical treatment of hiatal hernia consists of removing the hernia sac through crurorаphy and antireflux procedure.

**Purpose:** Review of the contemporary laparoscopic management of hiatal hernias.

**Materials and methods:** 35 laparoscopic antireflux surgeries were performed during 2011. Axial hiatal hernias were recorded in 30(85,5%) cases, while hiatal mixed hernias- in 5(14,5%) combined cases. All patients were examined endoscopically, X-ray, and pH-metric studies. All the patients had a preoperative period which included the drug therapy for gastroesofageal reflux.

**Results:** The average age of patients was 48 years. There were 21 60%) women, and 14(40%) men. In the department of general surgery were operated all the 35 patients through laparoscopy. In 31(88,6%) cases underwent previous crurorаphy with fundoplication Nissen-Rossetti, in 4(11,4%) cases – by pr. Dor. The posterior crurorаphy has been used as a standard method in all cases. The average hospitalization period was 7 days. In all 35 cases the esophago-gastrography control was administrated with barium before the discharge of patients. Intraoperative complication wasn't registered. In the postoperative period 7 (20%) patients showed clinical signs of dysphagia, this regressed after administration of the drug treatment. There were no conversions. The follow-up results were not evaluated.

**Conclusions:**

1. Patients with hiatal hernias may benefit from the advantages of laparoscopic antireflux surgery.
2. In most of patients the postoperative dysphagia had a transitory character.

**Key words**: hiatal hernia, laparoscopic surgery, antireflux procedures.

## ABDOMENOPLASTY WITH ONE-STAGE BREST ENDOPROTHESIS TRANSABDOMINAL ACCESS

**Arapova Valeria**

*Academic adviser:* Karapetyan G., M.D., Ph.D., Professor; Vinnic Yu., M.D., Krasnoyarsk State Medical University "V. F. Voyno-Yasenetsky", Krasnoyarsk, Russian Federation

**Introduction**: The desire of patients to receive the maximum aesthetic result with minimal injury and "invisibility" of postoperative hem creates major difficulties for the surgeon in determining access. During the detachment of a standart of abdominoplasty skin-fat flap is held up to the xiphoid process and lateral to the costal arch, extending to the anterior axillary line, which makes possible with sufficient technical equipment of the holding-stage augmentation mammoplasty.

**Aim:** to improve the aesthetic result of augmentation mammoplasty using transabdominal access.

**Materials and Methods:** The operation was performed on the patient of 34years. Estimated volume of surgery - abdominoplasty, closure of the white line of the stomach, breast endoprosthesis through the transabdominal access. Operation: endotracheal anesthesia. The total operation time is 3hrs 40 min. Previously tracing of the surgical field was made. Standard horizontal incision above the pubis with the transition to the iliac spine. Detachment of the dermal-fat flap, bluntly and sharply, up to the xiphoid process and costal margins and laterally to the anterior axillary line. Fix diastasis between the rectus abdominis, which was 5.5cm reorganization carried out the surgical field with an aqueous solution of 1% dioxidine. Next, a tunnel was formed of about 7 cm, width to 4 cm mid-clavicular line medially and 3 cm laterally from it to the inframammary fold. The lower edge of the breast was mobilized using endoscopic techniques (KarlStorz). Then the large pectoral

muscle was split by means of coagulator and created a pocket in retromuscular space. Bottom-medial fibers were cut off from the edge-sternal articulation for up to 3.0 cm, and hemostasis. In the box implant is installed (anatomic, «Mentor» 350 ml). Drainage of Redon, the drainage was taken through the axillary fossa. The tunnel was taken in 3-row suture strands of single 3/0 4/0. Similarly, on the other side. Dermolipectomy anterior abdominal wall was perfomed. The navel is fixed in orthotopic position. The anterior abdominal wall wound layers of single strands were taken in 2/0 3/0 4/0 and shed 4/0. Drainage aspiration drains. Aseptic bandage. Compression bandages and linens.

**Results and discussion**: Serous-hemorrhagic discharge in the breast in the 1st day of about 50 ml, in the 2nd day of 30ml, in the 3rd day of 10 ml, drains are removed. Serous-hemorrhagic discharge in the anterior abdominal wall in the 1st day is about 100 ml, in the 2nd day is about 70ml, in the 3rd day to 40 ml, drains are removed. Sutures were removed on 14th day, healing by first intention. Full recovery of the patient has started by the end of the 2nd month.

**Conclusions:** The last follow up examination was in 13 months after the surgery. The aesthetic result satisfied the patient.

**Key words:** abdominoplasty, augmentation mammoplasty, transabdominal endoprosthesis.

## EVALUATIONS OF EARLY POSTOPERATIVE COMPLICATIONS IN PATIENTS WITH INGUINAL HERNIAS

**Bîrladean Ana**

*Academic adviser:* Popa Gh., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Inguinal hernia is a clinical and anatomical entity, very frequently encountered in surgical pathology structure, and the surgical treatment of it is always discussed in the special literature, both through the prism of surgical techniques used and through the prism of possible postoperative complications depending on the type of plasty. Currently, there is no consensus about the approaches towards the principles of surgical treatment of inguinal hernias, as well as a pertinent review of early postoperative complications depending on the type of surgical procedure.

**Aim:** Comparative analysis of early postoperative complications according to the methods of plasty of the inguinal canal in different types of hernias.

**Materials and Methods:** The study includes retrospective analysis of 94 patients examined and operated in aseptic surgery department SCM1, between 2009-2011, of which 6 patients with congenital inguinal hernias (6,38%), 21 patients with inguinal hernia (22,34%), 41 patients with direct inguinal hernias (43,61 %) , 26 patients with recurrent hernias (27,65%).

**Results:** Prefunicular hernioplastia techniques were performed in 9 (9,6 %) cases, to 35 (37,2%) patients were performed retrofunicular plastia and 50 (53,2%) cases – hernioplasty with synthetic mesh. In early postoperative period were registered the following complications: paresthesia (5), wound hematoma (3), acute urinary retention (3), wound suppuration (1), swelling of the scrotum (4). Patients with plasty using synthetic mesh show fewer early postoperative complications: paresthesia (2), hematoma (1), acute urinary retention (1), and swelling of the scrotum (1).

**Conclusions:** The incidence of early postoperative complications in plasty with synthetic mesh is significantly smaller versus the pre- and retrofunicular techniques with own tissue. The surgical cure of recurrent hernias is preferably using synthetic prostheses.

**Key words:** inguinal hernia, hernioplasty, postoperative complications.

## SURGICAL TREATMENT FOR COLORECTAL LIVER METASTASIS

**Stan Nora Diana, Coman Corina, Ciobica Anamaria, Mocan Lucian**

*Academic adviser:* Mocan L., M.D., Ph.D., Associate Professor, University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania

**Introduction:** Liver is one of the most common sites of metastasis from colorectal cancer. Of all patients who undergo a curative resection for colorectal cancer, 25% will develop liver metastasis. Hepatic resection of colorectal liver metastasis results in improved survival. The aim of this study is to analyze the perioperative outcome and the prognostic factors for mortality and morbidity in liver metastasis.

**Material and Methods:** Between January 2009 and December 2010, 38 patients underwent surgical treatment with curative intent for colorectal liver metastases at 3-rd Surgical Clinic, Gastroenterology Institute, Cluj-Napoca hospital. A retrospective review of patients' characteristics and various histopathological and surgical factors was performed.

**Results:** Out of 38 patients, 14 (36.8%) were female and 24 (63.2%) were males. The overall mortality rate was 2.6% and the global morbidity was 13.2%. 76.3% of the tumors were located in one lobe, whereas 23.7% were located in both lobes. Major resections were performed in 5 cases, in 15 cases segmentectomy was the procedure of choice and metastasectomy (limited resection) was performed in 18 cases. Perioperative mortality and morbidity was not associated in our study with the intraoperative blood loss, extent of the resection, or localization of tumor (Chi square $p>0.05$ in all cases).

**Conclusion:** In our study we found that surgical resection of liver metastasis from colorectal cancer represents a safe procedure and should be the treatment of choice in such cases.

**Key words:** colorectal cancer, liver metastasis.

## LIVER TUMORS IN CHILDREN

**Livşiţ Irina**

*Academic adviser*: Gudumac Eva, M.D., Ph.D., Professor, Academician, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Liver tumors occupy a special position in oncology pathology in children due to their origin. Difficulties in this area are a subject to a number of factors such as delayed visit to the doctor, the occult clinical symptoms in this pathology, changing clinical manifestations, a wide range of pathologies that are manifested though similar clinical picture. Primary liver tumors in children have an incidence of 3% of cases and ranks 3rd place among abdominal tumors, after Wilms tumor and neuriblastoma. Liver tumors affect most commonly children of 0-5 years.

**Aim:** To demonstrate the data of personal observations in children with this pathology.

**Material and methods**: The National Center of Pediatric Surgery "Natalia Gheorghiu" 2004 trough 2011 received 21 children with tumors of liver. Distribution of children by age: up to a year (n=4), from 1 to 3 years of age (n=9), 4-7 years of age (n=4) and 4 children from 8 to 18 years of age. Separation for

sex was 10 girls and 11 boys. All children went through ultrasound study, for 11 children – scintigraphy of the liver, 14 – computed tomography and for one – nuclear magnetic resonance. After preparatory treatments they were made 15 biopsies, 1 – lobectomy, 1 – subtotal extirpation of tumor and 4 total extirpation of the tumor.

**Results:** The final diagnoses were as follows in 20 (23%) children – mass in retroperitoneal space, in 17 (19,5%) - the mass in the abdominal cavity: in 3 (3%) - intestinal, in 10 (11,5%) - liver, in 20 (23%) - the internal female genital organs, 3 (3%) - the spleen, 2 (2%) - the stomach and one echinococcus of the mesentery.

**Conclusions:** One of the key topics in medicosurgery treatment of liver tumors in children is reanimatological treatment, intensive care syndrome at preoperative stage. All surgical interventions in children with liver tumor are at high anesthesiology risk as a result of endo-toxicities, high intraoperative trauma, high potential of hemodynamic changes, of homeostasis, metabolic, respiratory and liver deregulations etc. In most cases total exterpation of malignant liver tumors is limited especially in bilateral tumors and of their central localization.

**Key words**: liver, tumors, abdominal, surgery.

## SURGICAL ISSUES IN TETRALOGY OF FALLOT (ToF) TREATMENT

**Iovu I.**

*Academic adviser:* Repin O., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** ToF is a CCD, consisting of subpulmonary infundibular stenosis, ventricular septal defect, aortic valve rightward deviation and right ventricle hypertrophy. It is the most common cyanogens CCD, encountered in more than 50% of. ToF occurs in 5 of 10000 births, in proportion of 54% boys and 46% girls. Many of those who carry ToF, die in the newborn age; those who survive, present essential hemodynamic disorders, with no treatment insights. Survival rates as follows: up to1 year- 66%, up to3 years- 40%,up to20 years– 11%, up to40 years- 3%. Patient's clinical characteristics underlie the surgical behavior, pre- and postoperative evolution of the disease.

**Aims:** Surgical treatment issues remain due to factors, such as optimal age to that lower risk for surgery, the pathologies associated (AP).

**Material and Methods:** Data were collected from patients hospitalized from 2010 to 2011. The sample studied consists of 37 patients (P), 3 months to 32 years aged, including 13 girls and 24 boys. Pre- and postsurgical subjective, objective, paraclinical (electrocardiography, echocardiography, angiocardiography, etc.) data were analyzed from the clinical examination records, by examining the P. The research is based on descriptive, standartization and case-control studies. Depending on the purpose of research, the sample was stratified into predefined categories.

**Results:** During mentioned period, 39 P were hospitalized, 97% planned and 3% emergency, 37 surgeries were made, including 19 palliative shunting, 16radical corrections. Out of all interventions 4 deaths were mentioned (10%). On average, P with ToF present a 3,7 kg (19%) weight and 6,4 cm (7%) height deficiency. Intra- and postoperative complications (IPOC) at P up to 4 years (26 P, 70%) appears as mentioned: 61% without, 30% with 1-2 and 4% with 3 complications; P above 4 years (11 P, 30%): 18% of them have no complications, 63% with 1-2 and 18% present 6-9 complications. Excluding age factor (>4 years), 75% of those without AP (12 P, 46%) have no complications, another 25% - have it, while P with AP (14 P, 54%), majority of them – 71% have IPOC. According to NYHA classification, 62% present

3 –4 levels of heart failure (HF), and another 38% – 1 or 2. Only 4 P (11%) present HF of III or IV level by NYHA postoperative.

**Conclusions:** At P with ToF, a deficiency in physical development of P is revealed. Because of relatively small aged P being hospitalized and therapeutic 2-steped method, cases of deaths are reduced significantly. IPOC depends on patient's age and presence of AP. Compared to initial predominant severe HF, it reduces to 1-2 by NYHA after surgery, which means postoperative favorable evolution, with a 11% risk of severe HF.

**Key words:** tetralogy of Fallot, cardiac surgery, CCD.

## INTRAPERITONEAL CYSTIC FORMATIONS IN CHILDREN: CLINICAL EVOLUTION, FEATURES OF THE DIAGNOSIS AND TREATMENT

**Soloviov Anna**

*Academic adviser*: Gudumac Eva, M.D., Ph.D., Professor, Academician, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Intraperitoneal cysts are rarely encountered pathologies, but quite serious, which have attracted special attention.

**Purpose**: to improve diagnosis and of surgical treatment of intraperitoneal cysts at the children by developing an algorithm for diagnosis and treatment.

**Aims:**

1 To establish at the early stage intraperitoneal cysts at the children

2 To determine the clinical evolution features of intraperitoneal cysts in the children

3 To develop a diagnostic algorithm of intraperitoneal cysts in the children

**Material and methods**: The study included work with the medical records of 459 patients at the department of thoracic and abdominal surgery, conducted during the years 2006-2011 at the Central Hospital „Mother and the Child"

**Results**: According to data collected from 459 patients with intraperitoneal cysts in the children. 360 pts (78.60%) - hydatid cyst, 52 pts (11.30%) - ovarian cyst, 28pts (6.20%) - ovarian torsiat, 19 pts (3.90%) - cyst of the spleen.

**Conclusions:** Intraperitoneal cysts are difficult to detect because they are often asymptomatic. Diagnosis is difficult and can be facilitated by laboratory investigations such as ultrasound and computer tomography.

**Key words**: cyst, diagnostic, treatment.

## EVALUATION OF WOUND SUPPURATION AS A POSTOPERATIVE COMPLICATION AFTER RADICAL SURGERY WITH CURATIVE INTENT FOR COLORECTAL CANCER

**Ciobica Anamaria, Coman Corina, Stan Nora Diana, Coroiu Roxana**

*Academic adviser:* Mocan L., M.D., University of Medicine and Pharmacology "Iuliu Hatieganu", Cluj-Napoca, Romania

**Introduction:** The elective method of surgical intervention with curative intent in colorectal neoplasm is a radical surgery with a classic approach followed by different types of anastomosis. These types of surgical interventions are accompanied by a series of postoperative complications with impact on the period of recovery of the patient; these complications can be prevented by knowing the precipitating factors that favor their occurrence.

**Materials and methods:** We performed a prospective study in which 750 patients with colorectal neoplasm resection were selected, 284 females and 465 males. The patients suffered surgical interventions with the classic approach and received segmental or total colorectal resections at the 3rd Surgical Clinic (Cluj-Napoca, Romania) between 01.01.2009 -01.12.2010. The study is based on postoperative complications and the following criteria were selected: bleeding, suppurated wound, anastomotic fistula, systemic complications (evisceration, abdominal abscess, urine retention, and thrombo-embolism, respiratory or cardiac complications) and fecal incontinence. The observed data was collected from patient observation files and standard sheets specially designed for this study.

**Results:** We observed an increased prevalence of postoperative wound suppurations in patients that were living in urban areas with a frequency of 47.22% male patients with a frequency of 43.83%. Suppurative wound surgery is validated significantly in frequency among patients who had increased biological parameters that were evaluated preoperatively: 54.08% for urea, 54% for creatinine, 46.08% for TGO, 50% for TGP, 50% for platelet count, 51,4% for total bilirubin, 50.86% for amylases, 38.15% for blood glucose, 49.09% for hemoglobin, 52.63% for total protein, 90.9% for CEA, 54.45% for patients who received preoperative transfusions, 55.23% for patients that received preoperative anticoagulation treatment, 53.39% for patients that did not received intraoperative transfusions and 47.19% for those who claimed chronic alcoholism.

In patients whose neoplastic process underwent surgical intervention in one surgical step and who underwent direct anastomosis the most common postoperative complication of suppurative wound had relevant percentage of 53.84%. The study found a relative dispersion taking in account the majority of elements for suppurative wound complications who weren't significantly correlated with the location of the incision in segmental resection for different levels on the colorectal framework, for the ascending colon we got a percentage of 41.17%, 80% for the transverse colon, 60% for the descending colon, 60% for the sigmoid colon, 48.38% for the superior and medium thirds of the rectum and 35% for the inferior third of the rectum. Also the analyzed data are showing a relevant percent of 51.47 for the patients whose anastomosis was done in a single layer.

**Conclusions:** The most common postoperative complication is suppurative wound and it is determined by the living area of the patient, sex of the patient and requires a faithful correction of the biological parameters with tendency for homeostasis. The distribution of the complications regarding the level for the segmental resection is statistically insignificant because of the dispersion rates of the occurrence of postoperative suppurative wound for different locations for segmental resection along the colorectal frame. The dates are also suggesting that the surgery steps in which the patients with neoplastic processes are operated is significantly related to postoperative events.

**Key words:** colorectal cancer, postoperative complication, suppurative wound.

## THE SAFETY OF ENDOSCOPIC BAND LIGATION OF ESOPHAGEAL VARICES DURING PREGNANCY VERSUS ENDOSCOPIC SCLEROTHERAPHY IN PATIENTS WITH CIRRHOTIC PORTAL HYPERTENSION

**Lupaşcu Aliona**

*Academic adviser:* Etco L., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction**: Pregnancy is unusual in women with portal hypertension (PH), and no clear guidelines for the management of esophageal varices (EV) during pregnancy and their major complication- variceal bleeding have not been yet established. The purpose of this study was to compare the efficacy of endoscopic band ligation (EBL) in treating of the EV during pregnancy, versus endoscopic sclerotheraphy(ES).

**Materials and Methods:** The subjects of the present study were four cases of pregnant women (mean age-30.3±1.4) with posthepatitis (HCV, HBV) liver cirrhosis and high-risk of EV (F3, RCS+++). Severity of liver disease was classified: A/B/C-2/1/1, the mean(s.d.) score on admission was 6,7/10/12(9,3). EBL has been carried out with MBL-6 or MBL-10(*Wilson-Cook®, Winston-Salem, NC, USA*) in three cases. EBL was performed at 27,6 ± 4,2 weeks gestation. In one case it was perfomed ES.

**Results:** Characteristics of EBL were: total sessions-3, mean (s.d.) rubber band consumption-4.3(0.8). The complete EV eradication (F0, RCS-) was obtained in this patients with *zero* episodes of EV bleeding. The patients underwent delivery thorugh cesarean section in two cases (n=2) and per vias naturalis in one case (n=1), with an elective-assisted second stage. There was 1 maternal death in the postpartum period due to fulminant hepatic failure. In case of endoscopic sclerotheraphy, the complete EV eradication was not obtained. The patient underwent delivery by cesarean section at 37 weeks of gestation because of deep fetal grow restriction(FGR) in baby and high-risk EV(F2) in mother.

**Conclusions**: Treatment of EV during pregnancy is a rare and serious clinical dilemma especially in endemic zone. Initial experience and sporadic cases described in special medical literature, had demonstrated that EBL appear to be a useful treatment in pregnant women with EV without fetal complications. In the same time ES, according to conflicting data in literature, is not very safe during pregnancy. This may cause deep necrosis of esophageal wall with its rupture or stenosis in mother and FGR or fetal malformations in baby. With this approach, firstly we can think that FGR in our case may be a complication of ES. EBL represents a major alternative to ES, because no chemicals are used during the procedure and the risk for baby decreases. Secondly, in case of EBL was obtained a complete EV eradication.

**Key words:** pregnancy, esophageal varices, endoscopic treatment.

## SURGERY MANAGEMENET IN DIABETIC FOOT

**Sabanov Alina, Galasan Valeria**

*Academic adviser:* Isac I., MD, PhD, Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** The present problem of the diabetic foot is valid everywhere by Sent Vincent declaration, received in 1989. Here especially we can find the problem of increasing incidence of diabetes and the importance of through studies of diabetic foot. But the problem of surgical diabetic foot remains still open. This complication is ended with mutilating amputations in 80-83% cases. The goal of this study was to determine the surgical tactics in patients with diabetic foot, as well as the level of amputation.

**Materials and Methods:** 98 diabetic patients were studied for the main complaint of diabetic foot, being admitted to the septic surgery of the municipal hospital No. 1 in 2011. Patients ranged from age 42 to 78. Ration men-women, was practically equal 1:1. Type 1 diabetes was recorded in 91% patients. Record character of plantar conditions were as follows: the plantar gangrene or two and more fingers - in 44 cases (44.8%), dry gangrene of one or more fingers-20 (20.1%), phlegmon - in 25 cases (25.5%), and trophic ulcers of the plant and calacaneus-9 (7.5%).

**Results:** Patients in the study group were treated by means of different methods: in 16 cases we used the open method of treatment of the infected wound, dressings daily, necrectomies and medication in order to improve the blood circulation.

82(83.7%) patients were operated in the study group. The following surgery was performed: (I) Processing of surgical phlegmon with repeated necrectomies -25 (30.4%) of 82 operations; (II) Wide amputation at the thigh and ankle - 14 (17.0%); (III) Lower amputations (exarticulations of fingers, partial amputation of the foot sole - 30 (36.8%); (IV) Reconstructive operations on vessels (deep plastic surgery, by pass ileo-femoral) - 7 (0.8%); (V) Transplantation of skin was performed in order to cover defects-6 (0.7%).

4(0.4%) died patients in the study group, two of them with poli organic background failure were not operated. 72 (73.6%) patients were discharged in a satisfactory condition and 22 (26.0%) continued their treatment in out- patient department

Unoperated patients were discharged after 12-18 days in a satisfactory condition, when wounds were healed or were in the process of grain, to extend the outpatient treatment.

**Conclusions:** Patients with serious complications of diabetes, diabetic plantar is hospitalized in specialized sections later, when they have gangrene or necrosis and flegmons. For reasons of, reconstructive operations are quite low (0.8%). In the study group prevailed mostly, wide and low amputations (53.8%). Diabetic phlegmon, requiring debridement and daily necrectomies with a recovery rate of 15 - to 32 days.

**Key words:** diabetic foot, surgery.

## PROGNOSTİC CRITERIA OF PARACENTETIC - DRAINAGE METHOD EFFECTIVENESS FOR TREATMENT OF EXTRA-ORGAN INFECTED FLUID COLLECTION IN ABDOMINAL CAVITY

**Gayvoronskaya A., Zenina Yu., Perminov A.**

*Academic adviser*: Lishov E., M.D., Ph.D., Professor, Kemerovo State Medical Academy, Kemerovo, Russian Federation

**Introduction:** One of the most important current surgical tasks is the treatment of the intra-abdominal abscess patients, because there is neither positive tendency to reduce the amount of acute inflammatory diseases of abdominal cavity organs nor the tendency to reduce the postoperative suppurative complications. There is no doubt today about efficiency of transcutaneous abscess drainage under ultrasound guidance, but there are some contradictory opinions about efficiency of paracentetic treatment as compared to conventional surgical procedure.

Research goal is to study the effectiveness criteria of paracentetic-drainage method in extra-organ infected fluid intraabdominal collections treatment and their dependence on collection echostructure and etiology.

**Material and methods:** The retrospective analysis was carried out on 53 medical case-histories of extraorgan intra-abdominal abscess patients treated in surgical department of Regional clinical hospital No 1 in Kemerovo. The ultrasonic data, such as size, wall structure and characteristics of content were analyzed. The patients were divided into two groups: the 1st group (37 patients, n=37) consisted of patients who underwent only abscess paracentesis or drainage under ultrasound guidance; the 2nd group consisted of patients (n=16) who underwent open abscess drainage after inefficient paracentetic-drainage.

**Results:** the etiology analyses of intraabdominal collections showed the paracentetic-drainage approach to be more often efficient for surgery on hepatobiliary system of patients with fluid collections in subhepatic area (42%). The most frequent cause for fluid formations in the 2nd group patients was acute pancreatitis, pancreatonecrosis – 45.3%. The volume of fluid collection in the 1st group patients was significantly less (74.4±0.3 ml) than in the 2nd patients group (117.8±2.3 ml). The formation echostructure analyze of both groups showed the 1st group to have formations with well-defined shapes ($\chi^2$ = 2.55; p=0.01) and smaller size ($\chi^2$ = 5.71; p=0.017). Heterogeneous echostructure and infiltrated fluid collections around were characteristically to the 2nd group patients. The analysis also showed that infected fluid collections containing pus in the 1st patients group were smaller in volume than in the 2nd group (73.84±0.3 ml to 111.75±0.5 ml respectively).

According to the leukocyte index of intoxication (LII) analysis there is no reliable difference between LII in the 1st and the 2nd groups (p-29). But it is certain that LII reduces on the 3rd day after the drainage (the 1st group patients from 1.9 to 1.3; the 2nd group patients from 4.6 to 1.45).

**Conclusion:** The efficiency of transcutaneous paracentesis under ultrasound guidance depends on etiology and echostructure of intraabdominal abscess. In case of pancreatic necrosis the minimal invasive method has an insignificant effect as the final treatment stage because of sequesters.

**Key words:** minimally invasive surgery, intraabdominal extraorgan infected fluid collection.

## GASTROINTESTINAL AUTONOMIC NERVE TUMOR: REPORT OF A CASE

**Cernat Mircea**

*Academic adviser:* Ghidirim N., M.D., Ph.D., Professor; Mishin I., M.D., Ph.D., Professor. State Medical and Pharmaceutical University"Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Gastrointestinal autonomic nerve tumors (GANT) are a rare subgroup of gastrointestinal stromal tumors (GIST). Their histological appearance is similar to that of other GISTs. Up to date only about 200 cases were published in English literature.

**Aim**: We report an additionally case of gastric GANT.

**Methods**: A 72 years old female patient was admitted with abdominal tumor mass which occurred in the stomach according CT scan. She underwent a surgery and subtotal gastrectomy was performed.

**Results**: Postoperative recovery was uneventful. Histological examination and immunohistochemical analysis revealed the diagnosis of a gastrointestinal autonomic nerve tumor. The immunohistochemical profile of the tumor revealed positive staining to *c-kit* (CD117), CD34, vimentin and S-100, positive staining to neuron-specific enolase (NSE) and negative staining to desmin. Three months after initial diagnosis and surgery the patient is asymptomatic and was scheduled for very close follow up.

**Conclusion**: Radical surgical resection of gastrointestinal autonomic nerve tumors seems to be the only available curative approach to date in patients with no metastasis.

**Key words**: gastrointestinal autonomic nerve tumor, gastrectomy, immunohistochemical stain.

## MICROBIOLOGICAL AND EPIDEMIOLOGICAL FEATURES OF MICROBIAL ASSOCIATIONS IN SEPTIC INFECTIONS IN SURGICAL DEPARTMENTS

**Shabrov A., Mitrofanova N., Melnikov V.**

*Academic adviser:* Melnicov V., M.D., Ph.D., Professor, Penza State University, Medical Institute, Penza, Russian Federation

**Introduction:** The problem of septic infections (SI) is still an actuality, despite the positive developments in the fight against infectious diseases

**Objective:** The study of the microbiological and epidemiological characteristics of poly etiology of purulent-septic infections in surgical patient's general hospital

**Materials and methods:** Isolation and identification of microorganisms was carried out by conventional methods. To identify clinical and epidemiological features performed a retrospective analysis of incidence, according to official registration in the recording and reporting hospital.

**Results:** 108 strains of microorganisms were aallocated, belonging to the 11 species. Among Assiociants dominated by Staphylococcus aureus (35,18%), Acinetobacter baumannii and Staphylococcus epidermidis. Acinetobacter baumannii and Staphylococcus epidermidis predominated, and among Assiociants among monocultures. Enterobacter agglomerans, Proteus mirabilis recorded only in the association. For surgical patients the most frequent combination of established S.aureus, Staphylococcus epidermidis among themselves, as well as E.coli, Proteus spp., Entero-coccus spp. Most species of microorganisms occurred mainly in the form of associations. In general surgery the figure was equal to 64.3%, dominated by two-component association. The number of multidrug-resistant crops amounted to 25,1% (Acinetobacter baumannii, Staphylococcus aureus, Enterobacter agglomerans). Jaccard coefficient was highest for Staphylococcus aureus Staphylococcus epidermidis (68,9%) and Staphylococcus aureus c Acinetobacter baumannii (47,5%), which corresponds to the synergistic relationship. And in the associations and Staphylococcus epidermidis Acinetobacter koeffitsient 17.1 – has an antagonist relationship. The neutral attitude prevailed over the synergistic and antagonistic. The average incidence of polyetiology infections was 17 per 100. As a result of the study, the following clinical and epidemiological features of polyetiology of infections in surgical patients and risk factors for their development: the leading pathology in polyetiology infections - skin and subcutaneous tissue (70%). The age structure of patients was predominantly older age group (42 to 60), and the average age of the patients was 54. The main type of surgery - opening abscesses, phlegmon, limbs amputation. Poly etiology of infections in patients had more surgical interventions (70.1%) and it was found that more patients with infections were poly etiology necrectomy.

Duration of hospital stay was 13.4 days on average. The intensity of the ABT was primarily a course.

**Conclusions:** Organization of the microbiological monitoring of poly-etiology SI, is a necessary part of the surveillance of hospital infections.

**Key words:** purulent septic infections, association, epidemiological surveillance.

## PECULIARITIES OF DIAGNOSTIC AND TREATMENT OF THE DIVERTICULAR DISEASE OF THE COLON

**Bzovii Florin**

*Academic Adviser:* Timis Tudor, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Diverticular disease is one of the most prevalent medical conditions that affect Western populations. Symptomatic diverticula can lead to serious complications requiring both medical and surgical interventions to treat these complications when they occur. Imaging is used to establish the diagnosis and its extent and severity, and to detect the presence of any complications so that management can be directed appropriately. The most widely used examinations for the diagnosis of diverticulitis are barium enema, ultra-sound, and computed tomography. Goals of therapy should focus on alleviating symptoms in symptomatic disease and preventing recurrence and complications. The indications for emergency operative treatment include generalized peritonitis, uncontrolled sepsis, uncontained visceral perforation, the presence of a large abscess, and lack of improvement or deterioration within 3 days of medical management. Complications of chronic diverticulitis, including fistulas, strictures or stenosis, and most cases of colonic obstruction, are also treated surgically.

**The aim:** To elaborate an algorithm of diagnostic and treatment in diverticular disease of the colon (DDC). To establish the efficiency of operative techniques in surgical treatment.

**Material and methods:** 27 patients (14 males and 13 females), average age 65,2±10,9, diagnosed with diverticular disease of the colon were included in the research. Depending on presence of complications, therapeutic or operative treatment was used.

**Results:** Age, obesity and lifestyle are the most important factors in pathogenesis of diverticular disease of the colon. It was noted an increased incidence of DDC and its complications in age decades 50-60 and 61-70. It was proposed to include in the mandatory set of methods for diagnostic of DDC barium enema (95% of sensibility), colonoscopy (84% of sensibility), as well as ultrasound and computed tomography as additional methods for identification of complications. In 10 patients (37%) was used therapeutic treatment and 17 patients (63%) required surgical intervention, the most frequent being sigmoid resection (34%). Complications after operation were registered in 4 patients (23%).

**Key words:** diverticular disease of the colon, therapeutic treatment, operative treatment, sigmoid resection.

## RELATIONSHIP OF LITHOGENESIS AND OXIDATIVE DAMAGE IN EXPERIMENTAL NEPHROLITHIASIS

**Motin Y., Zharikov A.**

Altai State Medical University, Barnaul, Russian Federation

**Introduction:** Modern literature indicates that tissue damage in the kidneys is an important factor in the formation of urinary stones. It is recognized that the deposits of calcium salts are capable of inducing tissue reactions in the epithelium of the distal tubules and collecting tubules, particularly activating the process of free radical oxidation.

**Material and Methods:** The morphological study of 60 rat kidneys with experimental oxalate nephrolithiasis was conducted. To identify the calcium deposited, silver impregnation by von Kossa's method was used. Using immunohistochemistry, the expression of the severity indices of oxidative damage (malondialdehyde – MDA) and antioxidant defenses (mitochondrial superoxide dismutase – SOD-2) were determined.

**Results:** After 3 weeks of the nephrolithiasis modeling in the epithelium of the collecting tubules, in the interstitium of the medulla substance, in the lumen of collecting tubules numerous calcium deposits were found (mean 21.4±3.40 in the field of view). The average size of the deposits was observed to be

16.5±0.60 mm. In 10% relatively large microlites (up to 30-35 μm) were found with obturation of the lumen of the collecting tubules. Noted decreased expression (1+) of SOD-2 in epitheliocytes. The weakening expression of the antioxidant enzyme was accompanied by a statistically significant elevation of lipid peroxidation products (2+).With using of α-tocopherol in the experiment, a much smaller intensity of histopathological kidney restructuring was determined. The moderate amount (up to 17.6±2.39 in the field of view) of calcium compounds were small, averaging 5.40±0.28 mm in size. Large compounds of calcium, obturation clearance tubules and collecting tubules, or inlays their epithelium were not detected. Immunohistochemical study of the rat kidney during treatment with α-tocopherol showed moderate (2+) expression of the SOD-2 in epitheliocytes of the collecting tubules, comparable to the intact group and significantly (12.5%) higher than in animals with an experimental model oxalate nephrolithiasis. The intensity of the expression of MDA was similar to that in the intact group and significantly lower in animals with the experimental oxalate nephrolithiasis.

**Conclusion:** During the simulation of the experimental oxalate nephrolithiasis in the rat kidney, marked morphological signs of oxidative damage activation in the tissues and cells and a weakening of the enzymatic antioxidant defense system, accompanied by an acceleration lithogenesis were noted. The usage of antioxidants has beneficial effects on the renal morphologic reorganization, as it reduces the degree of oxidative damage to the cells and tissues, while it helps to reduce the number and size of the calcium deposits formed.

**Key words:** nephrolithiasis, free radical oxidation.

## EXTRACORPOREAL SCHOK WAVE LITHOTRIPSY (ESWL) – EXPERIENCE OF THE DEPARTAMENT OF UROLOGY REPUBLICAN CLINICAL HOSPITAL

**Bradu A.**

*Academic adviser:* Ceban E., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In present days, in Republic of Moldova, extracorporeal shock wave lithotripsy (ESWL) is a usual form of treatment for renoureteral lithiasis. The purpose of this work is to evaluate the results after treatment of urolithiasis with extracorporeal shock wave lithotripsy in our clinic.

**Material and Methods:** During August 2011 – December 2011, a number of 190 patients were treated by ESWL for renoureteral lithiasis and a number of 243 treatment procedures were performed. The device we have is a second generation MODULITH® SLK lithotripter, with radiological and ultrasonographic localization system. In a number of 115 patients the localization of calculi was renal (60,52%), in 75 cases (39,47%) was ureteral localization.

**Results:** In a number of 120 patients (63,15%) ESWL was the single method used for therapy. A number of associated methods of treatment (percutaneous nephrostomy, ureteral catheter,) was necessary for 25 patients (13,15%). ESWL was made in 10 patients with a single kidney (5,26%). 40 (21,05%) patients were necessary two treatments, with in 3 (1,57%) patients three treatments or more were used. Severe complications occurred in 11 % cases (sepsis, anuria, perirenal hematoma, steinstrasse, etc.)

**Conclusions:**

1. ESWL is a very common method of treatment of renoureteral lithiasis and indication of primary treatement is about 70%.

2. Associated methods (percutaneous nephrostomy, autostatic ureteral catheter, etc) were necessary

before or after the procedure in case of non fragmentation or complications.

3. Severe complications lead to a adequate therapy (internal or external drainage of urinary system in urosepsis), and in the perirenal hematoma in evolution - open surgery.

**Keywords:** extracorporeal shock wave lithotripsy, experience, patients.

## SURGICAL CORRECTION OF FALSE CONGENITAL DIAPHRAGMATIC HERNIAS IN CHILDREN BY MEANS OF ANATROPIC OSTEOTOMY

**Chornopishchuk R., Khumera S., Larin O., Shavliuk R.**

*Academic adviser:* Yakymenko O., M.D., Ph.D., Professor, Vinnitsa State Medical University "N.I. Pirogov", Vinnitsa, Ukraine

**Introduction:** Congenital diaphragmatic hernias (CDH) belong to the group of vitally dangerous defects of development of respiratory system accompanied by heavy derangements of respiratory, cardiovascular, nervous systems and the organs of gastrointestinal path. According to scientific works in this field the frequency of this anomaly is very high - 1 case on 2000-4000 newborns, including mortinatus. The lethality at the pathology has been quite high, it averages 18-33,4%. Despite significant achievements in the treatment of CDH, surgical treatment still is the most effective method, consisting in clearing pleural cavity of hernial contents with the further liquidation of the diaphragmatic defect. However, even among the children operated in due time the lethality is 40-60 %. Timeliness, the choice of surgical interfere, method and techniques of a plasticity of the diaphragm, the liquidation of *visceroabdominal disproportion* and of the respiratory distress, the prevention of postoperative complications still are controversial points. All this requires the search of the new surgical approaches, the development of which is impossible without an adequate experimental model of the diaphragmatic hernia.

**Objective:** The purpose of the work is to develop an experimental model of a false diaphragmatic hernia on dogs with the possibility of the further surgical correction with the application of anatropic osteotomy.

**Materials and methods:** Surgical interfere was carried out upon 12 mongrels aged from 1 to 2 months. After the survey X-radiography of the organs of thoracic and abdominal cavities, animals received the combined intravenous narcosis supplemented with endotracheal intubation. Further on the edge of the left costal arch laparotomy was carried out. Having provided access to the left dome of a diaphragm, the superposition of ligature for fixing was carried out, between which a big rag in the form of a triangle was cut. Through the formed defect the loops of the small intestine were introduced into the pleural cavity and fixed at the level of gate of the created diaphragmatic hernia by the sero-muscular sutures. The pleural cavity was draining. The wound of the anterior abdominal wall was *layer* by layer stitched up in separate nodal tight sutures. In 2 hours after the end of surgery investigation a control survey X-radiography was carried out. Considering the fact that the created model of the diaphragmatic hernia has to resemble the natural one as much as possible, the second stage of surgery investigation was carried out a month later.

Under the combined intravenous narcosis in the projection of the 6th rib of the animals thoracotomy was carried out. Having removed fixation sutures, small intestine loops were displaced to the pleural cavity. Having found the 6th rib, the soft fabrics were dissected ***layer*** by layer to a rib with dissection periosteum, its mobilization and performance triangular osteotomy, with the further renewal of integrity periosteum. Then the edges of gate diaphragmatic hernia was stitched with U-shaped suture and the defect in the diaphragm was consistently sewn up, its edges pulled together without tension.

An operational wound was sewn up ***layer*** by layer and tightly. Then the extubation of the animals was conducted and in 2 hours time after the end of the surgery investigation a control survey X-radiography was carried out.

**Results:** Starting with the first days after the surgery, the dogs had general delicacy, disturbia, refusing to take water and nutrition. The objective changes signified the development of the syndrome of intrathoracic strain: frequent shallow breathing, a tachycardia, the sunk down gaste, asymmetry, deformation, blasting and backlog in the certificate of breath of the wounded half of the thorax.

Percussion in the low parts of the thorax on the side of a probable hernia helped to determined tympany. At auscultation in this field the sharp indulgence of breath and periodic peristaltic noise was heard.

In 2 hours after the operation on the plain film in two projections the regions of a ring-shaped clarification and the level of the lungs collapse were positioned. Within a month, despite the improvement of the state, the animals still had the signs of the intrathoracic strain. After conducting thoracotomy and returning the loops of a small intestine into the abdominal cavity, the defect of the diaphragm of significant dimensions and high position of bottom edge of the left lung were preserved. After osteotomy the rib lost rigidity of an arch and sag in pleural cavity under the traction of the surrounding intercostal muscles, letting to occlude the defect of the diaphragm reliably and without additional tension.

**Conclusion:** Thus a simple and reliable way of modeling of a false diaphragmatic hernia is offered, resembling the congenital one as much as possible, and a new method of surgical correction of the pathology with the application of osteotomy in a projection of the diaphragmatic defect is developed.

**Key words:** congenital diaphragmatic hernia, experimental model, anatropic osteotomy.

## FACIAL NERVE MONITORING PARAMETERS – PROGNOSTIC VALUE OF THE POSTOPERATIVE FACIAL NERVE OUTCOMES AFTER CEREBELLO-PONTINE ANGLE SURGERY

**Borodin S.**

*Academic adviser:* Zapuhlîi Gr., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Facial nerve (FN) paralysis is a frequently encountered complication in the surgical management of cerebello-pontine (CP) angle surgery. Its extent varies from barely visible to disfiguring paralysis, affecting the quality of the patient's life. Complete removal of the tumor with functional preservation of the FN remains the goal of the surgical procedure. The introduction of electromyographic monitoring of FN has improved the rate of FN preservation. We report the technique, outcome and complications seen in 5 cases of CP angle tumor surgery performed with intraoperative neurophysiologic monitoring of the FN function.

**Material and Methods:** Five patients with CP angle tumors, including 4 vestibular schwannomas and one meningioma, were operated in our institution by retrosigmoid approach, during the period from December 2010 to April 2011. The ISIS intraoperative neuromonitoring system (Inomed, Germany) was used to perform the FN free running electromyography (EMG), triggered compound muscle action potentials (CMAP) and brainstem auditory evoked potentials (BAEP). Data was collected prospectively, and included the minimal stimulus intensity (mA), electromyographic response (mV), the proximal-to-distal ratio of the stimulation threshold and the "A-train time" on free running facial EMG (sec). Facial nerve assessment was done by House&Brackmann grading system criteria before surgery, after the oper-

ative procedure and after 2 weeks. All patients had a good FN function (grade I or II House-Brackmann) before surgery.

**Results:** Four patients (80%) had a good FN function first day after surgery, expressed by House-Brackmanngrade I or II. All these patients had a low stimulation threshold below 0,05 mA, a proximal to distal stimulation ratio equal to 1,0 and an A-train time below 5 seconds. One patient had a House-Brackmann grade V FN function, although the nerve anatomical continuity was preserved during surgery, but with the increase of the stimulation threshold from 0,05 mA to 0,7 mA at the end of surgery, and a train time more than 5 seconds (6,8 sec).

**Conclusions:** The intraoperative neuromonitoring of the FN allows a more efficient CP angle tumor removal with a good preservation of the FN function. Additionally, the direct nerve stimulation parameters and the overall train time on free running EMG can predict the FN outcome with useful accuracy.

**Keywords**: facial nerve, palsy, intraoperative, neuromonitoring, EMG, CP Angle, House-Brackmann.

## THE VARICOCELE'S IMPACT OVER THE MASCULINE FERTILITY

**Popa Gr.**

*Academic adviser:* Plesca E., M.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Varicocele represents a pathology of the testicular vein, spread mostly on the left side (80-90 percent), which may lead to severe disturbances of the metabolism at the testicle level and specifically the spermatozoa' impaired synthesis.

**Purpose and Objectives:** This research is done to relieve and to correlate varicocele with life, causes and complications which may be associated with this pathology and with the impact over the fertility.

**Material and Methods:** It is done a retrospective research of all in-patients with varicocele from The "Sfinta Treime" Hospital and Children's Hospital nr.3 from Chisinau between 2011 and 2012. Altogether have been examinated 20 patients between the age group of 13-21.

**Results:** The incidence of the varicocele in young people and adults is of 15-20 percent. In about 90 percent of cases it is placed on the left side and extremelly rare on the right side or bilateral. The varicocele is considered to be the main cause of infertility in 40 percent of cases. The varicocele's apparition may have several different causes, and the main of these are the following: 1) Defects or valveless all over the testicular vein; 2) Anatomical features of the left testicular vein; 3) The retrograde raise of pressure in the left renal vein due to its compression between the superior mesenteric artery and aorta.

**Conclusion:** The varicocele is not a pathology which requiring emergency intervention. However in time treatment is primordial, otherwise it leads to severe disturbances in the process of spermatozoa production which leads to infertility. It was proved that after curing this pathology all sperm parameters were improved.

**Key words:** varicocele, infertility.

## SURGICAL TREATMENT OF INGUINAL HERNIA

**Strisca Gh., Ragulin A.**

*Academic adviser:* Isac I., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Incidence of inguinal hernia rises day by day. Causes of this problem are multiple, and exceed the limits of this work.

**Aim**: Study of surgical treatment of inguinal hernia in admitted patients of surgical clinic and municipal clinical hospital Nr.1 and to determine the most commonly used method.

**Methods and materials**: In achieving of marked aim, we have made a retrospective study in 120 patients group treated in surgical ward of Municipal Clinic Hospital Nr 1 during the 2010 year. All patients had free hernia and were admitted by schedule. In this group were enrolled 88 men and 32 women, with average age 58 years.

Patients with hernia on right side were 55(47%), left side hernia 62(51%) and bilateral hernias 3(2%). Under local anesthesia were treated 92 patients, spinal anesthesia 19 patients and general intravenous anesthesia 9 patients.

Preoperative period in 113 cases was one day, 7 patients were admitted in the day of surgery.

**Results**: On the study group was used the following methods of inguinal channel plasty:

By Spasocucotchi method were treated 16 patients; By Kimbarovski method were treated 7 patients; By Bassini method were treated 12 patients; By Postemski method were treated 6 patients; By synthetic mesh method were treated 79 patients.

Synthetic mesh plasty were performed by no-tension method, according to Lichtenstein technique. Synthetic mesh was applied retro funicular with an incision in upper angle and formation of an opening for spermatic cord.

In postoperative period 25% in patients with synthetic mesh plasty had discomfort and foreign body sensation, 2% needed analgesics due to persistent pain. Moderate pain in the day of discharge presented 10% of patients. In patients without a mesh 15% of cases experienced testicular edema on the surgery side, which resolved by itself in 4-5$^{th}$ day. Usually patients who had surgery with synthetic mesh were discharged 2-3 days before others who had surgery by traditional methods.

**Conclusions**:

1. Traditional methods of hernioplasty had complicated and long lasting postoperative healing.
2. Surgical treatment of inguinal hernia with synthetic mesh represents a modern option and very effective due to removal of local tension cause of relapse.
3. It is necessary to study evolution of synthetic mesh surgery patients from distance to appreciate it influences on the integrity of spermatic cord.

**Key words**: inguinal hernia, surgical treatment, synthetic mesh.

## EFFICACY OF PROFLOSIN® IN CONSERVATIVE MANAGEMENT OF URETERAL STONES

**Banov P.**

*Academic adviser:* Ceban E., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Medical expulsion therapy is a first – line for treatment of small ureteral calculi. Tamsulosin is the studied drug, but data received regarding its effectiveness are controversial and its administration is discussible. We aimed to assess the effect of tamsulosin as adjuvant therapy for ureteral calculi.

**Material and Methods**: There were 64 patients examined with primary and recurrent ureterolithiasis. The presence of ureterolithiasis was assessed by ultrasound and/or radiological examination of upper urinary tract. Patients were analyzed for age, gender, stone size (>7 mm excluded) and location (side, upper, medium and lower 1/3 of ureter, kidney stones excluded), presence of UTI, chronic concomitant diseases. The patients were randomly divided into two groups – Group I – 44 patients underwent the standard therapy with addition of Proflosin® (Tamsulosin 0,4 mg) Berlin-Chemie/Menarini once a day, and 20 patients (Group II) – standard therapy only. Patients were offered a closely monitored trial for spontaneous stone passage in 4-week period prior to definitive therapy. The stone expulsion rate, VAS score and number of colic attacks, time of stone elimination and possible side effects of medication were observed.

**Results:** All patients completed the study and none was excluded due to side effects. No significant differences were found between the groups for age, gender, stone size and location. Mean patient age was 45±6,8 years. There were 26 females and 38 males. The stone-free rate was 88,6% in Group I (39/44), compared with 70,0% (14/20) in Group II. Mean of colic attacks was 2,6±0,3 in Group I compared with 7,2±0,8 in Group II ($p>0,001$), and VAS score was 4 and 7 in Group I and II respectively. A mean stone expulsion time of 8,2 and 14,5 days was recorded for Group I and II respectively, and this difference was statistically significant ($p<0,001$).

**Conclusions:** The adjunction of tamsulosin for conservative management of ureteral calculi decrease the time of stone expulsion, number of colic attacks and amount of analgesics. The Proflosin® demonstrated no clinically significant adverse effects, while proving to be a safe and effective treatment option.

**Keywords:** tamsulosin, ureteral stones, expulsion therapy, Proflosin®.

## ROLE OF α-BLOCKERS AS ADJUNCTIVE THERAPY FOLOWING SCHOK-WAVE LITOTRIPSY OF RENAL CALCULI

**Marinov A., Banov P.**

*Academic adviser:* Ceban E., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** It was demonstrated the effectiveness of the α-blockers for medical expulsion therapy in urolithyasis. We aimed to assess the effect of Tamsulosin adjunctive therapy following ESWL for renal calculi.

**Methods:** In prospective study were included 49 patients who underwent ESWL therapy for renal stones (>1,5cm) from May 2011 to 2012. Patients were randomized into two groups. Group I (tamsulosin group) – 29 patients received standard therapy + Proflosin® (Berlin-Chemie/Menarini) 0,4 mg once a day, Group II (control group) – 20 patients received standard therapy only. Patients were evaluated for stone expulsion, colic attacks, amount of analgesics and side-effects.

**Results:** The groups were comparable for age, gender and stone size. Mean patients' age was 48,3±13 years (Mean±SD). There were 25 females and 24 males. Mean stone size was 1,56±0,14 cm (Mean±SD). There was no significant difference between the groups regarding stone expulsion rates, in Group I it was 93,1% (27/29) and in Group II – 90,0% (18/20). The mean expulsion time (Mean±SE) in Group I (5,2±0,8 days) was shorter than in Group II (7,8±1,0 day), and this difference was statistically significant

($p<0,05$). Both number of colic episodes and analgesics dosage were significantly lower with Tamsulosin as compared to control group. Steinstrasse was encountered in 6,1% (3/49) of patients with no significant difference between groups. The 31,0% (9/29) of patients in tamsulosin group experienced side effects related to postural hypotension. One patient in the Tamsulosin group reported ejaculatory complaints. No patient in Group I was not interrupted the therapy because of side–effects.

**Conclusions:** Adjunction of Proflosin® after the ESWL for renal calculi decrease the time for stone fragments expulsion, amount of the analgesics and number colic episodes. The side-effects of Proflosin® demonstrated no clinically significant.

**Keywords:** extracorporeal shock wave lithotripsy, Tamsulosin, expulsion therapy, Proflosin.

## TRANSRECTAL ULTRASOUND GUIDED BIOPSY IN DIAGNOSIS OF PROSTATIC CANCER

**Bradu A.**

*Academic adviser:* Dumbraveanu I., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In nowadays prostate cancer (PC) is an important health problem, because of its high incidence and the increased number of deaths. The possibility of PSA screening and the use of transrectal biopsy of prostate (TRUS -P) decrease the mortality of these disease.

**Objectives:** To evaluate the importance of transrectal biopsy of prostate in diagnosis of prostate cancer in the patients with increased level of PSA (normal level 4 ng/ml) and rectal examination of prostate.

**Material and methods:** From January 2010 to December 2011, in the Republican Clinical Hospital 30 patients suspected of prostate cancer were investigated using standard method of prostate biopsy.

The average age of the patients was 66,1 years (49-77years). We performed 30 prostate biopsy, according the management of classic method (6 fragments from both prostate lobes). If „suspect" zones were detected at TRUS examination (hypoechoic zones), two more punctures were performed in those areas.

**Results:** The general detection rate of PC using transrectal ultrasound guided prostate biopsy was 83,3 % (25 of 30 cases). In 5 (16,6%) patients the conclusion after histological examinations was benign prostatic hyperplasia (BPH).

**Conclusions**: In our opinion, the main indications for prostatic puncture are: PSA level higher than normal and rectal examination with PC suspicion.

**Key words:** transrectal, biopsy, prostate, patients.

## SURGICAL TREATMENT OF STAGHORN CALCULI

**Soloviov L.**

*Academic adviser*: Ceban E., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Urinary stones occur at any age but affects mainly people of reproductive age: in 70% occur in patients of 20-50 years. Staghorn stones are detected more frequently in women (up to 70%).

Staghorn kidney stones occur in 17-40% of all patients with nephrolithiasis and in 6-7% of cases among patients of urological profile. There are many ways to treat staghorn calculi, but open surgery remains the first choice, where are presented large stones, multiple stones and infected ones.

**The aim of the study:**

The aim is to improve results of surgical treatment of patients with staghorn calculi, highlighting the methods and concepts of contemporary surgical treatment of nephrolithiasis.

Scientific Significance. Open surgical treatment of staghorn nephrolithiasis remains a milestone in the treatment of nephrolithiasis. Being an invasive treatment, it is well tolerated by patients with the large stones, complicated and infected one with the failures of other existing methods.

Work Tasks: 1.Study of the pathogeny in staghorn nephrolithiasis. 2. Study of the existing methods and types of surgical treatment of staghorn calculi. 3. Examination of the own results in the study of patients with staghorn calculi.

**Material and methods:** The study was conducted between the years 2009 - 2011, the urology clinic of Clinical Hospital, there were 13 patients with staghorn nephrolithiasis performing nephrolithotomies. Age of patients ranged from 23 to 73 years, average age was 46.13 years. The study group allocation of patients according to sex was 4 (33.3%) males and 9(66.7%)-women. Roentgh-en-negative stones was 1 (7.7%) and X-ray-positive patients 12 (92.3%). According to kidney damage, have been assigned: Right 4 (30.7%), the left seven (53.8%), bilateral 2 patients (15.3%). The relative sizes of the stones ranged from 3 to 7 cm, with an average of 3.44 ± 0.9 cm. Multiple stones were present in 3 (20.3%) patients and unique 10 (77%).

In all patients undergoing surgery of staghorn nephrolithiasis was present chronic pyelonephritis on the affected side, the phase of overheating - 2 (15.3%) in remission - 3 (23.0%), the latent phase - 8(61.7 %) cases.

The group of patients described above underwent surgery: the anatrofic nephrolithotomy with refrigeration in 1 (7.7%) cases, the pielonephrolithotomy in 5 (38.5%) cases, radial nephrolithotomy with clamping the vascular foot in 3 (23.0%) cases, calicolithotomy - in 1 (7.7%) cases and nephrolithotomy without vascular clamping in 3 (23.0%). Clamping the renal artery with kidney refrigeration was used in 1 (7.7%) cases. Clamping the vascular foot (artery + vein) - 3 (23.0%) cases.

**Conclusions:** With bleeding and trauma and at the same time radical surgical methods remains the basic treatment of Staghorn Nephrolithiasis. Setting correct indications and patient selection based on pre-and intraoperative data storage, nephrolithotomy cause results are optimal for treatment of severe and complicated staghorn nephrolithiasis.

Classical surgery is currently a backup method, useful in complex cases where less aggressive alternative therapies have failed or could not be used.

## CORRECTION OF POST-ECHINOCOCCECTOMY RESIDUAL CAVITIES IN HEPATIC HYDATIDOSIS IN CHILDREN

**Negru I., Dogotari N.**

*Academic adviser:* Babuci S., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Correction of residual cavities is one of the most controversial issues in the surgery of the hepatic hydatid cyst in children. A great array of surgical technologies confirms that none of the proposed methods is "ideal" in resolving residual cavity in hepatic hydatidosis in children.

The purpose of the work was to concretize morphological peculiarities in the recurrent massive hydatid cyst in children with optimization of the method of capitonage used in post-echinococcectomy correction of the residual cavities in these clinical evolutionary forms of the disease.

**Material and Methods:** The study is based on a complex clinical and morphological analysis of 29 children aged 2 - 17 years treated surgically in the Department of Surgery of the National Scientific-Practical Centre of Pediatric Surgery "Natalia Gheorghiu" of SRIMCHC during 2008 - 2011 with massive hepatic hydatid cyst (n=16), complicated forms (n=8) and relapsing hydatidosis (n=5). Gender distribution of parasitic lesions showed prevailing affection in boys - 21 (%) versus females - 8 cases (%). Topographic study of hydatidosis revealed a predominant distribution in the right lobe of the liver in 17 (%) cases, left – in 8 (36%) cases, a bilateral affection being recorded in 4 cases.

Imaging examination results (abdominal echography, CT, liver scintigraphy) were confronted with the pathomorphological examination data, which included studies of the hydatid larval cyst and the determination of changes of the affected organ.

We used plastic material "LitAr" to seal the residual cavity subjected to capitonage which is a collagen-hydroxyapatite preparation.The preparation was used concurrently with the capitonage of the residual cavities, filling 2/3 of the volume of these spaces.

**Results**: Use of this plastic material has allowed us to obtain a stable hemostasis and biliary stasis in post-echinococcectomy residual cavities in all the cases. Time necessary for adequate sealing of residual cavities was 20-25 days. This time proved to be sufficient for triggering local reparative phenomena. Adverse reactions were recorded in 3cases which manifested by: increase of body temperature, which were subsequently ceased.

**Conclusions:** The obtained results allow us to conclude that the method of staged capitonage "forward and back" in combination with filling of the residual cavities with plastic "Lit Ar" allow to improve the results of surgical treatment in hepatic hydatidosis in children.

**Key words:** hepatic hydatidosis, surgical treatment.

## CORRECTION REACTION OF LIPID PEROXIDATION IN PREGNANT WOMEN WITH PYELONEPHRITIS

**Lukyanova Y., Vlasov I., Balchenkova P.**

*Academic adviser:* Peshev L., M.D., Ph.D., Professor, Lyalichkina N., M.D., Ph.D., Associate Professor, Saransk State Medical University "N.P. Ogareva", Saransk, Russian Federation

**Introduction:** Pyelonephritis in pregnancy predominates in the structure of renal disease in the period of gestation. The significance of this pathology is caused by a high incidence of pregnant women, often relapsing, purulent, and complicated forms of the disease. The gestational pyelonephritis is a factor in perinatal pathology, maternal and perinatal mortality and the formation of the delayed pathology in the women's urinary tract (I.V. Mikhailov, 2005; M.A. Herraiz et al., 2005; S. Hazhir, 2007).

**Materials:** In our research we have examined 115 pregnant women with gestational pyelonephritis. Among them - 69 pregnant women are with initial acute pyelonephritis in the stage of serous inflammation, 46 - with chronic pyelonephritis in the stage of exacerbation. The control group consisted of 30 women with physiological pregnancy.

Pregnant women with acute pyelonephritis had an increase concentration of plasma MDA by 66.2% ($p \leq 0,05$), compared with pregnant control group, while the increase of this indicator in pregnant with

exacerbation of chronic pyelonephritis was 88.6% ($p \leq 0,05$ ) compared with the level indicator in healthy women. In acute pyelonephritis the erythrocyte MDA increased by 97.0% ($p \leq 0,05$) more, and in exacerbation of chronic pyelonephritis during pregnancy - by 111.2% ($p \leq 0,05$), compared with pregnant control group. In pregnant women with pyelonephritis, which arose only during gestation, blood catalase activity was less, than in healthy ones, by 28.6% ($p \leq 0,01$), in pre-existing pyelonephritis – lower, than in the control group, by 28.9% ( $p \leq 0,01$). Such modulation is due to a profound imbalance in the «lipid peroxidation - antioxidant protection», manifested a significant reduction in total plasma antioxidant activity, which maintains a certain constant level of non-enzymatic lipid peroxidation processes. Obviously, in patients with chronic pyelonephritis there is the depletion of antioxidant activity of plasma that becomes apparent in a significant increase of TBA-defined products in plasma and erythrocytes. This condition of LPO-AOD suggests the reduced resistance, subacute inflammatory process with the lack of defensiveness, a tendency to exacerbations (Yilmaz M.I. et al, 2006; Costa-Hong V. et al, 2009).

By the 3rd day of combined treatment with Essentiale in pregnant women with pyelonephritis there was a tendency to decrease of plasma MDA content by 10,4% ($p> 0,05$) in relation to the initial index, which in absolute terms was 10,09 ± 1,17 mmol / l against the initial 11,26 ± 1,30 mmol / l. Continuing to decline in the course of the therapy, by the end of the treatment plasma MDA levels in this group was 8,90 ± 0,89 mmol / l, which was by 21.0% ($p \leq 0,05$) less than the initial index, but 1.5 times higher than in healthy pregnant women (5,97 ± 0,85 mmol / l). More significantly is that on the 3rd day of treatment of pregnant women with chronic pyelonephritis, erythrocyte MDA decreased and was 28,51 ± 2,34 mmol /, which was by 12.8% ($p> 0.05$) less than the initial index (32.67 ± 3,39 mmol / l). At the end of the treatment the level of erythrocyte MDA decreased even more - by 20.5% ($p \leq 0,05$) - and reached 25,96 ± 2,25 mmol / l, which was still by 67.8 % ($p \leq 0,05$) higher than in healthy pregnant women. Blood catalase activity remained almost the same on the 3rd day of combined treatment with Essentiale of the exacerbation of chronic pyelonephritis and was 2093,78 ± 18,72 nkat / min / l, which was higher than the initial level by only 1.4% ($p> 0.05$ .) At the end of therapy there was a greater (15.7%, $p \leq 0,05$) increase in catalase activity - up to 2391,02 ± 13,42 nkat / min / l, which remained by 17.7% ($p \leq 0,05$) lower than normal index (2902,5 ± 19,5 nkat / min / l)

After 3 sessions of laser therapy of pregnant women with acute pyelonephritis the level of MDA in plasma was reduced to 9,7 ± 0,99 mmol / l, i.e. by 7.3% ($p> 0.05$) vs. the initial level, and in red blood cells – by 7.6% ($p> 0.05$), respectively. At the end of therapy the concentration of malondialdehyde in plasma decreased by 22.0% ($p \leq 0,05$), which was 7,89 ± 0,10 mmol / l. In the red blood cells after the treatment the level of MDA reached 20,74 ± 2,87 mmol / l, which was by 28.8% lower than the initial index ($p \leq 0,05$). Another positive development was the increase in enzyme antioksidoza activity defense: catalase activity on the 3 day of laser treatment had a tendency to increase by 4.9% ($p> 0.05$) - up to 2134,28 ± 182,35 nkat / min / l at initial index 2035,54 ± 191,7 nkat / min / l. At the end of the treatment the marked positive tendency has continued - the content of the enzyme increased by 15.0% ($p \leq 0,05$) compared to the initial level, but remained by 19.4% ($p \leq 0,05$) lower than in healthy pregnant women.

The laser therapy in pregnant women with exacerbation of chronic pyelonephritis led to a significant decrease in plasma MDA levels on the 3rd day of therapy by 14.4% ($p \leq 0,05$). Continous treatment resulted in a decrease of this index from the initial by 28.9% ($p \leq 0,05$), i.e. up to 8,09 ± 0,89 mmol / l. However, after the treatment plasma MDA level in these women was by 35.5% ($p \leq 0,05$) higher than in healthy pregnant women. The dynamics of changes in erythrocyte MDA levels in combination therapy in pregnant women with exacerbation of chronic pyelonephritis was of unidirectional change of plasma MDA. By the 3rd day of the treatment the reduction by 12.4% ($p \leq 0,05$) of this secondary lipid peroxidation products in examined pregnant women was reported. However, by the end of the treatment there was a reduction of erythrocyte MDA levels by 31.4% ($p \leq 0,05$) with respect to the initial index and its value was 22,22 ± 3,89 mmol / l, which was higher than in the control group by 43, 6% ($p \leq 0,05$).

However, there were no changes in catalase activity of blood on the 3rd day of the treatment with IKLI patients with chronic pyelonephritis. By the end of the therapy, the activity of this enzyme in the blood increased by 10.7% ($p \leq 0,05$) in comparison with its initial activity, but the level of catalase - 2273,73 ± 181,23 nkat / min / l - remained by 21 , 4% ($p \leq 0,05$) lower than normal index.

Thus, the addition of basic therapy with Essentiale and infrared laser light helps to eliminate endotoxemia by reducing lipid peroxidation and improving antioxidant protection.

## STATISTICAL AND MEDICINE PECULIARITIES OF SUPERFICIAL FOREIGN BODY AND CORNEAL ABRASION

**Bobeica Maria, Iacubițchii Vitalie, Vladicescu Cristina**

*Academic adviser:* Bendelic Eugen, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Traumatic corneal disorders manifested by multiple types and forms - erosion, corneal foreign body, traumatic keratitis etc. The incidence of superficial injuries represented by foreign bodies (FB) and corneal abrasions (A) is 1.57% per year. Minor eye trauma is an important public health problem that can be prevented, the economic impact caused by the absence of subject (youth and adults under 30 years) from work for a mean period of two days.

**Purpose and Objectives:** The study aims to complex research of statistical and medicine particulars of corneal abrasions and superficial foreign bodies to patients who have addressed the Admission Department of Republican Clinical Hospital during the years 2009 - 2011 by determining the frequency, evaluation of clinical symptoms and study the peculiarities of treatment at patients with superficial foreign bodies and corneal abrasions.

**Materials and methods:** The study is retrospective, single center, descriptive; it includes a group of 332 patients with superficial foreign bodies and corneal abrasions, who addressed the Admission Department of Republican Clinical Hospital (RCH) for medical care during the years 2009 to 2011. The data used were collected from the records of RCH's Admission Department and included: age, sex, complaints, the origin of corneal FB / A, addressing time, the methods of diagnosis and treatment.

**Results:** According to the study, 94% men are affected because of their specific activity: work in metallurgy, as a locksmith, mechanic and stoneworkers. Typical age for corneal injury caused by superficial foreign bodies and abrasions is 21-30 years (41.27%) and 31-40 years (25.60%), which include a higher morbidity among people of working age. Corneal lesions were due to action of etiological factors represented by metallic foreign bodies (76.12%), leading to symptoms: foreign body sensation (91.56%), pain (86.67%), lacrimation (73.33 %) and photophobia (55.56%). Treatment included removal of foreign body by preventive management of local anesthetic (Tetracaine sol. 1% - 88.55%), then distill eye drops of Ciprofloxacin 0.3% (broad-spectrum, including antipseudomonal action), ung. Tetracycline 1% (74.40%) and gel Oftagel (6.93%). The recommendation requires the use of eye protection in the future.

**Conclusions:** Due to prevailing affectation of men of working age (age 21-40 years old) is required eye protection compliance in their work.

**Key words:** corneal foreign body, corneal abrasion, statistical and medicine particulars.

# OVARIAN TUMORS AT MALIGNITY LIMIT, PECULIARITIES OF DIAGNOSTIC AND TREATMENT

**Vârlan Mariana**

*Academic adviser:* Tudor Rotaru, M.D., Lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The ovarian tumors at the limit of malignity are situated at the boundary between the benign cystadenomas and ovarian invasive cystadenocarcinomas. They present morphological peculiarities of malignity but without invasion of stroma. For the first time they were described by Taylor in 1929, covering 10-20% of epithelial ovarian tumors, being also named semi-malign tumors, carcinomas with decreased malign potential, malignities at limit or Borderline tumors.

**Aims:** The assessment of the main diagnostic and treatment aspects diagnosed in the female patients with ovarian tumors at malignity level in serous and mucinous types.

**Materials and methods:** The study was performed in 69 patients with ovarian tumors at malignity level at the Oncologic Institute from the Republic of Moldova in the period 2001-2011.

It's a prospective and retrospective analysis of the primary documentation. The patients included in the study have been divided, according to the histological type, in those with ovarian tumors at the limit of serous malignity (46 patients) and mucinous malignity (23 patients).

All the patients underwent primary surgical treatment within the Public Medico-Sanitary Institution - Oncological Institute. As to the post-operation chemotherapy, all the patients with advanced diseases beginning from the IC stage underwent a special platinum-based treatment

**Results:** 69 patients were included in this study within 16 and 73 years old, with the average diagnostic age of 41,1 years old. 42 (60.1%) from these patients were in the 1$^{st}$ stage of the disease, 18 (26.1%) were at the 2$^{nd}$ stage, 3 (4.3%) were in the 3$^{rd}$ stage and 6 (8.7%) were in the 4$^{th}$ stage As to the pre-operation investigations, the most informative were the ultrasonography and computed tomography, which have determined the presence of tumor. The Cancer antigen 125 (CA-125) was at a normal level in 85% from the cases.

All the patients underwent primary surgical treatment. Having studied the operation protocols, the following results were obtained: the tumor was localized at the level of ovaries at 59 patients (85.5%), the spreading outside ovaries was found out at 10 patients (14.5%), at the level of the peritoneum – at 6 patients (8.7%), of the epiploon – at 2 patients (2.3%) and at the serous of the abdominopelvic viscera at 2 patients (2.3%).

58 patients underwent post-operation chemotherapeutic treatment.

**Conclusions:** The serous ovarian tumors are more frequent than the mucinous ovarian tumors at the limit of malignity. The most affected is the reproductive period within 31 and 40 years old, with the average diagnostic age of 41,1 years old.

The most informative methods of the laboratory diagnosis were the ultrasonography and computed tomography. The cancer antigen 125 (CA-125) was at a normal level in 85 % from the cases.

The ovarian tumors at the limit of malignity can extend outside the ovaries, too, (at the level of the peritoneum, epiploon, and at the serous of the abdominopelvic viscera)

The chemotherapic treatment is applied post-oprative for reducing the rate of the tumour recurrence.

## NEURONAVIGATION IN MOLDOVA. ULTRASOUND-GUIDED NEUROSURGERY

**Peciul Andrei, Dogaru-Peciul Constanta**

*Academic adviser:* Zapuhlih Grigore, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Recent advances in probe technology, image fusion, 3D techniques have provided significant improvements to image quality. By integrating neuronavigation and 2D ultrasound it is possible to create 3D US volumes and to navigate directly based on 3D US data.

**Methods:** We have used a system (SonoWand Invite) where the 3D US volume is reconstructed from 100–200 2D images, created by making a move or tilt over the area of interest with a precalibrated and tracked US probe. The optical tracking system reads the position of the patient reference frame and the US probe. In addition to tissue images it is also possible to make images of vessels (US angiography) based on recordings of the power Doppler signals from the blood stream.

In our practice the main applications of intraoperative ultrasound (iUS) were: neurooncology (tumour localization, tumour resection control - corpus callosum glioblastoma, third ventricular craniopharyngioma, occipital anaplastic astrocytoma, recidivant vestibular schwannoma); vascular (ACoA aneurysm, AVM Spetzler-Martin grade 4), spontaneous intracerebral hemorrhages.

Lesion localization and planning of optimal approach: once the craniotomy has been performed, the iUS can be used to localise the lesion and neuroanatomical structures such as the ventricle, falx, main vessels and to assess the brain shift (responsible factors - gravity, brain swelling, loss of CSF, tumour debulking). At the end of the procedure, once the dura is closed but before bone replacement, a quick iUS scan facilitates assessment of early hemorrhage or hydrocephalus.

Resection control: in lesions with clear margins before resection, iUS can be used to check if the resection is complete.

Vascular structures: power Angio provides information on blood flow and vasospasm in AVM and aneurysm surgery. This allows real time evidence of vessel patency or flow disruption following clipping, and facilitates identification of an aneurysm within a haematoma.

**Results:** Using neuronavigation system with integrated US in our practice helps us to optimise neurosurgical treatment of the: supra- and infratentorial tumours, AVM, aneurisms, spontaneous intracerebral hemorrhages.

**Conclusion:** iUS provides low cost real time imaging that is easy to use and has a rapid learning curve. With the future development of ultrasound technology intra-operative 3D US will be used on a daily basis in most neurosurgical departments.

**Keywords**: Intra-operative imaging, 3D Ultrasound, Brain Shift, Neuronavigation, Neurosurgery, Ultrasound.

## HEALTH LITERACY AND BELIEFS ABOUT MEDICINES IN AN OBSTETRIC POPULATION AT CORK UNIVERSITY MATERNITY HOSPITAL (CUMH)

**Duggan Lydia**

*Academic adviser:* Sahm Laura, M.D. University College Cork, Cork, Ireland

**Aims:** The goal of this project was to assess the impact of demographic factors on both health literacy and medication beliefs and to determine the relationship between health literacy and beliefs about medicines

**Methods:** A randomised survey was carried out at Cork University Maternity Hospital (CUMH) antenatal clinic. Health literacy was measured using the Rapid Estimate of Adult Literacy in Medicine (REALM) and the general section of the Beliefs about Medicines Questionnaire (BMQ) was used to assess medication views.

**Results:** The total sample size was 404. 84.65% (n=342) had adequate health literacy and the remaining 15.35% (n=62) showed marginal health literacy. Degree and postgraduate students were significantly more health literate than other groups as were the 31-35 and 36-40 groups ($p<0.05$). Professionals, managerial/technical and health professionals had significantly higher REALM scores.

BMQ scores showed that the >40 group and the 31-35 group were significantly more positive about certain statements. Post leaving cert, degree and postgraduate groups had significantly more positive views about medicines than secondary, junior and leaving cert groups. Healthcare professionals were significantly more positive about medicines than other groups.

In five of the BMQ statements a significant link was found between marginal health literacy and negative views about medicines.

**Conclusions:** There is a significant association between the demographic factors of age, educational attainment and employment category on both health literacy and medication beliefs. Marginal health literacy is significantly associated with a more negative perception of medicines and medical professionals.

## THE ROLE OF INFECTION IN PRETERM PREMATURE RUPTURE OF MEMBRANES

**Sclifos Natalia, Bursacovschi Natalia**

*Academic adviser:* Rotaru Marin, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

**Introduction:** Preterm premature rupture of membranes (PPROM) is rupture of membranes prior to 37 weeks' gestation before the onset of labor. 85 % of neonatal morbidity and mortality is a result of prematurity. PPROM is associated with 30-40% of preterm deliveries and is the leading identifiable cause of preterm delivery. When PPROM occurs remote from term, significant risks of morbidity and mortality are present for both the fetus and the mother.

**Objective:** The aim of the study was to evaluate the role of infection in preterm premature rupture of membranes.

**Materials and methods:** The clinical study was based on retrospective analysis of 417 medical records of patients who delivered preterm in the second Obstetric Department of the Research Institute of Mother and Child's Health Care during one year (1.01-31.12.2010). Historical data, complications of pregnancy, birth and postpartum period and newborn status were analyzed in all patients included in the study. PPROM diagnosis was established based on clinical examination, laboratory and instrumental data.

**Results and discussions:** Preterm premature rupture of membranes (PPROM) occurred in 42 % pregnancies with the gestational age < 36 weeks and 6 days. The incidence correlates with the literature data 30-56 %. In our study vaginal infection (mainly nonspecific) was detected in 19, 86% of cases (according to clinical examination, bacterioscopic and bacteriological examination). According to the studied medical records, choriodecidual infection was diagnosed in 8.58% of cases. Pathomorphological examination of placenta and annexes revealed leukocyte parietal chorioamnionitis, phlebitis, and umbilical funiculitis. 65% of pregnant women had a latency period > 24 hours. Some authors insist on the fact

that prolongation of the latency period increases the risk of infectious diseases, others believe that antibiotics reduce the risk of infection to the minimum. According to the studied medical records the major part of patients with prolonged latency period received antibiotics as recommended by standardized clinical protocol. The literature data show that the main danger of prolonged latency period represents intrauterine infection of the fetus. 31, 2% of premature newborns had the risk to develop an intrauterine infection, 21.8% of them developed unilateral or bilateral congenital pneumonia, 35.5% were subject to antibacterial therapy. Congenital pneumonia, neonatal sepsis and respiratory distress of the newborn are the major causes of perinatal morbidity and mortality.

**Conclusions:**

1. PPROM occurred in 42 % of pregnancies with the gestational age < 36 weeks and 6 days which correlates with the literature data. This means that every second the preterm birth is due to the preterm rupture of membranes.
2. Infection represents the leading cause of PPROM (vaginal infection was detected in 19, 86 % of cases, choriodecidual infection in 8.58% of cases).

**Key words:** preterm premature rupture of membranes, latency period, vaginal and choriodecidual infection.

## SURGICAL TREATMENT OF VAGINAL PROLAPSE

**Iliadi-Tulbure Corina, Diug Valentina**

*Academic adviser:* Rotaru Marin, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Vaginal prolapse is characterized by a portion of the vaginal canal protruding from the opening of the vagina. The type of treatment depends on the cause and severity of the prolapse.

**Materials and methods:** The study was based on 117 cases. Medical history, gynecological examination, bladder function test and pelvic floor strength, ultrasound, cystourethroscopy were performed.

**Results:** Some types of vaginal prolapse were appreciated: cystocele in 28 cases (23,9%), rectocele in 12 cases (10,3%), uterine prolapse (75 cases – 64,1%) and vaginal vault prolapse after hysterectomy in 2 cases (1,7%). Factors that caused vaginal prolapse were: multiple births (80,4%), menopause (17,9%), hysterectomy (1,7%), advanced age in 47,9%. The following symptoms associated with vaginal prolapse were established: pressure in the vagina or pelvis (98 cases – 83,8%), pain that increases during long periods of standing (112 cases – 95,7%), enlarged vaginal opening (87 cases – 74,4%), difficulty of emptying bladder (48 cases – 41,0%), urinary stress incontinence (38 cases – 32,5%), constipation (17 cases – 14,5%), dyspareunia (72 cases – 61,5%). The symptoms affected sexual function in 79 cases (67,5%). Surgery was usually performed under spinal epidural anesthesia. Women`s hospitalization required approximately 3-5 days. Patients were discharged from the hospital in a satisfactory condition. Long-term results were good. Many patients followed an estrogen replacement therapy, which helped strengthen and maintain muscles in the vagina.

**Conclusion:** Surgery is the treatment of option for most sexually active women who develop a vaginal prolapse, due to the fact that the procedure is usually effective.

**Key words:** Vaginal prolapse, uterine prolapse, pelvic floor, surgical treatment.

## CONVERSION TO HYSTERECTOMY DURING ORGAN-PRESERVING OPERATION FOR UTERINE FIBROIDS

**Madan Diana, Misina Liudmila, Misina Ana**

*Academic adviser:* Gladun Eugen, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova.

**Introduction:** Uterine fibroids are the most common benign tumors in the female reproductive tract during the reproductive period. Among the options of the treatment spectrum, myomectomy is always considered one of the best choices in the management of women with symptomatic uterine fibroids who wish to preserve future fertility. The risk factors for conversion to subtotal hysterectomy during organ-preserving operations are under evaluation.

**The aim:** The goal of this study was to demonstrate a retrospective review of incidence and indications to conversion to hysterectomy during organ-preserving operation for uterine myomas.

**Materials and methods:** 341 patients were subjected to organ-preserving operations for uterine myomas from 1994 to 2011. The mean age was 33.2±0.3 (it ranged from 17 to 53 years). The myoma size was 11.5±0.2 (from 4 to 24 weeks). Indications for surgical treatment represented: metrorrhagies 31,8% (n=109), pain 32,9% (n=112), progressive myoma growth 19,7% (n=67). Sterility 12,6% (n=43), preparing to IVF 0,9% (n=3).

**Results:** The number of enucleated fibroids ranged from 1 to 26 (mean 2.6±0.2). Conversion to subtotal hysterectomy was done in 3 cases (0,9%), because of diffuse leiomiomatosis. There was no conversion because of surgical techniques.

**Conclusions:** This study demonstrates that diffuse leiomiomatosis is the main indication for subtotal hysterectomy during organ-preserving operations for uterine fibroids.

**Key words:** uterine fibroids, leiomiomatosis.

## PRENATAL RUPTURE OF MEMBRANES. PERINATAL OUTCOMES, ETIOLOGICAL FACTORS, MODERN METHODS

**Berdisugirova S., Amaniyaz S.**

*Academic adviser:* Karimova B., M.D., Ph.D. Associate Professor, West Kazakhstan State Medical University "Marat Ospanov", Aktobe, Kazakhstan

**Introduction:** Prenatal rupture of membranes is currently the most common disease of pregnancy and it is dangerous for both mother and fetus. The three main causes of neonatal mortality associated with prenatal rupture of membranes are the following: prematurity, sepsis, and pulmonary hypoplasia. The risk for the mother is associated primarily with chorioamnionitis.

**Purpose:** To evaluate the perinatal outcome, etiological factors in prenatal rupture of membranes and effectiveness of modern management.

**Materials:** We performed a retrospective analysis of 65 medical health records from the Regional Perinatal Center in the city of Aktobe. Age ranged from 18 to 42 years.

DIOV reasons were the following: a history of chronic endometritis for 3-6 years -19 women (19%), due to the previous prenatal rupture of membranes at delivery - 6 Women, 6 (%) due to an abortion - 48 women (48%), due to genital infections - 17 women (17%), due to extragenital disease - 10 (10%).

**Results:** The analysis showed that the choice of expectant management of the prenatal rupture of membranes at any stage of gestation has a positive effect on the pregnancy outcome for both mother and fetus than active management of labor. Of the 67 infants, 14 (20.8%) were born at 33-37 weeks of gestation weighing 999-2500 grams, 53 (79.1%) were born at 37-41 weeks of gestation weighing 2500-4200 g, 91% of newborns were transferred to the Department of infants, 86% had spontaneous labor.

**Key words:** prenatal rupture of membranes, perinatal outcomes, extragenital diseases, chorioamnionitis, prematurity.

## EFFECTS OF SEXUALLY TRANSMITTED DISEASES ON PERINATAL MORTALITY AT AKTOBE REGIONAL PERINATAL CENTER

**Kadrushev M., Kabylova K., Sarbaev N., Serikbayeva A., Belyaev M.**

*Academic adviser:* Sakieva K., M.D., Ph.D., Associate Professor, West Kazakhstan State Medical University "Marat Ospanov", Aktobe, Kazakhstan

Problems of perinatal pathology at this stage are very relevant and the most difficult in medicine throughout the world. The stable levels of neonatal morbidity and mortality represent a relevant proof.

According to WHO, 40-60% of children who die in the first year of life accounts for the first month of life, and the total number of children who died before 1 month. 70-75% of children die in early neonatal period. Stillbirths in the perinatal mortality rate ranges from 55 to 65%. According to the literature, one-third of perinatal deaths occur in intrauterine infection, and its prevalence ranges from 1:3000 to 1:100.

Thus, intrauterine infection is a serious health problem of the fetus and newborn. The problem urges to identify the impact of STDs on perinatal morbidity and mortality. Therefore, we conducted a retrospective analysis of the deliveries histories of women with genital infection and neonatal development histories within the period of 2011 from the regional perinatal center of Aktobe city.

Thus, based on our research we found that STD is the most common cause of miscarriage, leading to a high percentage of complications in pregnancy, intrauterine fetal and neonatal lesions.

**Key words:** perinatal deaths, intrauterine infection, sexually transmitted diseases, miscarriage, and complications of pregnancy.

## PARASITIC ABDOMINAL LEIOMYOMAS

**Misina Liudmila, Misina Ana**

*Academic adviser:* Gladun Eugen, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Parasitic leiomyomas (defined as extrauterine seeding of leiomyoma) is still a rare disorder; the literature is limited to case reports. Extrauterine leiomyomas present a greater diagnostic challenge.

**Aim**: Retrospective chart review of all patients found parasitic leiomyomas.

**Materials and Methods:** Three patients with parasitic leiomyomas, with the mean age 44.6 ± 3.4 years (range from 38 to 49) were selected in the study. Two patients had a history of abdominal subtotal hysterectomy for uterine fibroids. Physical examination, abdominal and transvaginal US and CT scan were used for diagnosis.

**Results:** Clinical manifestations of parasitic leiomyomas included: chronic abdominal pain and palpable mass (n=2) and in one case – incidentally parasitic leiomyomas. During the surgery in all cases the mass (size from 1 to 9 cm) was separated from the uterus and adhered to the peritoneum (n=2) and small bowel mesentery (n=1). Multiple parasitic myomas were detected in two cases. Mass removal (n=2) and total abdominal hysterectomy + mass removal (n=1) were performed without complications. The histopathological findings of the resected three tumors revealed leiomyomas.

**Conclusions:** Even though the parasitic leiomyoma is uncommon, it should be included in the differential diagnosis of abdominal mass especially in patients with a history of uterine fibroids surgery. Generally two types of parasitic leiomyomas are described: spontaneous and "iatrogenic". Surgery is still a method of choice in the treatment strategy of parasitic leiomyomas.

**Key words:** uterine fibroids, parasitic leiomyomas, treatment.

## FUNCTIONAL AND ANATOMICAL RESULTS AFTER CREATION OF A NEOVAGINA BY DAVYDOV'S PROCEDURE IN PATIENTS WITH MAYER-ROKITANSKY-KÜSTER-HAUSER SYNDROME

**Misina Liudmila, Misina Ana**

*Academic adviser:* Gladun Eugen, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Several surgical techniques have been described for the treatment of patients with vaginal agenesis - Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome.

**Aim**: To investigate the anatomical and functional outcome of Davydovs procedure in patients with MRKH syndrome.

**Materials and Methods:** A total of 35 patients with MRKH syndrome were operated using the Davydov procedure (peritoneal vaginoplasty) in our unit. Mean age comprised 22.7 ± 0.6 (range – from 17 to 34). The patients then had to use a mould or a vaginal dilatator from 10 POD. Functional results and sexuality were evaluated using the Female Sexual Function Index (FSFI).

**Results:** Three intra-operative rectum and two urinary bladder injuries were repaired without sequelae. Postoperative complications were *zero*. No patient was lost to follow-up. The anatomical results were considered to be satisfactory (>6 cm) in 31/35 (88.6%) patients: the mean vaginal length was 7.9 ±0.2 cm. According to FSFI: >30 (n=14, 40%), 24-29 (n=18, 51.4%) and <23 (n=3,8.6%).

**Conclusions:** Davydovs procedure may be considered a good option for the surgical treatment of women presenting vaginal agenesis. This technique offers advantages such as: short operating time and hospital stay, functional vaginal length and sexual satisfaction.

**Key Words:** vaginal agenesis, vaginoplasty.

## PELVIC ECHINOCOCCOSIS

**Madan Diana, Misina Liudmila, Misina Ana**

*Academic adviser:* Gladun Eugen, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Pelvic hydatid cysts (PHC) are rare and only a few sporadic cases have been reported.

**Aim**: The purpose of this study was to describe the cases of primary and secondary PHC in female patients.

**Materials and Methods:** Patients diagnosed with PHC over a 10 year period were identified from the comprehensive surgical database of our institution. The age, symptoms, previous surgeries, initial diagnosis, diagnostic modalities, current operation, and recurrences were surveyed.

**Results:** There were three patients with the mean age of 20.7 ± 5.6 years (range from 14 to 32). All patients had no history of surgery for hydatid disease. They presented chronic pelvic pain and on physical examination had a pelvic mass. The diagnosis of PHC was suspected preoperatively in one patient. All patients were treated surgically via Pfannenstiel incision. The PHC location was the uterus (n=2) and ovary (n=1). Unroofing (or partial cystectomy) was performed in 2 patients and complete cystectomy in one. The postoperative course was uneventful in all cases. Chest radiography and abdominal computed tomography did not reveal any other site of hydatid disease involvement (n=2, primary PHC). One patient (secondary PHC) was scheduled in the surgical department for treatment of hepatic cystic echinococcosis.

**Conclusions:** Pelvic hydatid disease is rare and its diagnosis is often difficult preoperatively. Hydatid cyst should always be considered in the differential diagnosis of abdominal-pelvic masses in endemic regions of the world. The mainstay treatment is surgery.

**Key words:** pelvic hydatid cyst, surgery.

## METHOD OF EVALUATION OF VIABILITY OF THE BOWEL WALL

**Voitiv Ya.**

*Academic adviser:* Poliansky I., M.D., Ph.D., Professor, Bukovina State Medical University, Chernovtsy, Ukraine

**Introduction:** Evaluation of bowel wall viability (BWV) - is one of the unsolved problems of abdominal surgery. Determination of circulatory disorders of intestine, identifying areas of necrosis determines to choose the amount of resection, the suture place and their capacity. When using the methods based on visual inspection, the probability of the results to a large extent determines the factors that influence the degree of which it is impossible to assess and make appropriate adjustments. This makes the actual search for new methods that allow to adequately and quickly asses the viability and depth of morpho-functional changes in the intestinal wall.

**The purpose** of the experiment was to investigate the changes in spectral and photoplethysmography information in the development of bowel necrosis, to develop new methods of determining BWV intestinal wall.

**Materials and Methods** 12 rabbits of both sexes, with no obvious signs of disease and with normal values of laboratory tests were included in experiment.

Modeling ischemia of the small intestine was carried out by the original method (certificate of innovative proposal № 69/05), which enables to simulate the projected degree of ischemia.

The degree of ischemia measured by the original technique (patent of Ukraine for utility model №25701), which allows the non-invasive determination of hemoglobin oxygenation of arterial blood.

**Results:** Evaluation of the morphological changes of the bowel wall were carried out by histochemical (Schiff reaction, alkaline phosphatase and nonspecific esterase mucosa of the small intestine) and histological (hematoxylin-eosin staining) study.

**Conclusion:** Informative study of the proposed method showed that the proposed original method of assessment of bowel viability provides rapid quantitative assessment of the degree of oxygenation of the intestinal wall, which is closely correlated with its viability. The method is convenient and easy to use, enabling its wide application in practical surgery. The proposed method of bowel viability involves highly probable, noninvasive assessment of the degree of oxygenation of the intestinal wall, which allows preventing of life-threatening complications in surgical interventions on digestive tract.

**Key words:** bowel wall, viability, oxygenation.

## COGNITIVE STATUS OF YOUNG ADULT PATIENT AFTER ABDOMINAL SURGERY: PRE vs POSTOPERATIVE ASSESSMENT

**Severin Ghenadie, Chesov Ion, Calpajiu Alina, Lozan Ana**

*Academic adviser:* Adrian Belii, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

**Introduction:** Postoperative Cognitive Dysfunction (POCD) is a decline of cognitive function that occurs during the first days or few weeks after the surgery. POCD was mainly studied in elderly patients after major surgery (cardiac and vascular surgery, joint replacement). The prevalence varies from 24% to 79%. There are only few studies concerning POCD in young adult patients. Also, there are no diagnostic criteria for POCD. Goals and objectives: Comparative assessment of pre- and postoperative cognitive performance in young adult patients after intermediate risk abdominal surgery. The ability to memorize the numbers, working with numerical series, coding number-symbol, color stroop effect was particularly appreciated.

**Materials and Methods:** It is a prospective study, being approved by the Ethic Committee. Written informed consent, to participate in the study, was obtained from 17 young adult patients (≥18 years). Patients were admitted to National Scientific and Practical Centre of Emergency Medicine to be subject to abdominal surgery. All patients were assessed pre- and postoperatively using 5 tests:

1. Mini Mental Status (MMS); 2. Digit Span Test (DST); 3. Digit Connection Test (DCT); 4. Digit Symbol Substitution Test (DSST); 5. Reedley Color Stroop Test (RCST).

**Results:** The following results were obtained.

MMS: 28,0 (95CI 26,72–29,28) vs. 28,19 (95CI 26,95–29,42), p=0,92.
DST: 8,75 (95CI 8,15–9,35) vs. 9,13 (95CI 8,23–10,0), p=0,27.
DCT: 35,03 (95CI 28,26–41,80) vs. 30,12 (95CI 24,80–35,43), p=0,0564.
DSST: 37,50 (95CI 32,04–42,96) vs. 39,38 (95CI 33,52–45,23), p=0,18.
RCST: 19,77 (95CI 17,77–21,76) vs. 19,43 (95CI 16,19–22,67), p=0,77.

**Conclusion:** Cognitive status of young adult patients after abdominal surgery is not affected by anesthesia or surgery on the $4^{th}$ – $7^{th}$ day. Some particular aspects of cognitive function (working with numerical series, symbol decoding) seem to be affected by anesthesia or surgery (borderline statistical significance).

**Key words:** cognitive dysfunction, postoperative, young adults, assessment.

## PRACTICE OF TIVA vs VOLATILE GAS ANAESTHESIA AT NATIONAL SCIENTIFIC AND PRACTICAL CENTRE OF EMERGENCY MEDICINE (NSPCEM)

**Ambrosi Tatiana, Cîvîrjic Ivan, Chesov Ion**

*Academic adviser:* Ruslan Baltaga, M.D., Ph.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction: Comparative assessment of** economic impact and patients' outcome between Inhalation vs. Total Intravenous Anesthesia (TIVA) techniques is well debated in literature. In the Republic of Moldova, due to economic issues, the anesthesiologists haven`t used for more than 15 years Inhalational Anesthesia (IA) techniques. One year ago the IA technique of anesthesia was revived at NSPCEM. Due to this fact it was very important to find out if IA had any impact on the quality of health services rendered at NSPCEM.

**Materials and Methods:** It is a prospective observational study, approved by the Science Ethics Committee of Moldova State University of Medicine and Pharmacy "Nicolae Testemitanu". Written informed consent, to participate in the study, was obtained from 41 patients. Patients were randomized in two groups according to the technique of anesthesia TIVA and IA. All patients underwent laparoscopic cholecystectomy. During the study, the research team collected quantitative and qualitative data regarding used techniques of anesthesia and patient safety issues. The statistical analysis was performed using SPSS 17 software.

**Results:** The study lots are similar from the demographic point of view. According to results of our study there are no differences between the study groups in the terms of: length of anesthesia (p= 0.253504), use of intravenous anesthetics drugs thiopental (p=0.519761), midazolame (p=0.349021); neuro-muscular blocking agent (p= 0.995902); incidence of postoperative nausea (p=0.4) and vomiting (p=1.0); length of post-anesthesia recovery (p=0.995902). But the cost of IA is about two folds higher (p=0.000003) and IA technique implies the reduction of total amount of used opioids (p= 0.011007).

Limitations of the study: small sample size; no standardize study anesthesia protocol; observational study; anesthesiologists involved in study didn't attend any special training on providing volatile gas anesthesia, laparoscopic cholecystectomy is a relative short surgery, it is necessary a longer procedure in order to reveal benefits of one or another technique.

**Conclusion:** Partially, our result can be explained by a shortage of the anesthesiologists' experience in managing of the IA technique, this leads to waste of resources. Due to this we encourage to use IA for specific high ASA score patients and to create training opportunities for anesthesiologists in the field of VGA.

**Key words:** technique of anesthesia, TIVA, InhalationalAnaesthesia, assessment.

## PREDICT POSTOPERATIVE BLEEDING AFTER CARDIOPULMONARY BYPASS IN CHILDREN

**Savan Veaceslav, Willems Ariane**

*Academic adviser:* Adrian Belîi, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Background:** Systemic coagulation disorders after cardiac surgery requiring cardiopulmonary bypass (CPB) represent serious postoperative complications. The aim of the present study was to investigate the

relationship between postoperative hemorrhage and coagulation parameters determined by global coagulation assays, to define predictive markers.

**Methods:** Thirty-four pediatrics were enrolled for the admitted patients to the University Children's Hospital from Brussels for cardiac surgery with CPB. Blood samples were collected ten minutes after protamine administration. Laboratory investigations included platelet count, fibrinogen level and classical coagulation tests (prothrombin time (PT) with International Normalized Ratio (INR), activated partial thromboplatin time (a PTT)). The duration of cardiopulmonary bypass and the minimal temperature were recorded. Chest tube drainage was monitored for 24 h after operations as an index of postoperative hemorrhage (> 10 ml/kg).

**Results:** Demographic data differed between the hemorrhagic and non hemorrhagic group. In this study the incidence of bleeding was 64.7%, and it was higher in younger children with lower body weight. No baseline coagulation test was found by correlation coefficient to be predictive or, to correlate with postoperative chest tube drainage (PT (INR), p=0.48; aPTT, p=1.00). After the protamine administration to patients, platelet count (p=1.00) and fibrinogen level (p=0.278) did not correlate with eventual chest tube drainage. Our investigation determined the duration of CPB (r (Pearson) = 0.53; p=0.0008) and the minimal temperature while CPB (r (Spearman) = -0.39; p=0.002) to be predictive for 24-hour chest tube drainage after CPB in children.

**Conclusions:** By using regression analysis, we found duration and minimal temperature of CPB to be predictors of post-CPB chest tube drainage in children. No baseline coagulation test was found to be predictive with postoperative bleeding. Postprotamine platelet count and fibrinogen level were observed to not correlate with chest tube drainage.

**Keywords:** bleeding, children, cardiac surgery.

## SURGICAL METHODS IN THE TREATMENT OF BLEPHAROPTOSIS

**Ghebos Nadejda**

*Academic adviser:* Gheorghe Ivanov, M.D, Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Blepharoptosis is a drooping of the upper eyelid causing a narrowing of the palpebral aperture, may be divided in two main types: congenital and acquired. An actual problem, that may affect the patients in all periods of ages. The most problematic are the ptosis of the children, which may develop amblyopia or astigmatism, when ptosis isn't treated surgically in time. At the moment there are more that 150 surgical methods of plastic surgery of the upper eyelid in congenital and acquired ptosis. The correct choice of a method depends on basic criteria: the cause of ptosis, patient's age, ptosis' degree, the fuction of levator muscle, specific parameters (like MRD) and influence on the efficiency of the intervention result of, aesthetic effect, minimal postsurgical complications and gut therapeutic effect (in amblyopia cases by children). Presently, there are not any schemes of efficient approach to the patient with blepharoptosis, which help to choose a correct surgical method with a good cosmetic, fuctional effect.

**Objectives:** To elaborate the schemes of surgical treatment for each cause group of blepharoptosis. To introduce a new surgical method in Moldova of Kataew (appeared in 2008, Nr.of patent №2008143463) in congenital blepharoptosis with very low fucntion of levator muscle in children. To appreciate the results of surgical treatment according to the proposed scheme.

**Methods:** The work was effectuated in the clinical base of ophthalmology of USMF, medical particular ophthalmological center „Ovisus", Municipal Clinical Hospital №1. There were examined 31 patients from 4-73 years, who were operated from 2003-2011. Four of the most perspective methods - Müllerorafia (advancement of Müller muscle), Frontal suspension (connection between tarsus and frontal muscle with alloplastic material (mersilen, silicon) in pentagon form), new Kataew method (upper lid suspension to ligament of Whitnall) and Elsching method (orbico-frontal adherence to eyebrow upper suspention approch) were used from the spectrum.

**Results:** The majority (60% of the cases) are present with congenital ptosis of different degree. Traumatic and involutive ptosis predominate from the last 40%. A correlation between LF(levator function) and MRD (marginal reflex distance) is found, as MRD is lower, which speaks of a bigger degree of ptosis, so the levator muscle function is weaker. The most representative was congenital ptosis in children (4-12 years) with MRD -1,5 mm media and LF 2 mm( II-IV degree of ptosis). In such cases, according to the scheme, Kataew-method, with growind MRD +2,5 mm in media (+4mm norm) and LF 8 mm (10-15 mm norm) were efectuated. Müllerorafia was a method of choice for the patient with congenital ptosis of the 1st degree and involutive ptosis, with the obligatory condition of satisfactory function of Müller muscle. The testing of it's function was effectuated by the help of phenylephrine (mesaton) 2,5% test (positive when MRD grows with 1,5-1,8 mm after 10 min of dropping in eyes.) 4 patients were operated. According to the scheme, the patients with congenital ptosis I and II degree and negative mesa ton test, Elsching operation is the method of choice, which was the most used - 11 patients. Frontal suspension as an alternative method in severe ptosis and as reoperation variant (as reoperation by 2 patients with traumatic ptosis in 2003,2 004). According to the postoperative criteria, pre- and postoperative MRD have a difference in 3,1 mm media (preoperational MRD +0,5 and postoperational MRD +3,64 in media). Also LF increased from 4,66 mm pre- till 7 mm postoperative in media.

**Conclusions:** Using proposed scheme an appropriate method of ptosis correction intervention could be chosen. In congenital ptosis of high degree with a low LF, Kataew method of operation can be successfully implemented. Müllerorafia gives positive results only for phenilephedrine positive test in involutive ptosis or congenintal of low degree. In phenilephedrine negative test for congenital ptosis higher degree frontal suspention or Elsching method could be used.

**Keywords:** palpebral aperture, congenital ptosis.

## THE NECESSITY OF REINTERVENTIONS IN PATIENTS WITH GASTRIC TUMORS POSTOPERATIVE COMPLICATIONS

**Coman Corina, Ciobica Anamaria, Stan Nora Diana**

*Academic adviser:* Mocan L., M.D., Ph.D., University of Medicine and Pharmacy "Iuliu Haţieganu", Cluj-Napoca, Romania

**Introduction:** After lung cancer, gastric carcinoma is the most frequent malignant tumor in humankind. We select the surgical treatment according to the location and the extension of the tumor. Radical surgery resection like subtotal gastrectomy and total gastrectomy is performed in early stage tumors, whereas in advanced stages we use palliative treatment to improve quality of life. No matter what therapeutic alternative we choose, the presence of postoperative complications sometimes makes necessary the reintervention, especially when the state of the patient is not improving.

**Materials and methods:** Medical records of 364 patients, 128 women and 236 men who underwent radical surgery and palliative treatment for malignant gastric carcinoma between 01.01.2009 -31.12.2010

at the 3rdSurgical Clinic (Cluj-Napoca, Romania) were retrospectively reviewed.

**Results:** We observed that the most frequent reinterventions were performed in men (241%from the sum of all interventions on both sexes) also patients coming from urban areas (33.9%). Taking into account the symptomatology, those with dyspeptic syndrome presented more often postoperative complications (22.22 %). From the laboratory tests, low hemoglobin and low total proteins give more often postoperative complications and need reinterventions (18.3%) and (16.66%). Most frequent reinterventions were performed and complications appeared after subtotal gastroectomy (17.39%) and associated splenoectomy (26.66%). Liver metastasis (18.18%) and tumor dimension (12.96%) larger than 5 centimeters need reintervention after postoperative complications.

**Conclusions**: In conclusions the malignant gastric carcinoma more frequently observed postoperative complications in men from urban areas, also in patients with dyspeptic syndrome and low hemoglobin and low total proteins. Discussing the surgical treatment, subtotal gastroectomy and associated splenoectomy are the reasons for surgery in case of complications. From the study we can see that liver metastasis and large tumors give complications very often and the necessity of surgery is required.

**Key words:** gastric carcinoma, radical surgery, palliation, postoperative complication, reintervention.

## RETROSPECTIV STUDY ON EYELID TUMORS

**Ungureanu Diana**

*Academic adviser*: Ivanov Gheorghe, M.D., Ph.D., Lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Skin cancer is on of the most often found tumor. About 80-85% of all skin cancers are localized on the face. And out of these about 70% are eyelid tumors.

Eyelid tumors are and will be a very actual problem, because of: the increase of life expectancy; a high rate of preexisting lesions due to ultraviolet radiation, ionized radiation, micro traumas and the low rate of treatment of such lesions; there are many difficulties linked to reestablish the functions of the eyelids.

**Purpose:** The goal of the study is to research retrospectively the cases of Eyelid Tumors, highlighting the addressability of the patients, the frequency of certain histological forms, the treatment methods.

**Objectives:** to determine the addressability in patients; to determine if there are any tendencies of prevalence; to observe any relationship of dependence between the criteria used in the study.

**Methods and materials**:

In the study 70 patients were analyzed, they had the diagnosis of Eyelid Tumor confirmed not only clinical, but histological as well. With the age between 2 months and 80 years old, which in the period of 2007-2011 were treated in "Ovisus" Clinic.

**Results:** I studied 70 patient files: 35 files stationary and 35 ambulatory. In 2007 there were 17 cases (24,30 %), in 2008-16 (22,85 %), in 2009–18(25,70 %), in 2010–11(15,70 %), in 2011–8(11,45 %); The addressability (the period of time from the clinical onset to the first visit to the doctor). During the period of 0-1 year 44 (62,85 %),2 and more–26(37,15 %); Age groups: 0–19 years–7(10 %),20–39–14(20 %), 40–59y-32(45,70 %),60–80y–17(24,30 %); In the urban area–44 cases (65,15 %),in the rural area–26(34,85 %); In 65 cases (92,85 %) the process is benign; In 66 cases (94,30%) the treatment was surgical and in 4 cases (5,7%)-crio application.

**Conclusions:** We could say that the addressability of 62,85% for the period until 1 year is a good index, that shows that the patients are well instructed medically and alerted by the appearance of a tumor and they address early to the doctor. In almost half of the cases (45,70%) the Eyelid Tumors are found in the age group 40-59 years, this tells us that this is the risk group, which means that the polyetiologic theory is more correct (the interaction of the factors of aggression and the inefficient measures of protection). The repartition of the patients according to the living area shows us that in 44 cases (65,15%) the dominating area is urban, this may be due to the fact that in the urban area the level of the pollution is higher and the quality of the ecological estate is much poorer.

## AESTHETIC AND FUNCTIONAL CORRECTION OF SKIN SCARS

**Arapova V.**

*Academic adviser:* Karapetyan G., M.D.; Vinnic Yu., M.D., Ph.D., Professor, Krasnoyarsk State Medical University "V. F. Voyno-Yasenetsky", Krasnoyarsk, Russian Federation

**Introduction**: Despite of surgery rapid progress, the problem of improving the quality of scars worries surgeons, dermatologists, cosmetologists. Hypertrophic scars and keloid ones can be described as kinds of usual wound healing. Clinically keloid scar gives trouble in the form of itching, burning, painfulness. Keloid and hypertrophic scars differ from nontrophic by rich vascular net, high compactness of mesenchymal cells and fibers, which are turned chaotically.

**Purpose**: increase the efficiency of treatment of the hypertrophic and keloid scars.

**Materials and methods**: 52 patients with hypertrophic and keloid skin scars were monitored by us. Topography, sizes and age of the hypertrophic scars did not matter and therefore were not clinically classified. Age of the patients was from 20 to 44 years old. Some indexes like height of the scar on the skin, area of the scar, consistence, color, condition of the surrounding skin, scar microcirculation were studied in result of the therapeutic measures. All the patients received diprospan in thickness of the scar three times during 4 weeks at a rate of 7 mg per 5 square centimeters, but not more than 14 mg in the whole scar for the one time. After the obtained medicamental hypotrophy scar tissue was subjected to the effect of neodymium laser radiation with wave length of 540 nm, energy of pulse 50-150 mJ, frequency of pulse 1-4 Hz, pulse duration 1-2 ns (generation mode Q – sw). Neodymium laser radiation was obtained with active medium Nd: YAP (Q-sw)/KTP.

**Results**: Application of high therapeutic diprospan doses makes it possible to bring keloid scars to hypotrophy and atrophy in a short time. There is a change not only a structure of scar tissue, but decrease in the initial area also, by the hypertrophic and keloid scar transition to state of atrophy at first and to state normotrophy after laser use. Use of neodymium laser radiation in generation mode Q – sw with pulse duration 1-2 ns leads to obliteration of vessels in the scar bottom without effects on the scar tissue proper and surrounding tissues. There was decrease in the area of the keloid and hypertrophic scars an average of 23 ± 4.3 % ($P<0,05$) in 8 weeks.

**Conclusions**: Thereby proposed method allows toreceive lasting clinical result: decrease in the area of the scar, formation of the normotrophic scar tissue, improvement of the consistence and change of the color, which is typical for surrounding skin. This method is painless and safe, it does not influence on surrounding tissues, so long as it is confirmed by stable clinical result of patients in a year after the treatment.

**Key words:** keloid, hypertrophic scar, laser, diprospan

## MEDICAL CORRECTION OF TERMINAL UVEAL GLAUCOMA

**Shendra Y., Rutkovska I., Yarovka O.**

*Academic adviser:* Rudkovska O., M.D, Ph.D., Associate Professor, Lovlia G., M.D, Ph.D., Associate Professor, Bukovinian State Medical University, Chernivtsy, Ukraine

**Introduction:** Terminal painful no compensated glaucoma of uveal genesis often requires retrobulbar blockade with ethyl alcohol or, in case of ineffective treatment, enucleation of the eyeball.

**Objective:** To work out medical therapy of terminal uveal glaucoma.

**Materials and methods:** 11 patients with uveal painful terminal glaucoma have been under our observation. We succeeded in elimination of the painful syndrome and in saving of the eyeball, exclusively, by means of medical treatment.

The age of patients was from 54 to 65, 7 women and 4 men. The patients were afflicted with unilateral terminal painful uveal glaucoma. Sharpness of eyesight on the eyes was 0 (zero). Before treatment intraocular pressure (IOP) was 47±4.3 mm t/g.

Routine ophthalmological examinations including USD of both eyes were performed. The patients received the following medical preparations: cycloplegic drugs (atropine 1/three times a day); topical corticosteroids (dexametasone 0.1four time); topical β-blokers (thymol 0.5% twice a day); on the background of general anti-inflammatory therapy.

**Results:** After conducted therapy painful syndrome was arrested, IOP reduced t☒ 28 ±2.6 mm tlg ($p<0.05$). The patients got recommendations to drop cycloplegic drugs corticosteroids and β-blockers after discharge from the hospital constantly. Further examination 6 months later demonstrated stability of the results obtained. The eyes were quiet; pains were absent, IOP-within the norm up to subcompensated level (27±1.9 mm tlg). There were no indications for surgery.

**Conclusions:** In case of painful terminal uveal glaucoma the introduced complex of anti-inflammatory and hypotensive therapy results in organ-saving effect. The above mentioned therapy is advisable to use in case of pain of any genesis in a blind eye (except oncopathology), which will likely exclude enucleation.

**Key words:** uveal painful terminal glaucoma, medical therapy.

## OTITIS MEDIA FORMS IN CHILDREN WITH UPPER RESPIRATORY INFECTION

**Diacova Olga**

*Academic adviser:* Svetlana Diacova, M.D, Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The upper respiratory infection is highly prevalent among young children and often results in otitis media. The incidence and characteristics of otitis media complicating URI has not been studied in Moldova.

**Objectives:** To evaluate the prevalence, the clinical features and particularities of diagnostics of otitis media in children with upper respiratory infection.

**Methods:** We performed a prospective study of 50 children (age range from 6 months to 7 years) with upper respiratory infection. We collected anamnesis data and performed the routine otorhinolar-

yngologic examination including anterior rhinoscopy, oropharyngoscopy and otoscopy. 100 ears of 50 children were examined by optic and pneumatic otoscopy, using the scheme of detailed description. Electroacoustic examination of middle ear including tympanometry and reflex-audiometry was obtained, analyzed and compared with otoscopy data. Diagnostics was made according to the Algorithm of diagnostics. Repeated tests were performed in 10 days and in a month after the clinical recovery.

**Results:** Otalgia was registered in 7 from 50 examined children and disappeared during first 3 days in all children. Impedance audiometry was the method of reference. The analyses of anamnesis and otoscopy data were on the basis of differential diagnosis between otitis media forms. We detected otitis media in the majority of examined ears (82 %). Otitis media with effusion was diagnosed in 56 % of cases, acute otitis media – in 18 %, recurrent otitis media – in 3 %, adhesive otitis media – in 1 % of ears.

The majority cases of otitis media were registered in younger children (first 5 years of life). We analyzed the clinical course of otitis media. Inadequate reaction to sounds and to sleeping disturbances, were the most frequent signs of otitis media. We registered the persistence of otitis media in 80 % of cases in 10 days of clinical recovery and in 40 % in a month. The majority of children with persistent otitis media were younger than 3 years of life.

**Conclusions:** The prevalence of otitis media in children with upper respiratory infection is high. The otalgia is not the sign of reference in otitis media. The complex of anamnesis data analyses, otoscopy and impedance audiometry is necessary for diagnostics and differential diagnostics of otitis media forms. Children of the first 5 years of life with upper respiratory tract infection need an otorhinolaryngologic evaluation and audiologic control in a month after recovery.

**Keywords:** upper respiratory infection, otitis media, children, otoscopy, impedance audiometry.

## GLYCEROL PRESERVED SKIN ALLOGRAFT – THE KEY FOR THE EFFECTIVE WOUND BED PREPARATION

**Andreevscaia Olga**

*Academic adviser*: Boeckx Willy, M.D., Ph.D., Professor, ULB University, Brussels, Belgium; State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

**Introduction:** For spontaneous wound healing to occur, wound preparation must be optimised. This paper presents the authors' experience and philosophy regarding wound bed preparation of extensive and complicated wounds. The properties of an ideal burn dressing can be summarized in four P's: protection, proteolytic effect, promotion of healing, and pain relieving. Glycerol preserved skin allograft possess several key characteristics of an ideal wound bed preparation, including good adherence to the wound bed, water vapour transport, antimicrobial characteristics, low toxicity and antigenicity, ease of application and removal, a long shelf life, and minimal storage requirements. There are other benefits of skin allograft application, such as decreased loss of water, electrolytes, and proteins. Skin allograft application also reduces pain and thus allows for exercise and ambulation, also decreasing the incidence of contractures.

**Methods:** This study included all patients with burns and complicated wounds, who were admitted to the Queen Fabiola Children's University Hospital in Brussels from January 2010 to November 2010 who had been treated with a glycerol preserved allograft. After the removal of all devitalized tissue, angiogenesis of the wound bed is promoted by the temporary application of the glycerol preserved allograft (GPA).

**Results** The results of the study showed the high effectiveness of these kinds of treatments: infection control, stimulation of angiogenesis, and granulation tissue formation. With the application of GPA, we ensured that even in the extreme age group patients, such as children, their wounds were optimised for the best chances of an allograft take at the first attempt. Otherwise, allograft failure may lead to the grave consequence of repeated allografting with further waste of the donor sites, wound infection, sepsis, or even mortality.

**Conclusion** The preserved dermal layer, even if it is thin, is crucial for spontaneous wound healing with minimal hypertrophic scarring, due to the reduced inflammatory response in the wound bed, as observed in our patients.

**Keywords:** Allografts, Burns, Glycerol, Biological dressing.

## THE OPTIMIZATION OF COMPLEX SURGICAL TREATMENT OF ELDERLY PATIENTS WITH PERFORATED GASTRODUODENAL ULCER

**Govorina Yu., Chavir S.**

*Academic adviser:* Vinnik Yu., M.D., Ph.D., Professor; Sergeyeva E., M.D., Ph.D., Professor, Krasnoyarsk State Medical University "V.F. Vojno-Yasenetskij", Krasnoyarsk, Russian Federation

Introduction: Peptic ulcer disease takes a leading place in structure of diseases of a gastrointestinal tract. One of the most dangerous complications of stomach ulcer is perforation. The complicated forms of peptic ulcer disease in the older age group are the cause of unsatisfactory results of treatment.

**Materials and methods:** The first part of the study consisted of 76 patients with the long-term results of operations according to classification of A.Visick, modified by N.N.Krylov, divided into three clinical groups: patients with distal resections (the first group), palliative care (the second group) and radical organ-preserving operations - gastroplasty and duodenoplasty by V.I. Onopriev (the third group).

The second part of the study consisted of 38 patients undergoing operative treatment of peptic ulcer disease, divided into two clinical groups: the patients received traditional treatment (the first group), the patients received the combination of traditional ozonotherapy treatment and system (the second group). Activity of antioxidant enzymes (superoxide dismutase (SOD), catalase) and concentration of NO (nitric oxide) were determined in blood of patients. The data were processed statistically by nonparametric Wilcoxon and Kruskal-Wallis test using Statistics 6.0 software.

**Results:** The excellent long-term results of operations were observed only in the third group. Satisfactory results of treatment prevailed in the first group (78,9%), bad results of treatment - in the second group(54,5%). Clinical symptoms of the patients of the second group included pain, dyspepsia and reflux syndromes. The most common symptoms of the patients of the first group were dyspepsia and diarrhea.

Combination of traditional ozonotherapy treatment and system increased catalase activity by 9 times, increased SOD activity by 2,6 times, increased concentration of NO by 2,8 times on the $7^{th}$ day after operative treatment.

**Conclusion:** Radical organ-preserving operations are preferable for the patients of older age group with complicated forms of peptic ulcer disease, with good long-term results.

Combination of traditional ozonotherapy treatment and system is effective for the correction of irregularities in the free-radical oxidation/antioxidant protection system in the patients of older age.

**Key words:** peptic ulcer disease, ozonotherapy, superoxide dismutase.

## THE ROLE OF MR TRACTOGRAPHY IN PRE-SURGICAL PLANNING – PERSONAL SERIES OF 25 CASES AND A REVIEW OF THE LITERATURE

**Gutu Pavel, Malcoci Mihai**

*Academic adviser*: Iliescu B., M.D., Ph.D.; Poeata I., M.D., Ph.D., "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, Romania

**Introduction:** Diffusion tensor imaging (DTI) contains a wealth of information on molecular diffusion in biological tissues. Knowledge of the topography, integrity, and involvement by the pathological process of the white matter tracts is an important factor in pre-surgical planning for patients with brain lesions. We have evaluated the clinical utility of a magnetic resonance tractography technique based on DTI

**Materials and methods:** We studied, in a prospective manner, 25 cases with lesions involving salient intracerebral and medullary tumors (22 and 3 cases respectively). All cases followed a preoperative imaging protocol that included DTI on top of the usual MR imaging protocol. We analyzed the DTI findings preoperatively and looked at the significant information that influences the surgical plan: position of the significant white matter tracts, the degree of their involvement in the pathological process and anatomical integrity, relationships with important anatomical landmarks and with the major surgical approach paths. We present the postoperative results and some of the most illustrative cases in the series and compare our results with the similar studies in the literature.

**Results:** Pathological examination of the resection specimens documented glioblastoma in twelve cases, grade one astrocytomas in five cases and grade two in one case, meningioma in five cases, mature teratoma and AVM in one case respectively. We managed to identify the degree of involvement of white matter tracts in all cases using DT imaging 2D maps and 3D reconstructions. Normal white matter tracts were highlighted in the controlateral hemisphere in all patients. Changes in tracts' structure and position were characterized for each patient.

**Conclusion:** Our experience, based on the results of the present study strongly suggests that in depth knowledge of the white matter tracts involvement in an intracerebral or intramedullary pathological process improves significantly the surgical planning in terms of surgical procedure safety and functional outcome.

**Key words:** diffusion-tensor imaging, white matter, pre-surgical planning.

## COMPARATIVE STUDY OF MICROSURGERY AND GAMMA-KNIFE SURGERY IN PATIENTS WITH VESTIBULAR SCHWANNOMA

**Malcoci Mihai, Gutu Pavel**

*Academic adviser:* Bogdan Iliescu, M.D., Ph.D., Ion Poeata, M.D., Ph,D., "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, Romania

**Introduction:** Vestibular schwannomas (VSs) are benign neoplasms of Schwann cell origin. Although benign in nature, the treatment of vestibular schwannoma remains a challenge for modern neurosurgery. Patients with vestibular schwannomas have several management options including observation, surgical resection, stereotactic radiosurgery, fractionated radiation therapy, or combinations of these.

**Material and methods:** We study two patient groups that have been treated using either Gamma-Knife radiosurgery or microneurosurgery. We analyze the criteria for primary referral to one of the thera-

peutic procedures and look at their results in terms of tumor control and facial nerve function preservation. The surgical group consisted mostly of patients with equal or bigger than 3 cm (80,95%) tumors out of which 80,95% showed imagistic or clinical signs of brainstem compression. The radiosurgery group consisted exclusively of tumors smaller than 3 cm. Facial nerve function preservation results were unsatisfactory in the surgical group but were good for the patients referred to radiosurgery.

**Results:** Our results show that tumor size is a major factor in facial nerve function preservation. However for large tumors surgery is the only possible therapeutic method.

**Conclusions:** For those patients with smaller tumors and very good preoperative neurological function radiosurgery should be the therapy of choice, keeping in mind that in 12% of the cases in our series there has been an enlargement in tumor volume that could raise the indication for microneurosurgery

**Key words:** gamma-knife, microneurosurgery, vestibular schwannoma.

## THERAPEUTIC APPROACH IN SPLENIC INJURIES

**Colesnic V., Gurghis R., Tintari St., Bordian V.**

*Academic adviser:* Rojnoveanu Gheorghe, M.D, Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** A better knowledge of splenic functions and an increasing awareness of the postsplenectomy complications, the position towards splenic injuries (SI) approach has changed over time with the development of imaging techniques.

**Purpose:** To analyze the management outcomes in SI.

**Material and Methods:** There were 77 consecutive patients with SI, treated at the Emergency Hospital between 2008 and 2011. Male/Female ratio was 2,5:1. The overall mean age was 40 years. Blunt abdominal trauma prevailed in 74(96,10%) cases. The mechanism of injury was: falls – 44,74%, followed by motor vehicle accidents – 34,21%, assaults – 19,48%, spontaneous rupture of the spleen – 1,30%. Twenty-six (33,77%) observations had an isolated SI, 3(3,90%) – multiple injuries, associated injuries – 62,34%. Associated injuries to the thorax (42,86%) were the most common, 31,17% presented right lower rib fractures. Thoracic lesions are followed by cranio-cerebral trauma with 14(18,18%) cases, limbs fractures – 13(16,88%), liver injury – 8(12,12%), kidney injury – 7(10,39%), hollow viscous injury – 7(10,39%), hip fractures – 8(12,12%), diaphragmatic tear – 3(3,90%) and pancreas injury – 2(2,60%). Shock was present on 33(42,86%) patients, of which 9(11,69%) – gr. III-IV. An abdominal US was performed in 67(87,01%) patients, sensitivity of FAST being 88,05%. The total number of 43(55,84%) patients had a CT scan, with a 95,35% sensitivity. Diagnostic laparoscopy constituted 44,16%, with a 76,47% sensitivity.

**Results:** Forty-one (53,25%) patients had a surgery: either splenoectomy (n=36), or splenic conservation procedure (SCP) (n=5). SCP was performed using topical haemostatic agents (n=2) and splenorrhaphy (n=3). Postsplenoectomy period evolved with complications in 11(14,28%) patients, and 5 deaths. Of the 38 patients initially undergoing nonoperative management (NOM), NOM failed in 4 of them. Length of hospital stay averaged 11 days in the NOM group versus 14 days average in the operative management group.

**Conclusion:** Currently, NOM approach has gained ground in the patients with splenic injuries. Its application removes the patient from the early and late complications associated wtih unnecessary laparotomy. Thereby it reduces the length of hospital stay and thus the cost of patients' care, period of inactivity, social and family integration.

**Key words:** spleen, injury, nonoperative management, organ-preserving procedure.

## SPINOCELLULAR AND BASOCELLULAR CARCINOMA OF THE HEAD

**Zeca Elena-Cristina**

*Academic adviser:* Maciuceanu-Zarnescu, M.D., Ph.D., Assistant Professor; Mircea–Bogdan, M.D., Ph.D., Assistant Professor, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

**Introduction:** Tumors of keratinocyte epidermic cell or non-melanoma skin cancer are now the most common types of cancer in white populations. The tumor entities show an increasing incidence rate worldwide but a stable or decreasing mortality rate. The rising incidence rates of non-melanoma skin cancer are probably caused by a combination of increased sun exposure or exposure to ultraviolet light, increased outdoor activities, changes in clothing style, increased longevity, ozone depletion, genetics and in some cases, immune suppression.

**The purpose** of this paper was to describe different types of surgical intervention used in patients with spinocellular or basocellular carcinoma of the head region.

**Material and Methods:** The paper presents patients who came to the Floreasca Emergency Hospital, Bucharest (Romania) in the Department of Plastic and Reconstructive Surgery and got surgical excision of the tumor, followed by reconstruction.

All patients had spinocellular or basocellular carcinoma located at the head in an advanced stage but without metastasis. The anatomopathological exam was performed to confirm the diagnosis of skin carcinoma for which surgery is the only treatment. The defects were covered using the skin flaps and skin grafts, to the area removed and to the size of the tumor.

The excision was made with safety margins from the healthy tissue; the defect was covered with flaps from the surrounding skin or skin graft in smaller tumors. The recovery of the patients depended on the chosen techniques, on the patient's medical status and on post-surgical care.

**Results:** The results revealed that skin cancer can be treated with a multitude of surgical techniques. The use of skin flaps or skin grafts provides a wide range of surgical approaches for treating difficult areas like nose or lips to simpler regions like forehead.

**Conclusion:** The principal conclusion was that patients with spinocellular or basocellular carcinoma could benefit from an optimal facial reconstructive treatment. The intervention allowed social reintegration with minimal functional or esthetic deficit.

**Key words**: spinocellular/basocellular carcinoma, surgical treatment, skin flaps.

## PRIMARY TUMORS OF JEJUNUM AND ILEUM: ONE CENTER EXPERIENCE

**Iscenco Anna, Cernat M., Mishin I.**

*Academic adviser:* Ghidirim Gheorghe, M.D, Ph.D., Academician, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Primary benign and malignant tumors of jejunum and ileum are rare. They are very often diagnosed by accident or as a cause of acute abdomen.

**Purpose**: The aim of study was to analyze the cases of primary tumors of jejunum and ileum admitted for surgical procedures in an emergency and elective setting.

**Materials and Methods**: Retrospective review of all patients referred to our institution and diagnosed with primary tumors of jejunum and ileum and its complications during the last 7 years.

**Results**: There were 15 pts (F-9, M-6) with mean age of 52.9 ± 5.1 years (range from 17 to 79). Intussusceptions (n=6), intestinal obstruction (n=3), perforation (n=2), intussusceptions/ perforation with GI bleeding (n=2) were the most common clinical presentations. In 2 cases primary tumors of jejunum and ileum were detected as incidental findings during surgical procedure. Most tumors (n=11, 73.3%) were located in the ileum. In 15 pts intestinal resection ($R_0$-12, $R_1$-1) with end-to-end (n=7), side-to-side (n=6), Maydl procedure (n=1) and terminal ileostomy (n=1) were performed. There were 9 benign tumors (leiomyoma-4, angioleiomyoma- 2, fibrolipoma -2, fibroid polyp-1) and 6 malignant (c-KIT/CD 117 positive GISTs–2, lymphomas-2, neuroendocrine tumor-1, adenocarcinoma-1).

**Conclusion**: Primary tumors of jejunum and ileum are rare, the symptoms often non-specific, and the accuracy of different diagnostic tests needs to be improved. Timing and type of the intervention to the process and biological behavior of the pathological cells predict the prognosis.

**Key words**: small intestine, tumor, surgery.

## CAN EPIGASTRIC FLAP BE SENSITIVE AND SURVIVE ON THE NEURAL PEDICLE?

**Baytinger A.**

*Academic adviser*: Baytinger V., M.D., Ph.D., Professor, Siberian Medical University, Tomsk, Russian Federation

**Introduction:** Nowadays in reconstructive plastic surgery it is very popular to use island flaps for covering soft tissue defects. I.Kuran et al (2000) reported high level of satisfaction after surgery in the group of patients who received a treatment by using sensitive flaps. In this way transposition of flap that includes in pedicle sensitive nerve is very actually. It is well known that all nerves have their own vasculature (vasa nervorum) to supply nerve fascicles. In 1992 A.Masquelet reported about sural flap for covering defects of lower extremity. In pedicle of this flap situated sural nerve. Authors improved that vascular axis of this nerve can supply skin. In 2004 surgeons from Turkey presented a new model of flap – neural-island flap. This flap has no axial blood flow and based on sensitive nerve of rat (n.cutaneus femoris lateralis). For experimental surgeons is very necessary to have simple and reliable model of this flap. In this investigation we offer to use well known epigastric flap because its pedicle has sensitive nerve.

**Material and Methods:** All Wistar rats (N=43) were divided into 2 series of experiment: anatomical study and surgical study. In anatomical study (n=5) under general anesthesia was made microdissection of epigastric nerve by using operating microscope. In surgical study all animals were divided into 4 groups. In group A (n=11) was raised conventionally 2x2 cm epigastric flap in addition with ligation of superficial epigastric artery and vein, but epigastric nerve leaves intact. In group B (n=11) was made epigastric skin graft - after raising of standard epigastric flap neurovascular pedicle was legated and cut. In group C (n=11) epigastric flap 2x2 cm was raised in new area in considering with anatomical study of epigastric nerve. Artery and vein was legated, but nerve was intact. In group D (n=5) was raised 1,5x1,5 cm epigastric flap in new area. Data analysis was made by using nonparametric statistics and Spearmen correlation.

**Results:** Anatomical study shows that epigastric nerve has another area of innervation comparing with epigastric angiosome. This nerve goes with epigastric vessels in the first time. Than nerve that is deflected lateral and goes to the internal surface of femur and lateral surface of the back. In experimental study in the group A survival rate of flaps was 18,2%, in group B – 0%, in group C – 27,3%, in group D – 60%. There are no significant difference in survival between group A and B, and between group C and D ($p>0.05$). Correlation between group C and D is not significant.

**Conclusion:** This investigation shows that epigastric nerve has different topography than superficial epigastric vessels. It is important for raising neural-island flap, because conventional epigastric flap of the rat (Finseth F., 1976) has not sensitive innervation. Epigastric nerve supplies epigastric skin flap in area of innervation but it is not significant for flaps with size 2x2 cm. There are positive statistical trend between survival rate and flap size. So, we propose new model of neural-island flap – sensitive epigastric flap. It is a good model for investigation survival rate of sensitive flap and role of epigastric nerve in blood supply of the skin.

**Key words**: epigastric flap, anatomy, plastic surgery.

## THE OXIDATIVE STRESS INFLUENCE ON PLAQUES, IN MAMMALS TUMORS SURGICAL TREATMENT

**Casu Ileana, Negru Teodor**

*Academic adviser*: Tudoraşcu Iulia, M.D., University Assistant, University of Medicine and Pharmacy from Craiova, Craiova, Romania

**Introduction:** The objectives of our study were determination by the plasmatic oxidative status over the patients with operated breast cancer, the assessment of the ratio between the intensity of the induced S.Ox (tumor + surgical act) and the plasma antioxidant potential, evidencing the parameters, allowing elaboration of a prediction with regard to the quality of the post-operation wound cure.

**Material and Methods**: We investigated 32 patients with breast cancer and 37 healthy patients (witness lot), 69 cases, in total. We have calculated the total anti/oxidant potential, of plasma (TAOP), measured the concentration of total peroxides from plasma and calculated the ratio between the two values, which is expressed as an index of oxidative stress (ISO). These values are used in order to appreciate the oxidative status of plasma. We achieved four groups of study, considering the morphopathological aspect of tumors and the prognosis over the quality of wound healing, post-surgery. In order to explain the psychopathological mechanisms involved in healing the surgery wounds done on the neoplastic field, we checked the evolution of clinical parameters: clinical: wounds appearance, umorals interactions between the residing cells and those migrating from the blood vessels into the wound tissues. We associated to the conventional therapy, post-surgery a diet with exogenous oxidants (C vitamin, selenium, and beta carotene) and we noted down the features of wound healing, after 3/6 weeks post/operation, up to 2-4 years of life, as appropriate.

**Results**: TAOP has been reduced, the index of the oxidative stress significantly increased at the patients with operated CS, who had a faulty wound healing. The additional exogenous anti/oxidants have different effects, from none effect, to the patients with a lipids and glucoses rich diet up to defaultless healing and improvement of the general clinical condition.

**Conclusions:** Reduction of the oxidative stress intensity has a positive role in wound healing and for this reason the administration of some exogenous anti/oxidants could influence the evolution of the general condition of the patients operated for breast cancer with a favorable sense for life.

**Key words**: breast cancer, oxidative stress.

## DIFFERENT APPROACHES IN TREATMENT OF INFECTED NON-UNIONS

**Luchian Maria Luiza, Filip Adriana, Florescu Victor, Sandu Mircea**

*Academic adviser:* Gavrila M., M.D. Ph.D., Cristea S, M.D., Ph.D., University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

**Introduction:** We present the case of a 60 years old patient involved in a car accident with trochanteric fracture and open type I comminutive 1/3 proximal right tibial fracture. For the treatment of trochanteric fracture DHS (dynamic hip screw) was used and for the tibial fracture we opted for plate and screws. Due to the absence of complete bone consolidation, the plate was removed and another surgery using intramedullar nail and plate for the tibial tuberosity was performed. Unfortunately patient did not follow the hygienic conditions as a consequence he contacted an infection which led to septic non-union. To treat this new situation the device was removed and an Ilizarov frame was used. This technique allowed radical resection of the infected bone. For lengthening procedures, a percutaneous "corticotomy" was used in which the accessible cortices of tibia were cut, avoiding as much as possible penetration of medullary canal. The wires were tensioned up to 130 kg to provide adequate stiffness for bone segment stability and correction of axial, translational and rotational deformities. Even with this lengthy period of fixing wear (1.5 months for each cm of lengthening), the Ilizarov procedure was very helpful for this patient who needed extensive resection of bone and reconstruction to achieve stability.

**Methods:** The treatment option was DHS for trochanteric fracture and plate and screws for tibial fracture. Patient developed non-union at the level of tibial metaphysic as a consequence the plate was removed. After the procedure we opted for intramedullary nail for tibial fracture and plate for tibial tuberosity. However the patient did not fallow the postoperative indications as a result he developed septic non-union. Due to the infected non-union we opted for the Ilizarov technique.

**Results:** This technique was very effective in treatment of septic non-union, which needed large excision of bone. The patient recovered completely and regained the mobility of his leg.

**Conclusion:** The Ilizarov procedure benefits patients who need extensive resection of bone and reconstruction to achieve stability. Disadvantages include the time required to achieve a solid union (six weeks for each centimeter of lengthening) and the high incidence of associated complications (minor pin track infection, residual equinus contracture, a nerve palsy or unexpected sequel that can compromise the final results).

**Keywords**: Ilizarov technique, Trochanteric fracture, non-union, DHS, plate, screws, reconstruction.

## COMPARATIVE ANALYSIS OF DIFFERENT TYPES OF SEPSIS

**Babalau V., Cernit V.**

*Academic adviser:* Borş Eleonora, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Sepsis is defined as the systemic inflammatory response to infection. Severe sepsis is considered as the major public health issue. In severe sepsis, local infection is accompanied by systemic neutrophiles activation. Innate immune cells play an important role in pathogenesis of the sepsis. High numbers of blood neutrophils could be due to excessive recruitment from the bone marrow, the return of marginated cells into the circulatory pool or both. The sequestration of neutrophils could be a key stage in the initiation of multiple organ failure and negative evolution of sepsis.

**The objective of the study:** The aim of this study was to examine whether the neutrophiles spectrum changes in different types of sepsis, thus being presumed the evolution of septic process.

**Materials and methods**: A retrospective study was performed on a total of 22 files, aged between 30 -68 years, hospitalized in surgery section "Sf. Treime" hospital from Chisinau in the period 2008 -2010. The analysis of 22 patients who have developed different types of sepsis was made. Patients were divided into three groups: abdominal sepsis (8 files), pulmonary sepsis (8 files) and nephrogenic sepsis (6 files)

**Results and discussion:** Comparative assessment of white blood cell count between abdominal, pulmonary, and nephrogenic sepsis reveals the mild deviation of the formula to the left till myelocytes 25%(3) and metamyelocytes 20% (2.5) in the group with abdominal sepsis 36,3% (8).This may mean that abdominal sepsis activates to a large extent in the regenerative processes of the bone marrow, that is accompanied by further depletion due to rapidly recruited bloodstream to the site of acute inflammation where they die in a large number.

The second place is held by both nephrogenic 27,4 % (6) and pulmonary 36,3% (8) sepsis with minimal deviation of leukocytosis to the left. At the same time patients with abdominal sepsis reveal the marked lymphopenia 13,9 which denotes excessive consumption of immunocompetent cells with the subsequent installation of lymphocytopenia. Lethality in the group of patients with abdominal sepsis is clearly increased (75%), indicating the installation of immunodeficiency and determined by lymphocytes anergy and apoptosis, compared with nephrogenic and pulmonary sepsis. This anergy could be explained by depletion of feed-back relation between lymphocytes activity and regenerative capacity of bone marrow. The analysis of the septic process denotes installation of immune disorders within 24 hours of onset whatever the sepsis type.

It was mentioned there are no crucial difference of prevalence of one or another type of sepsis.

**Conclusion:** The deviation of WBC to the left characterizes decreased phagocyte capacity of immature in spite of observed leukocytosis. This failure leads to a worsening of septic process. Such patients with primary infectious focus in the abdomen, prevents major risk of septic complications in structure of sepsis morbidity and lethality.

## ANALYSIS OF THE IMPACT OF ADVERSE FACTORS OF THE PERINATAL PERIOD ON THE BIRTH OF PREMATURE INFANTS

**Ushanly Alina**

*Academic adviser:* Korolkova N., M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemitanu", Chisinau, Republic of Moldova

**Introduction**. For the past two years increased frequency of perinatal pathology is marked around the world, which causes risk of developing further children's disability. One of the main objects of perinatal pathology is premature babies.

**Objectives**:

1. Identify the relationship of perinatal outcomes of preterm delivery with special medical history, pregnancy, and gestational age.

2. To analyze the state of premature infants.

**Materials and methods**: A retrospective analysis of 60 premature infants, divided into 4 groups was made: from 35-37 weeks - I degree of prematurity was observed 30% children, with 32-34 weeks - II degree of prematurity - 36.7% children, with 29-31 per week - III and <28 weeks of IV degree of prematurity - 26.7% and 6.7% children, respectively. We used a questionnaire consisting of 100 questions.

**Results:** In the treatment groups indicated a direct relationship between preterm birth and a history of maternal guidance on abortion ($r_{xy}$=0,3), a threat to abortion ($r_{xy}$=0,3), intrauterine infection ($r_{xy}$=0,45), anemia, pregnancy ($r_{xy}$=0.3) ($p<0.05$). Deferred during pregnancy, maternal infections can cause miscarriages ($r_{xy}$=0,42); threat of termination of pregnancy has a close relationship to abortion and respiratory viral infections of the mother ($r_{xy}$=0,7) ($p<0.01$). We have traced the impact of adverse perinatal factors on the formation of gestational age in preterm infants. The results obtained during studying the pregnancies showed that the pathological conditions were observed in 91% (46) of the patients ($p<0.01$). In the most cases, the pregnancy of the mother proceeded in a background of aggravated obstetric history and a chronic placental insufficiency, however, the qualitative characteristics of these indices among the different periods of gestation have significant differences.

Repeated cases of spontaneous abortion were registered 2 times more often likely in the history of very preterm patients - 45% ($p<0.05$) among this category of children more often were indicated intrauterine infections (25 and 44% respectively in the third and 4th sub) ($p<0.05$).

Extragenital pathology of the mother is a substantial proportion of the causes of miscarriage in the 1st and 2nd subgroups of patients (43.2 and 30.4% respectively).Influence of different kind of bad habits during pregnancy is more frequently observed in very preterm patients - 24% ($p<0.05$).

**Conclusions.**

1. Risk factors of having children with I-II degree of prematurity include: the number of repeat pregnancies of up to 3 (33.3%), repeated abortion numbers up to two (10.2%), stillbirths (3.3%), spontaneous abortions (57%), toxemia (34.7%) and the threat of termination of pregnancy in the I half (10%), respiratory-viral infections (16.2%), bad habits (10%). Risk factors for delivery of very preterm children (III-IV degree) are the number of repeat pregnancies over 3 (40%), repeated abortions more than two (16%), repeated spontaneous abortions (10%), multiple pregnancy (12%), secondary infertility (3.9%) at $p<0.05$.

2. Factors contributing to the increase of severity of the ground state in preterm patients with all stages of gestations the pocket of chronic infection of mother and fetus (chronic pyelonephritis, intrauterine infection), anemia during pregnancy, the use of benefits of intrapartum period.

**Keywords**: Adverse factors of perinatal period, premature infants.

## SELF-EXPANDING METAL STENT FOR REFRACTORY BLEEDING ESOPHAGEAL VARICES – SINGLE CENTER EXPERIENCE

**Zastavnițchi Gh., Bunic Gh., Dolghii A., Mishin I.**

*Academic adviser:* Ghidirim Gheorghe, M.D., Ph.D., Professor, Academician, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Bleeding esophageal varices (EV) is a severe and life threatening complication of portal hypertension (PH), while endoscopic failure to control hemorrhage is even a more dramatic situation.

**Aim:** To assess self-expanding metal stent (SEMS) haemostatic efficacy in severe variceal hemorrhage in patients with bleeding EV and endoscopic treatment failure.

**Material and Methods:** A total of 12 patients, (M=8) with the mean ±SD age – 46.92±3.09 (24-62 years) and liver cirrhosis induced bleeding EV (n=8) and esophageal post-banding ulcers (n=4) were enrolled in the study. The main selection criteria was endoscopic treatment failure. A removable covered SEMS (SX-ELLA stent Danis, 135×25 mm, ELLA-CS, Hradec-Kralove, Czech Republic) was used in all cases. The mean SEMS used per patient was 1.25±0.18 (1-3). All definitions were used according to Baveno Consensus (I-V) conferences.

**Results:** Initial SEMS haemostatic efficacy was 100%. Partial distal stent migration was documented on X-ray and CT-scan in 5/12(41.6%) and stent reposition was achieved by second-look endoscopy. The 30-days mortality was 25% (3/12). Tanatogenesis was induced by hepatic failure (n=2) and bleeding EV distally to the stent distal end (n=1).

**Conclusions:** The preliminary results demonstrate that stenting is an effective life-saving hemostatic procedure in high-risk patients with severe esophageal variceal bleeding and endoscopic hemostasis failure as well as postbanding esophageal ulcers. Final conclusions will be reached after gaining experience with this new method on larger series.

**Key words:** esophageal varices, bleeding, stent.

## MANAGEMENT OF BLEEDING ECTOPIC VARICES

**Zastavnițchi Gh., Ciobanu N., Bunic Gh., Cotoban N., Dolghii A., Mishin I.**

*Academic adviser*: Ghidirim Gheorghe, M.D., Ph.D., Professor, Academician, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova.

**Introduction:** Bleeding ectopic varices (EcV) are uncommon and a difficult conditions to manage. The clinical data of patients diagnosed and treated for bleeding EcV were reviewed to investigate the treatment strategy.

**Material and Methods:** Patients diagnosed with bleeding EcV over a period of 10 years were identified from the comprehensive surgical database of our institution.

**Results:** There were six patients (F-2, M-4) with the mean age of 46.8 ± 7.3 (20 to 76) years. The location of the EcV was: duodenal (DV, n=2), isolated gastric varices type 2 (IGV2) according Sarin classification (n=2), and rectal (RV, n=2). EcV were induced by liver cirrhosis (LC) - 2, posthrombotic portal cavernoma (PC) - 1, LC+PC – 1, hepatocelullar carcinoma (HCC) +PC-1 and left-sided portal hypertension - 1. The EcV were managed as an emergency in 4 (DV-2, IGV2-2) and elective in 2 with RV. Bleeding EcV were managed by endoscopic ligation with HX-21L-1 (Olympus®, ET, Japan) device with mini-loop MAJ-339 (n=2, DV and IGV2) and endoscopic ligation with HMBL-4 (Wilson-Cook®, Winston-Salem, NC, SUA) (n=2, RV). Haemostatic efficacy was achieved in all cases. Surgery was performed in 2 pts: for IGV2 - stapling fundectomy with splenectomy and for DV – surgical ligation of affected vessels. In-hospital lethality was – 1/6 (16.6%).

**Conclusion**: Bleeding EcV's are a challenging emergency, haemostatic procedures depending on the site, bleeding activity and local expertise.

**Keywords**: varices, ectopic, bleeding.

## GALLBADDER VARICES

**Zastavnițchi Gh., Ciobanu N., Bunic Gh., Cotoban N., Dolghii A., Mishin I.**

*Academic adviser:* Ghidirim Gheorghe, M.D., Ph.D., Academician, Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Gallbladder varices (GBV) are relatively rare ectopic varices in patients with portal hypertension (PH).

**The aim** of the study is to investigate clinical, imagistic and endoscopic data of patients diagnosed with GBV.

**Material and Methods:** Patients diagnosed with GBV over a period of 10 years were identified from the comprehensive database of our institution.

**Results:** There were seven patients (F-4, M-3) with the mean age of 27.9 ± 5.2 (10 to 51) years. PH was caused by portal vein thrombosis (portal cavernoma): after splenectomy for trauma and hematologic disease (n=4), antithrombin III deficiency (n=2) and protein S deficiency (n=1). At time of presentation GBV (n=6) were associated with bleeding esophageal varices (F3, RCS+++, Li+m) managed by endoscopic band ligation MBL-6,10 (Wilson-Cook®, Winston-Salem, NC, SUA) and bleeding duodenal varices managed surgically (n=1). Doppler imaging showed the existence of portal cavernoma and GBV. After complete eradication of esophageal varices no GBV enlargement neither other related complications were noticed.

**Conclusion:** Color Doppler sonography is a valuable noninvasive imaging technique for assessment of portal hemodynamic profile in patients with portal cavernoma as well as a useful technique to detect GBV. Preoperative correct diagnosis of GBV should increase the surgeon's vigilance during biliary tract surgery in patients with PH in order to avoid hazardous complications.

**Keywords:** gallbladder, varices.

## PROFUSE HAEMORRHAGE FROM INGUINAL SINUS TRACK – LIFE-THREATENING COMPLICATION IN "GROIN INJECTING" DRUG USERS

**Binzari Ana, Culiuc V.**

*Academic adviser*: Guțu E., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Inguinal way usually serves as final gate selected for intravenous access by injecting drug abusers, when other routes have failed or are not available. Repeated injections in groin area for femoral vein approach increase the risk of surgical complications, often life-threatening, among the most common being listed: abscess, superficial thrombophlebitis, deep vein thrombosis with subsequent embolic events, chronic venous insufficiency, arteriovenous fistula, arterial pseudoaneurysm with eventual thrombosis and arterial insufficiency.

**The aim:** presentation of two clinical cases of relatively rare complication occurred in "groin injecting" drug users – profuse external haemorrhage following inguinal sinus formation, stopped definitively by surgical intervention.

**Material and methods:** Two young male patients aged 29 years and 34 years respectively, with the stage of intravenous drug abuse of at least 5 years, were emergently admitted to the department of General Surgery with recent haemorrhage from a pre-existing skin lesion in the left inguinal area. General signs of bleeding were well manifested in both subjects, being observed also traces of blood on their clothes and left groin area. During the inspection there was noted a skin dimpling (with a diameter of 9 mm and 11 mm, respectively) localized right below the inguinal crease corresponding to projection of femoral vessels with a cyanotic prominence in the center of lesions. Subsequent revision revealed the presence of formed tunnel lined with epithelial cells, leading directly to the wall of femoral vein – diagnosed as sinus track. Imaging study (duplex scanning) confirmed the presence of abnormal channel (sinus) just above the common femoral vein and concomitant hypo-hyperechoic thrombotic masses in deep veins of

ipsilateral lower extremity extended till the common femoral and external iliac vein, respectively. Both patients developed preoperative recurrence of haemorrhage: one after the primary physical examination (required temporary hemostasis by compression bandage and short-term resuscitation in conditions of ICU) and other – on the operating table, immediately before surgical exposure. In both cases operation was carried out under local anesthesia, limited excision of skin mark being performed. After clear localization of the external orifice of sinus tract it was closed by applying continuous suture using synthetic non-absorbable thread (polypropylene 5/0).

**Results:** No major complications were registered in early postoperative period. Primary healing of postoperative wound was observed in one patient, but small wound dehiscence occurred in other, followed by subsequent healing by secondary intention. Recurrent episodes of haemorrhage from inguinal scars at 6 months and 8 months after surgery, respectively, were not declared.

**Conclusions:** Sinus track formation in inguinal area of "groin injecting" drug users carries a risk of threatening external haemorrhage with recurring character. Continuous suturing of external orifice of groin sinus with synthetic non-absorbable thread can serve as surgical option to achieve sustainable hemostasis in cases of external bleeding. Drug use and addiction possess **negative** consequences for **individuals** and public health, and surgical complications among intravenous injecting are throughout emerging. In this context the urging of medical students must be more active promotion of healthy.

**Key words**: groin injecting, hemostasis, inguinal sinus formation.

## THORACO-LUMBAR SPINAL CORD INJURY, CLINICAL AND IMAGING ASPECTS, SURGICAL TREATMENT

**Rudei Mihail, Andoniev Iulia**

*Academic adviser:* Caproș Nicolae, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Spinal cord injuries present a major problem worldwide by their increasing incidence, vital outcomes, by the disability and mortality that they produce, by the diagnostic difficulties and complexity of surgical procedures.

In our country the incidence of spinal cord injury is 2 to 17.7% according to some local authors, the average age of damage being 39.4 years, mainly affecting males in the ratio of 4:1. In the framework of polytraumas, in the Republic of Moldova spinal cord injury occurs in 13-30% cases. Medullar impairment is 30%, with a disability of 95-98%. Lethality after spinal cord injuries is 34.4%.

**Methods:** It is presented the analysis of clinical and anamnesis data, laboratory investigations and surgical treatment of 40 patients with lumbar spinal cord injury and thoraco-lumbar injury from the Republican Traumatology and Orthopedics Center.

**Purpose:** To analyze the cases of thoraco-lumbar spinal cord injury studying the circumstances in which the trauma occurred, the lesion's location, the persistent clinical signs, diagnostic and surgical method used, in base of observational records of the Department of vertrebrology of the Republican Traumatology and Orthopedics Center.

**Objectives:** To elucidate the injury mechanisms of thoraco-lumbar spinal cord injury in examined patients; To assess the level of spinal lesion most often involved in toraco-lumbar spinal cord injury; To assess the degree of spinal cord damage and persistent neurological disorders following thoraco-lumbar spinal cord injury; Clinical results evaluation of surgical treatment used in thoraco-lumbar spinal cord injury.

**Results:** The results obtained were: men were involved in 60% cases (n = 24) against women - 40% (n = 16), average age being 36.25 (± 2.35) years, with prevalence from rural areas.

Thoraco-lumbar spinal cord injury etiology was varied: fall from a height 50%, traffic accidents 22.5%, falls from one's own height 10%, hit with objects in the lumbar region 10% and other causes 7.5%.

The most affected anatomical level was thoraco-lumbar junction because of its anatomical features, Th12-L2 vertebrae being affected in 70% (n = 28). L3-L5 vertebrae injuries have been less frequent - 27.5% (n = 11).

Neurological damage in the study occurred in 37.5% cases of thoraco-lumbar SCI with the following consequences: monoparesis in 7.5% cases, 10% paraparesis, sphincter disturbances 10% and 5% radiculopathies.

Surgical treatment was applied with the purpose of neural decompression, stabilization and fusion. By posterior access were made 87.5% (n = 35) of surgeries, by anterior access 7.5% (n = 3) and combined approach - 5% (n = 2).

**Conclusion:** Thoraco-lumbar spinal cord injury is a serious affection of the spine, affecting working population at young age with predominant involvement of men from rural areas. Most frequent causes of spinal injury in thoraco-lumbar region are: catatraumas, road accidents, falls from own height these being responsible of the large number of spinal cord damage. The thoraco-lumbar junction was often subjected of lesion (70% cases). Predominant route of approach for the surgical treatment of SCI of thoraco-lumbar region was the posterior one.

**Keywords:** Spinal cord injury, thoraco-lumbar.

## STUDY ON DISTRIBUTION AND INVOLVEMENT IN PATHOLOGY OF ESBL BACTERIAL STRAINS IN A UNIVERSITY HOSPITAL IN ROMANIA

**Jugaru Doinita, Margineanu Catalina**

*Academic adviser:* Idomir Mihaela, M.D., Ph.D, Professor, University Transilvania, Brasov, Romania

**Background:** The selection and spreading of multidrug-resistant bacterial strains to antibiotics represents a current problem for the medical world due to irrational use of antimicrobial substances. An important resistance mechanism at ß-lactamic antibiotics was developed by ESBL-bacterial strains (extended spectrum β-lactamases bacterial strains), usually involved in nosocomial infections.

**Patients and methods:** The purpose of the clinical trial consisted in assessing the extended spectrum β- lactamases bacterial strains within Enterobacteria isolated from various samples taken from patients who were hospitalized in the Emergency County Hospital in Brasov and also the distribution on the hospital wards.

**Results**: The most often encountered germs were from the Enterobacteriaceae family (58.42%). The main species found was Escherichia coli (70.52%), followed by Enterobacter spp. (10.87%), Klebsiella spp. (10.11%), Proteus spp. (7.54%), Serratia spp. (0.65%), Citrobacter spp. (0.24%) and Morganella spp. (0.07%). The biggest frequency of positive ESBL-bacterial strains was obtained in the case of E. coli (52.45%), followed by Klebsiella spp. (23.77%), Enterobacter spp. (19.12%) and Proteus spp. (4.66%).

**Conclusions:** This study reveals monitoring necessity of multidrug-resistance to antibiotics in hospitals were this phenomenon is increasing and frightening.

# THROAT MICROBIAL FLORA IN CHILDREN DIAGNOSED WITH COMPENSATED CHRONIC TONSILITIS

**Otgon Sergiu**

*Academic adviser:* Danilov Lucian, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Chronic tonsilitis in children is one of the most common pathologies in pediatric otolaryngology practice. The main factors in development of chronic tonsilitis are: microbial factor, decreased immunity, predisposing factors.

**Purpose:** To determine the etiopathogenic role of microbial factor in the development of chronic tonsilitis in children.

**Materials and methods:** Microbial flora was examined at 34 patients diagnosed with compensated chronic tonsillitis at different parts of the pharynx: the surface of the tonsils, the tonsil gaps and nasopharynx. 19 patients were examined to the presence of fungi.

**Results:** The bacteriological examination of microbial flora in the pharynx at 34 children diagnosed with chronic compensated tonsillitis appreciated the following microorganisms: Staphylococcus aureus – 33%; Streptococcus pneumoniae – 28%; Enterococcus – 26%; E. coli – 5%; Streptococcus B-hemolitic – 2%; K. oxytoco – 2%; Pseudomonas – 2%; Haemoph. influenzae – 2%.

From 19 children examined at the presence of fungi in the pharynx, at 3 children was found Candida albicans (15,8%) associated with microbial flora.

Analyzing the results of bacteriological examinations from different areas of the pharynx- the surface of the tonsils, the tonsil gaps and in the nasopharynx, it was found that the microbial flora in these areas is the same in 53,3%, and it is different in 46,7%. Analyzing the results from the surface of the tonsils and from the tonsil gaps, it was found that the microbial flora in these areas is the same in 73,7%, it is combined in 20,6% and it is different in 5,9%. Analyzing the results from the tonsil gaps and the nasopharynx, it was found that the microbial flora in these areas is the same in 62,1%, it is combined in 20,7% and it is different in 17,2%. Analyzing the results from the surface of the tonsils and nasopharynx, it was found that the microbial flora in these areas is the same in 64,7%, it is combined in 20,6% and it is different in 14,7%.

Having examined the degree of microbial activity of Staph.aureus (according to scale from 1 to 4 "+") it was found the following results: "++++" 13 cases (32,5%), "+++" 12 cases (30%), "+" 8 cases (20%), "++" 7 cases (17,5%). Having examined the degree of microbial activity of Strept.pneumoniae (according to scale from 1 to 4 "+") it was found the following results: "+++" 18 cases (54,6%), "++" 8 cases (24,2%), "++" 7 cases (21,2%). Having examined the degree of microbial activity of (according to scale from 1 to 4 "+") it was found the following results: "+++" 18 cases (51,4%), "++++" 16 cases (45,7%), "+" 1 case (2,9%).

Having examined the sensitivity of the agents detected to the main groups of antibiotics it was established that in most cases the microbial flora is sensitive to B lactamic antibiotics, namely amoxicillin/clavulanic acid – 97%, and amoxicillin – 82,3%. To the cephalosporin group the sensitivity was 79,4%, to the macrolide group – 55-65% cases. The highest resistance of the microbial agents was showed to be to penicillin – 70,6%, and trimethoprim/sulfametazon – 69,0%.

**Conclusions:** Analyzing the results of bacteriological examinations of microbial flora in different pharyngeal areas, was established that the microbial flora in these areas is often the same.

The bacteriological examination of microbial flora in the pharynx at the examined group appreciated that most often are found the following microorganisms:Staphylococcus aureus, Streptococcus pneu-

moniae, Enterococcus, and rarely other pathogens. From the group of children examined to the presence of fungi in pharynx, Candida albicans was found in 15,8% cases.

The examnination of sensitivity to the main groups of antibiotics of the agents detected in the pharynx, it was established that in most cases the microbial flora is sensitive to the group of B lactamic antibiotics (Amoxicillin/clavulanic acid and amoxicillin), it is less sensitive to the cephalosporin group, and less sensitive to the macrolide group. The highest resistance of the microbial agents it was shown to be to the penicillin and trimethoprim/sulfametazon.

**Keywords:** Microbial flora, chronic compensated tonsillitis, children, antibiotics, fungi.

## THE FACTORS INCREASING RISK OF MORTALITY IN THE PELVIO-ABDOMINAL TRAUMATISM

**Paladii Irina, Vizitiu Aliona, Sor Elina**

*Academic adviser:* Ghidirim Gheorghe, M.D., Ph.D., Professor, Academician, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: The associated pelvio-abdominal trauma shows an unfavorable prognosis for survival. Predictors of mortality in pelvis fracture patients should be available early in the course of treatment in order to be useful.

**Aim:** The objective of this study was to establish the factors increasing risk of mortality in the pelvio-abdominal traumatism.

**Material and methods:** The studyincludes195victimswith blunt trauma: 152 patients with pelvic ring fractures and 43 patients without pelvic ring fractures. Data were collected regarding: mechanism of injury, Algover'sshockindex(SIA), associated injuries, Injury Severity Score(ISS), Glasgow Coma Scale(GCS), Revised Trauma Score(RTS), Trauma and Injury Severity Score (TRISS) and mortality. Statistical analysis was performed with Kaplan-Meier method, log rank test and Cox regression analysis for the survival functions.

**Results:** Study group(SG)-152 patientswith pelvic ring fractures. M/W- 2,16.Mean age38,81±16,03 years.ISS=38,84±6,76 points, RTS- 6.16 points, TRISS- 71,35%. Mortality 41,44% (63 patients). Pelvic fractures were classified according to the system proposed by Tile. Of 152 patients the number and proportion of observations with pelvic fractures: type A constituted 58(38,15%), lethality - 27,58%(16 patients); type B- 40(26,31%), lethality 45%(18 patients); type C- 54(35,52%) patients, lethality 53,7%(29 patients).The mortality was significantly higher in patients with unstable fracture patterns. The control group(CG)-43 patientswith associatedabdominal trauma, without damage tothe pelvis.M/W-5,1.Mean age41,37±16,74 years.ISS=29,51±15,78 points, RTS- 6.53 points, TRISS- 71,1%. Lethality- 20, 93%(9 patients).Braintrauma: SG-73,02%; CG- 51,16%. Chest trauma: SG- 76,31%; CG- 72,09%. Hemopneumothorax: SG- 40,13%; CG- 6,97%.Fracture of extremities: SG- 45,39%; CG- 16,27%. Abdominal trauma: SG- 97,36%; CG- 100%. Multiple trauma was more frequent in study group than in control group. The highest mortality rate was observed in the 60-71 age group. With Cox regression analysis, the parameters such as: pelvic ring fracture, patient age >60 years, Injury Severity Score >25, Glasgow Coma Scale score of <9, shock on admission, multipleinjuryofinternal organs were factors increasing risk of mortality.

**Conclusion:** The factors increasing risk of mortality in the pelvio-abdominal traumatism included: pelvic ring fracture, patient age >60 years, Injury Severity Score >25, Glasgow Coma Scale score of <9, shock on admission, multiple injury of internal organs.

## SURGICAL TREATMENT OF RADIAL NERVE INJURIES

**Iacubițchii Vitalie, Bobeica Maria**

*Academic adviser:* Vacarciuc Ion, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The peripheral nerve injuries have an incidence of 2-3% from all traumatisms and represent a significant clinical and social problem. The anatomical emplacement of radial nerve in direct contact with humeral bone has importance because the humeral fractures are very frequent and between 3-18% of them are associated with radial nerve injuries. The indication to surgical treatment depends of the trauma nature and type of nerve injury.

**Purpose and Objectives:** The study aims to analysis the surgical treatment's particularities at radial nerve injuries, by determining the most affected age; assessing the etiological factors; highlighting the type of radial nerve injury and finally getting the results of remote.

**Materials and methods:** The study is retrospective one, based on a group of 91 patients with radial nerve injuries who were treated in the Department "Hand Surgery and Microsurgery" of Orthopedics and Traumatology Hospital from Chisinau during the years 2007-2011. With this lesion it was 51 men and 40 women affected, by the ratio of 1,3:1. The more affected age is between 30-59 years and account for almost 50% of our study.

The most important etiologic factors of radial nerve injuries are the displaced bone fragments of thoracic limb with 74 (82,22%) cases, of which 61 caused by fractures of the humerus and 13 of the forearm bones. Among other etiologic factors include lesions with sharp objects in 8 (8,89%) cases and machinery moving in 6 (6,67%) cases.

**Results:** According to the study, the treatment of choice to the radial nerve injuries is surgery, with 74 (81,32%) cases, thus made:

- neurolysis of radial nerve in 51 (68,92%) cases, for neuropraxia type (the easiest injury, with disruption of nerve's impulses conducting) and axonotmesis (when the lesions reaches only nerve bundles and endo-, peri- and epi-nerves remain wholly or partially preserved);
- neurorraphy of radial nerve in 14 (18,92%) cases, for neurtmesis type (total interruption of nerve), it were used epiperineural sutures in all cases;
- in 8 (10,81%) cases were irreversible damage of radial nerve, and tenomioplastic operations were necessary in order to restore the lost functions of the hand;
- in 1 (1,35%) case, neuroma of the superficial branch of radial nerve, the surgical excision was necessary.

The results of remote were performed according to Michigan Score (MHQ) to 28 (37,84%) patients and all of them were rated good or very good.

**Conclusions:** Surgery has the main method of treatment in radial nerve injuries, leading to good and very good result, with a major positive social impact.

**Key words:** radial nerve injuries, humerus fractures, surgical treatment.

## OBSTRUCTIVE JAUNDICE SYNDROME CAUSED BY HEPATO-BILIO-PANCRETIC CANCERS – DIAGNOSTIC AND TREATMENT OPTIONS

**Gavriliță Maxim**

*Academic adviser*: Strelțov Liuba, M.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Hepato-bilio-pancreatic cancers are a widely spread pathology. The obstructive jaundice syndrome is one of the most common clinical manifestation of these malignancies, representing, in some cases, the first and the principal complaint of the patient. This fact determines the high importance given to the correct diagnosis procedure, which can be followed by the optimal treatment strategy.

**Objective**: The goal of this study was to evaluate the particularities in diagnostic and surgical treatment options in patients with obstructive jaundice syndrome caused by hepato-bilio-pancreatic cancers.

**Methods**: The study group consisted of 56 patients (mean age 63.85±3.8 years), who presented obstructive jaundice syndrome due to hepato-bilio-pancreatic cancers, hospitalized in different sections of "St. Arhanghel Mihail" Hospital and Republican Clinical Hospital, Moldova, during the period of 2010-2011. All the diagnostic procedures, including laboratory tests and imaging techniques were analyzed in order to determine their informativity. Also, the imaging techniques of diagnostic were compared in order to establish their reliability for determining the resectability degree. Regarding surgical procedures, our study analysed the types of operations that have been used, determining their frequency and indications.

**Results:** A useful diagnostic procedure during our study was found to be the biological tests, which showed an hyperbilirubinaemia (mean value 200±28.6 mkMol/L) and an significant elevation of the alkaline phosphatase (3 times higher then the normal value) in all the patients. Also, a useful procedure was the ultrasonography, showing a dilatation of the biliary tract in 94.6% of the cases, being the imaging technique that directed the diagnostic process towards the idea of obstructive jaundice. Finally, the most informative imaging diagnostic technique was the computer tomography (CT), that confirmed the presence of a hepato-bilio-pancreatic cancer in 95.2% of the cases, and the magnetic resonance imaging (MRI), that established the correct diagnosis in 100% of the cases. Regarding the surgical treatment options, it was found that in 92.8% of the cases palliative interventions were accomplished because of late presentation of the patients and aggressive evolution of the disease.

**Conclusions:** Clinical complaints, biological tests and ultrasonography were determined as the more useful diagnostic techniques in the initial differentiation process between the benign and the malign obstructive jaundice syndrome. CT and MRI were found to be the most informative techniques that established the correct diagnosis and determined the direction of the surgical treatment strategy.

**Key-words:** obstructive jaundice syndrome, hepato-bilio-pancreatic cancers.

## FUNCTIONAL NEUROSURGERY IN MOLDOVA. PERCUTANEUS TRIGEMINAL GANGLION COMPRESSION

**Dogaru-Peciul Constanta, Peciul Andrei, Lisii Dan**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Trigeminal neuralgia (TN) is a clinical diagnosis characterized by facial pain within the distribution of the trigeminal nerve, predominantly unilateral, triggerable, paroxysmal, severe, electric shock, and is either predominantly episodic or constant. Clinical examination shows no trigeminal

sensory disturbance and a normal neurological examination. Surgical treatment is recommended for patients with TN that is medically refractory, who are intolerant of medication or who prefer surgery as their primary treatment of this condition. Idiopathic trigeminal neuralgia has an incidence of 3-5/100000 cases. Since the description by Hartel in 1912 of transovale trigeminal rhizotomy a number of treatment options have been described. In patients unsuitable for microvascular decompression, selective interruption of the nociceptive fibers in most cases can provide pain relief. We present our experience on a case of TN treated in our clinic using C-arm guided rhizotomy.

**Methods:** Subject – 56 year old woman diagnosed with idiopathic trigeminal neuralgia, drug resistant. Pharmacotherapy for 2 years, during pain episodes with Carbamazepine 400-800 mg/day. The patient was under neroleptanalgesia in the supine position. Placement of the stylet needle according to the Hartel's landmarks. Under Rx control the needle entered at a point 2.5–3 cm lateral to the mouth's commisure targeting the foramen ovale (FO) situated at the 90° intersection of the ipsilateral pupillary line with a point 3 cm in front of the tragus. A No. 4 Fogarty balloon catheter with cannula were introduced. After the insertion of the catheter under Rx control the balloon was expanded to a pear-shaped form with injection of a radio-opaque contrast and compression for 60-90s. No complications occurred.

**Results:** Pain relief was acquired in matter of hours and recurrence produced at 3 years post interventional.

**Conclusion:** We conclude that the balloon compression seems to be an effective method in the treatment of idiopathic trigeminal neuralgia. Careful advancement of the needle and catheter with the help of anatomic landmarks and radiological guidance may minimize the risk of technical problems and post-surgical morbidity. We also emphasize that the surgeon should make every possible effort to obtain the pear-shaped balloon with compression time (60-90s) for favorable results.

**Keywords:** Image guided surgery, Trigeminal neuralgia, Functional neurosurgery, Rhizotomy, Baloon compression, Minimally invasive surgery, Frameless stereotaxy.

## SPLEEN INJURE TREATMENT RESULTS ANALYSIS

**Pavlovschi Dana, Pavlovschi Iana, Tugui Elena**

*Academic adviser:* Beschieru Traian Iacov, MD, Ph.D, Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In the case of abdominal injuries the statistics of the spleen damage is 57% while the mortality – up to 36,6%. Most cases of spleen injuries require splenectomy which may result in multiple early and late postoperative complications and even death (21,4%). The post-splenectomy syndrome that appears to be a common complication has a negative impact upon the patient's quality-of-life index and social adaptation.

**Goals:** The analysis of the treatment results and the assessment of the quality-of-life index in the case of patients who undergone splenectomy compared to the patients who undergone organ-preserving operations and non-operative treatment methods.

**Objectives:** 1. Research of the frequency and type of early post-splenectomy complications in case of patients who undergone splenectomy compared to patients who undergone organ-preserving operations and non-operative treatment methods.

2. Research of the frequency and type of late post-splenectomy complications in case of both group's patients.

**Materials and Methods**: The authors have studied 48 medical records and carried out a survey of 46 patients who had suffered from spleen injury and undergone treatment at the National Scientific-Practic Center of Emergency Medicine, RM, 2009-2011.

**Results and Discussion:** The average age of the researched group was 38,72±17,93. Early complications in the case of post-splenectomy patients have appeared in the case of 60% of patients, 44,66% being infectious complications; in the case of patients who undergone organ-preserving operations - 6,25% while the late complications. The late post-operative period in the post-splenectomy patients' group was marked by a larger number of infectious complications' cases (36,33±14,99 compared to 36,33±14,99 and 14,44±7,24 in two other groups) and by a significantly lower quality-of-life index.

**Conclusions:** 1. The frequency of early complications in the post-splenectomy group is 9 times higher than in the case of the group of patients who undergone organ-preserving operations. Most complications are caused by infections (pneumonia, sub-diaphragmatic abscess, peritonitis).

2. The late complications in the post-splenectomy group have a mostly infectious nature (increased incidence of infections and increased frequency of chronic diseases' exacerbations). The use of organ-preserving tactics in cases of spleen injuries allows to improve the quality-of-life index of operated patients in the late post-operative period.

**Key words:** splenectomy, spleen injury, quality-of-life index, post-splenectomy syndrome, complications.

## THE OBJECTIVES OF THE TREATMENT OF PATIENTS WITH VASCULAR TRAUMA

**Cerevan E., Castraveț A., Stegărescu P.**

*Academic adviser:* Castraveț A., M.D., Ph.D, University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Aim of the study:** Assessment of the possibility of surgical treatment of vascular trauma using the open wound method.

**Material and methods:** During the period of 1990-2011, 66 patients with vascular injuries associated with bacterial contamination and delabrante wounds were treated using the open wound method. Extraanatomic by-passes with reversed internal saphenous graft have been aplied to 12 patients. The initial wound was left opened for proper drainage and repeated debridement. In 54 cases the extraanatomic by-pass was not possible for such technical reasons as insufficient diameter and length of the autologous saphenous graft, considerable tissue destruction and contamination in the region with opportunity to pass the graft. In these patients open wound vascular repair was used.

**Results:** During the postoperative period 2 cases of erosive bleeding occurred, which were stopped by applying autovenous patches, adequate wound drainage and suturing on granulation tissue. Such interventions as arterial ligation and amputations were not necessary.

**Conclusion:** In cases of vascular trauma associated with extended damage and important bacterial contamination of the adjacent tissue, it is preferable to perform extraanatomic by-passes within viable and uncontaminated tissues. In cases when the by-pass cannot be performed, revascularization in situ using the open wound method is required. Access for control and repeated debridement of the tissues ajacent to the repaired vessel is realized through the unsutured postoperative wound or through large additional contraperture incisions.

**Keyword:** vascular trauma, extraanatomic by-pass, autologous saphenous graft.

## THE EXPERIENCE IN THE RECONSTRUCTION OF INFERIOR VENA CAVA IN CASES OF RENAL CANCER METASTATIC CAVAL WALL INVASION

**Cerevan E., Castraveț A., Stegarescu P.**

*Academic advisor:* Castraveț A., M.D., Ph.D, University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In patients with malign renal tumors, inferior vena cava is involved in 4-10%, thus representing a serious barrier for radical intervention.

**Aim of study:** The aim of this study is to analyze the results of surgical treatment of 18 patients (in 15 cases the right kidney was involved, in two cases the left and one case the only right kidney), with metastatic caval wall invasion, metastatic thrombus in the inferior vena cava, and metastasis of paracaval and paraaortal lymph nodes.

**Material and methods:** The preoperative diagnosis was made using ultrasonnography, duplex scanning, CT angiography and angiography. Preoperative renal artery embolization was preferable. All patients underwent nefrectomy with retroperitoneal lymph nodes dissection. The reconstruction of the inferior vena cava was made by several methods: removement of the metastatic thrombus with caval suturing, resection of vena cava with grafting or patching. In 15 cases the tumoral caval wall invasion was demonstrated by postoperative histology analysis.

**Results:** There has been one intraoperative lethal case in a patient that had a cardiopulmonary bypass system applied for removement of a metastatic thrombus that has reached the right atrium. The cause of death was disseminated intravascular coagulation. In 15 cases the postoperative outcome was satisfactory, without major complications. In one case the patient is dependent of hemodialysis.

**Conclusion**: The achieved results indicate that resection of the affected cava with its grafting is the elective method for a more effective treatment of these tumors.

**Keywords:** inferior vena cava, renal cancer, grafting of vena cava.

## COMPARISON BETWEEN TRADITIONAL EDUCATION METHODS AND SIMULATORS BASED EDUCATION AT THE ACUTE CARE ENVIRONMENT: AN OVERVIEW

**Cuciuc V., Kraizel M.**

*Academic adviser*: Cernit V., M.D., Turchin R., M.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The usage of medical simulation had been already used as an educational tool at the time of ancient cultures, in the form of animals or human cadavers. As the technology had been developing through the years , a more accurate methods of education were developed at the form of computerized manikins that are able to imitate acute care emergency scenarios as close to the reality as it can be considering nowadays technology limitations. Never the less now a days the usage of simulation based education is implemented worldwide at every medical domain, starting with simple procedures like insertion of central line to performing endoscopies.

At the acute care setup there is a demand for fast and accurate decision making and to perform life saving procedures as fast as possible like endotracheal tube insertion, Cardio Pulmonary Resuscitation and tracheostomy, etc.

A medical simulator is a perfect training tool, which allows the practitioner to err and to develop enough competencies at performing these procedures without endangering real patients, what is not achievable by traditional methods of education.

**Methods:** In order to introduce the prevail of the simulation based education over the traditional methods , we have a qualitative synthesis of information from three leading simulation centers world wide (Medical Simulation center at Tel Ha shomer hospital in Ramat-Gan , Israel, Northwestern Memorial hospital's simulation center- Florida, USA , John Hopkins simulation center- Maryland ,USA ,). We have compared the results that were achieved by medical stuff that was trained by traditional methods only to medical stuff who underwent a training with medical simulators additionally to the traditional methods. In this study we compared 4 parameters of the whole that were checked at the scenarios which tested the particpants : a) Time took to recognize the emergency situation b) Deviation of American Heart Association protocols c) Attempts till successful Endotracheal tube insertion d) Benefit analysis cost.

**Results:** All the participants in the studies were tested by checklist that included criteria for evaluation in the whole parameters the "Traditionally Trained"(TT) medical stuff achieved worse results, than the "Simulation Trained"(ST) medical stuff. At the TT group only 88% percent recognized the emergency situation while in the ST group 98% percent recognized the emergency situation. Moreover the TT trained group performed successful endotracheal insertion by more attempts (3-4) than the ST group (1-2). Within the two groups there were deviations from the American Heart Association protocols but the ST group deviated less times while running the protocols. The fourth parameters concern the financial aspect of the education by simulators versus traditional methods. By using simulators less equipment were broken or missused in the real situation , the annual benefit from the simulation center was on average 131,000$ annually and the spending of establishing such aa one returned itself approximately 131 days from the beginning of its action.

**Conclusions:** Using a simulation based educational program scenary, enables to achieve better results at the acute care department. All these are attainable thanks to providing trainee ability and to correct his future actions without endangering the real patients. The variety of the scenarios enables us to promote the usage of simulators at any step of education of a medical stuff, starting with students and finishing with residents and specialists. Thus it is quite good addition that improoves our skills and make us better specialists.

**Key words:** Medical Simulation Center, American Heart Association, Cardio Pulmonary Resuscitation **mulatiom center- FFlorida , USAs simulatiom center- Florida , USAhered information from five simulations centers world wide en**

## SURGICAL TREATMENT OF ACUTE MESENTERIC ISCHEMIA

**Cernat M., Craciun I., Zastavnitchi Gh., Mishin I.**

*Academic adviser:* Ghidirim Gheorghe, M.D., Ph.D., Professor, Academician, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Acute mesenteric ischemia (AMI) is an abdominal catastrophe. Advanced age and diagnosis delay are associated with increased morbidity and mortality rates. The optimal surgical strategy for AMI is under evaluation.

**Aim**: To evaluate the early results of different treatment strategies for AMI.

Material and methods: During last three years a total of 35 consecutive pts with AMI were admitted to our unit. The mean (±SD) time interval between AMI symptoms onset and admission was 34.7±2.1 h.

Physiological parameters (mean±SD) of pts were: ASA score – 3.3±0.1, APACHE score – 25.2±1.6 and POSSUM – 36.9±1.8. In most cases AMI was induced by superior mesenteric artery (SMA) embolism (54.3%, n = 19) followed by SMA thrombosis (25.7%, n= 9) and venous thrombosis (VT) (20%, n=7).

**Results:** The affected bowel segments were: small intestine (n=16), small intestine + colon (n=13) and total ischemia (n=6). Surgical procedures were as follows: small intestine resection (n=14) with SMA embolectomy (n=2), small intestine + right colon (n=12) and small intestine + subtotal colectomy (n=1). In two cases of VT affected intestinal segments were not resected, instead anticoagulation treatment was initiated and the intestinal viability was confirmed by second-look laparotomy. Explorative laparotomy was used only in advanced intestinal gangrene (n=6). Twenty five pts with massive injury were scheduled for staged damage control approach (immediate resection of the involved bowel without gastrointestinal continuity reconstruction, patients' resuscitation in ICU) combined with Negative Pressure Wound Therapy (V.A.C., KCI or homemade) and later on definitive reconstructive procedure (delayed anastomosis). Primary anastomoses were performed only in 2 pts with short segmental intestinal infarction. The overall 30-days mortality rate was 24/35, 68.5% (in non-total AMI – 18/29, 62%, in VT *zero*).

Conclusions: Early diagnosis and prompt surgery improves the AMI outcome. Colon involved in AMI is a poor prognosis sign. Damage control approach improves the AMI patients' survival.

**Key words**: acute mesenteric ischemia, surgery, damage control.

## MINIMALLY INVASIVE TREATMENT OF BACTERIAL ABSCESSES OF THE LIVER

**Dubrov E., Perchik S., Popova Y., Petrenko Y, Karapysh V.**

*Academic adviser*: Khatsko Vladimir, M.D., Ph.D., Professor, Donetsk National Medical University "M. Gorky", Donetsk, Ukraine

**Introduction:** The problem of early detection and treatment tactics in liver abscess in our time is not fully resolved, due to lack of in-depth study of this section surgery.

**Aim:** The study of the effectiveness and improve puncture - aspiration treatment of patients with bacterial abscesses of the liver under laparoscopic control, reduction of morbidity and mortality.

**Materials and methods:** Over 10 years in the hospital cured 72 patients with BAP, including men - 41 (58%), women - 31 (42%). The patients\' age from 19 to 72 years, an average of 51,7 ± 3,2 years, 40.2% were older than 50 years. Applied (in various combinations), the following methods: clinical, laboratory, ultrasound (ultrasonography) or computed tomography (CT), laparoscopy, cytological and bacteriological examination of the contents of a bacterial abscess of the liver. For the ultrasound device used sonographic «Dornier-5200» in color Doppler, using probes of 3.5 and 5 MHz. For laparoscopy and interventions under the control of machines and tools used firms «Wolf» and «Karl Storz» (Germany). BAP drainage was carried out by the installation of drainage Seldinger. Biliary drainage for used self-locking drainage «Meadox» and «Cook».

**Results:** The patients were divided into two groups according to age, sex, location of abscess, the severity of the initial state. In group I included 34 patients who were operated on during the period 2001 - 2005. Using conventional surgical methods. In the II group included 38 patients who were hospitalized in 2006 - 2010. Surgery was carried out by puncture or drainage under laparoscopic control. In the first group of patients (34), after laparotomy, gepatotomii, sanitation and drainage of purulent center, 7 (20.6%) had observed complications (wound abscess, pneumonia) and 1 patient died from sepsis. Average length of stay in hospital the patient was 27 ± 1,9 days.

**Conclusions:** Minimally invasive interventions for bacterial abscess of the liver under laparoscopic control reduces the duration of hospitalization by an average of 6-8 days may reduce the morbidity and mortality.

**Key words:** bacterial abscesses of the liver, laparoscopic control.

## CONTEMPORARY TREATMENT OF HIATAL HERNIA AND GASTROESOPHAGEAL REFLUX DISEASE

**Țugui Elena, Pavlovschi Dana, Pavlovschi Pavel**

*Academic adviser:* Iacub Vladimir, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chișinău, Republic of Moldova

**Introduction:** The Gastroesophageal Reflux Disease (GERD) is the primary concern for the XXI century gastroenterology due to the hereinafter mentioned facts:

- GERD ranks among the most common gastrointestinal diseases among mature population; 10% of global population suffers from GERD, fact which caused the appearance of the term 'Gastroesophageal Reflux' in the 10th edition of the International Classification of Diseases.
- GERD requires a long-lasting antacid medication (min 3–6 months) and frequently repeated treatment courses inducing a high treatment cost.
- Patients suffering from GERD are exposed to the high risk of morphohistological inflammatory, metaplasia and cancer complications (Reflux Esophagitis, Esofag Barrette, Esophagial Adenocarcinoma).

**Goal:** Optimisation of contemporary individualized treatment of HH and GERD.

**Objectives:**

- Research of drug treatment schemes to elucidate the most efficient treatment schemes in curing the GERD depending on its evolution
- Research and description of indications, methodology and short-term results of laparoscopic surgeries performed under GERD treatment by comparing the efficiency and gaps created by the implemented technologies.
- Research of endoscopic methodology of GERD surgery to elucidate strengths and gaps among the short- and long-term results.

**Materials and methods:** The authors highlighted the principles of the GERD treatment basing on data received after the retrospective, descriptive and monocentric study performed at the Municipal Clinical Hospital Nr. 1, Chisinau, Republic of Moldova, during 2010 – 2012. The authors have studied medical records of a group of 30 patients hospitalized according to the schedule into the section 'Aseptic Surgery' being diagnosed with GERD and HH.

**Results:**

- Medical treatment: Is implemented step by step (step up/down) depending on the clinical and paraclinical evolution, is long-lasting (2-6 months) with disease's relapse in 87-90% of cases at 12 months after the cessation of the treatment, PPI appear to be the most efficient causing 61% of clinical resolution cases compared to 41% in H2 blockers' case.
- The endoscopic treatment: is poorly studied with short term results (12 months) that shows the reduction of the ER in 62% cases and healing in 40%. The abandoning of the PPI post operative treatment in 87% of cases. Is a bridge between the drug treatment and the laparoscopic one of the GERD.
- The surgery tactics could be applied in only 10% of the total number of GER patients who face

at least several conditions: HH and GER symptoms, complications (ER, EB, AE, SDH), the conservative treatment failed or appeared to be impossible, too young age (being an asset in the choice of the therapeutical technique).

**Conclusions:** The study of the GERD modern treatment methods, both drug and surgery, has concluded that a patient who suffers from GERD needs an individual approach taking into consideration the stage and the evolution of the disease to deal successfully with it.

**Key words:** GERD, HH, 30 patients, individual treatment.

## PHACOEMULSIFICATION OF THE CRYSTALLINELENS WITH INTRACAPSULAR IMPLANT FOR THE CORRECTION OF HIGH MYOPIA

**Borovic-Pavlovschi Ecaterina**

*Academic adviser*: Ivanov G., M.D., Ph.D., Lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Myopia is a social problem, with a major impact on patients'quality of life, especially at those with high myopia. There are several known methods for correction of high myopia: glasses, contact lenses, surgery to reduce the corneal refractive power with the help of laser, the removal of the transparent crystalline lens or with different degrees of opacity etc.Currently, the surgery ofthe removal of the lens, known since the late 19th century, becomes up-to-date again, dueto its performance at the microsurgical level, using modern apparatus and instruments, minimizing at maximum the appearance of the complications.

**Goal**: The evaluation of short-term results of the refractive surgery by phacoemulsification and implantationin the capsular bag, of the artificial mono-, multifocal or toriclenses, to correct high myopia, that can't be solved by other solutions.

**Objectives**: - the study of the data of uncorrected and corrected visual acuity (VA) with glasses or contact lenses preoperative and postoperative; - evaluation of the keratometricdatapre- and postoperative;–the analysis of spherical and cylindrical refraction before surgery and after treatment;

**Material and methods**: The study included 30 patients with high myopia (52 eyes), 4 men and 27 women, aged from 19-85 years: 19-39 years - 7 patients, 40-69 years - 16 patients, 70 - 85 years - 7 patients, operated at Ophthalmological Medical CenterOvisus, during the years 2009-2011, in whom the transparent lens has been removed or with different degrees of opacity, by phacoemulsification, making an incision of 2.2 mm, with intracapsular implantation of pseudofac: withAcrySof IQ - 26 patients (44 eyes), with AcrySof Restore - 2 patients (4 eyes), with AcrySofToric - 2 patients (4 eyes). The examination of the patients was performed preoperative and postoperative at least after 2 weeks, being evaluated the refractive status (spherical and cylindrical powers, spherical equivalent), keratometric values and VA. In all cases capsular tension ringswere used.

**Results**: After surgical treatment, the VA of the patients improved in all cases - 100%. There were no significant intraoperative or postoperativecomplications. All patients postoperative, without correction, had won one or more lines of VA. In the group of patients with corneal astigmatism, residual astigmatism value was 90% less 2.0 diopters (D). 92% of patients required an optical distance correction (those operated with AcrySof IQ and Toric), with an average postoperative spherical equivalent of -2.0 D. 2 patients (4 eyes) didn't require a distance or near correction (operated with AcrySof Restore). At 23% was revealeda postoperative refractive astigmatism, with a cylinder power between -0.5 and - 2 D.

**Conclusion:** Minimally invasive surgical technique of lens extraction by phacoemulsification,using intraocular qualitative implants, placed in the capsular bag (AcrySof IQ, AcrySof Restore, AcrySof Toric) is the most effective way to get the best vision in patients with high myopia, with contraindications for other solutions of approaching the problem of functional vision reabilitation.

**Keywords**: high myopie, crystalline, phacoemulsification.

## THE EFFICACETY IN ADMINISTRATION OF AVASTIN (BEVACIZUMAB) IN AGE RELATED MACULAR DEGENERATION

**Sergiu Andronic, Valeriu Cusnir, Vitalie Cusnir**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** One of the most important problems of the modern ophthalmology is the exudative form of Age Related Macular Degeneration (ARMD).

**Aim:** The efficacy appreciation of the anti-VEGF treatment in the exudative form of ARMD.

**The material and methods:** The study included 28 patients (28 affected eyes) affected by ARMD the exudative form, surveyed and treated in the Ophthalmology Clinic Nr.2 of SUMPh "Nicolae Testemitanu". The patients were divided in 2 groups: basic group 15 patients – 3 men and 12 women and witness group 13 patients – 4 men and 9 women, medium age 72±2 years. The examination was performed before and after the treatment: VA – with and without correction; Amsler's test; Sleet lamp examination of all eye's segments in maximal midriasis, including Volk lens examination; macular photography; OCT; computer perimetria for 10° and 60°; fluorescent angiography. The 15 patients (15 affected eyes) from the basic lot were treated by intravitrian injection of Avastin: 8 patients 1 dose, 3 patients 2 doses with one month distance; 4 patient 3 doses 1 month distance.

**Results:** During Avastin injection and postoperative period, no complications were noted. Avastin (Bevacizumab) application was evaluated by repeated examinations. VA with correction, increased in 60% of the cases (6 affected eyes) from 0,04-0.09, a week after the injection, up to 0.09-0.16 in 14 days after the injection and up to 0.16-0.25, a month past after the first injection. In 40% of the cases (4 affected eyes), visual acuity rested unchanged. Central scotoma surface diminished in 70% of the cases (7 eyes) and rested unchanged in 30% (3 affected eyes) at a month after the first injection. At OCT examination of the macula it has been determined a significant diminishment of Macula Edema (ME) adjustment of the detached neuroepithelium and retinal pigmented epithelium, diminution of the vascular complex and general thickness of the macular zone: from 550±30mkm to 260±30mkm in 90% (9 eyes) and just in 1 case it rested unchanged. After the second injection at 2 patients (2 affected eyes), we remarked an acuity raise with 0.06-0.1 and a diminution of the edema from 280±30mkm to 210±30mkm. In the first case we repeated the injection 3 times with 1 month interval: ME diminished in 3 months from 730mkm to 340mkm. Traditional treated patients had no visual acuity rise and no ME diminution (OCT data used).

**Conclusion:** Effectuating this study we established that the use of Avastin (Bevacizumab) in the treatment of ARMD the exudative form is effective, comparatively with the traditional treatment.

**Key words**: retina, macular degeneration, anti-VEGF.

## DIAGNOSIS AND SURGICAL MANAGEMENT OF ACUTE BILIARY PANCREATITIS

**Karapysh V., Popova Y., Jjonova V., Alabbass Zaid, Kisluk K.**

*Academic adviser*: Khatsko Vladimir, M.D., Ph.D., Professor, Donetsk National Medical University "M. Gorky", Donetsk, Ukraine

**Introduction:** Acute pancreatitis is one of the most common diseases of the abdominal cavity. Improving the treatment policy has reduced mortality, but not enough to consider the problem solved.

**Aim:** Optimization of diagnostic and surgical treatment of acute biliary pancreatitis (ABP).

**Materials and methods:** The results of diagnosis and treatment of 226 patients with acute pancreatitis (AP), of whom 118 (52.5%) had ABP. Women were 86 (72.5%), men - 32 (27.5%). History of gallstone disease (GSD) - from 2 to 9 years. Patients are often treated in hospitals with temporary success. Patients applied the methods of investigation: clinical, laboratory, ultrasound (ultrasonography), endoscopic retrograde cholangiopancreatography (ERCP), fibrogastroduodenoscopy (FGDS), laparoscopy.

The I group (main) consist of 82 (60.6%) patients with ABP who underwent endoscopic papillosphincterotomy (EPST), the II group (control) - 36 (30.4%) - after the traditional methods of treatment. The 20 patients out of the 36 patients in group II had interstitial pancreatitis, 16 - destructive.

**Results:** The following operations were performed for the first group of patients: resection of the tail of the pancreas - 14, cholecystectomy (CE), holedohostomiya from Wisniewski - 16, holedohoduodenostomiya - 6. The various postoperative complications had 11 (32.3%) patients, mortality was 11.7%. Long-term results in terms of 2 to 8 years were studied in 30 men. Good noted in 62.7%, satisfactory - in 26.5% and unsatisfactory - in 10.8%.

Postoperative complications in patients of group II was in 4 (5.4%) patients had no deaths. Long-term results were studied in 63 (76.8%) patients: the good - in 73.5% and satisfactory - in 26.5%.

**Conclusions:** Thus, in the treatment of ABP is expedient to eliminate bile and pancreatic hypertension. The intervention should be individualized, depending of the pathological changes in the pancreas.

**Key words**: acute biliary pancreatitis (ABP), gallstone disease (GSD), papillosphincterotomy (EPST).

## ABILITY TO DIAGNOSE CHRONIC EXTERNAL BILIARY FISTULA CALCULOUS ORIGIN

**Karapysh V., Petrenko Y., Baziyan – Kuhto N., Garkaviy S., Kostik B.**

*Academic adviser*: Khatsko Vladimir, M.D., Ph.D., Professor, Donetsk National Medical University "M. Gorky", Donetsk, Ukraine

**Introduction:** Chronic external biliary fistulas occur in 0.4-2.4% of patients with diseases of the biliary tract and are likely to be one of the complications of surgical treatment of diseases of the biliary tract.

**Aim:** Choose the most appropriate methods of diagnosis of chronic external biliary fistula calculous etiology by improving the diagnostic algorithm.

**Materials and methods:** Analyzed the results of diagnosis 86 patients with chronic external biliary fistula. 79 were operated previously in other hospitals. Fistula after they have formed the following operations: cholecystostomy - 23, cholecystectomy, holedohostomii on Wisniewski - 37, cholecystectomy, choledochostomy through the cystic duct stump - 24, holedohostomii - 2. Of the 86 patients 72 were operated in urgent procedure. To clarify the diagnosis chronic external biliary fistula used the following

methods: fistulocholangiography - 76, ultrasound - 71 CT - 32, fistulocholangioscopy - 9, endoscopic retrograde cholangiopancreatography - 9, the definition of sterkobilina in feces and urine urobilin - 30, determination of bilirubin in the fistulous the discharge - 17, test with methylene blue - 16.

**Results:** One of the most informative methods for studying bile fistula is fistulocholangiography. With it identified: bile duct stones - for 74 people, cystic duct stone - 12, stenosis of the sphincter of Oddi - 48 people. Endoscopic retrograde pancreatography performed in 9 patients with follow-up and removal of stone papillosfinkterotomiey of choledochal - in 5. The accuracy of ultrasound in detecting choledocholithiasis was 86%, computed tomography - 92.3%. Fistulocholagioscopy with lithotomy was effective in 9 patients.

**Conclusions:** None of the methods of preoperative diagnosis of chronic external biliary fistula is universal. The most valuable diagnostic information about the state of the bile ducts give fistulocholangiography, endoscopic retrograde pancreatography in some cases supplemented by ultrasound or computed tomography.

**Key words:** external biliary fistula calculous etiology, fistulocholangiography, endoscopic retrograde pancreatography.

## THE ROLE OF CT AND BIOPSY IN THE ASSESSMENT OF NASOPHARYNGEAL CARCINOMA

**Luchian Maria Luiza, Mihai Victor, Filip Adriana, Oprea Alina, Voinea Andreea**

*Academic adviser:* Ciofu Claudia, M.D., Ph.D.; Victor Stoica, M.D., Ph.D., Medical and Pharmaceutical University "Carol Davila", Bucharest, Romania

**Introduction:** Nasopharyngeal carcinoma is the most common cancer originating in the nasopharynx. However, the lack of symptoms makes it difficult to diagnose. It is most frequent in males and when it occurs in women, viral and genetic factors are involved.

**Methods:** We present the case of a female patient who was admitted to the hospital with severe headache and tinnitus. Symptoms started 3 months prior to hospitalization, but without response to analgesics. She was diagnosed in March 2011 with mild hypertension, but she did not follow any treatment.

We performed a complete examination of the patient .Except for high blood pressure (180 mmHg/ 70mmHg) and increased VSH the analyses were normal. In June 2011 the patient came to our clinic complaining of the same symptoms. During physical examination we discovered a latero-cervical nodular formation, not as a result of a number of diagnostic modalities were used in order to evaluate and determine the diagnosis: thyroid echography, barium examination of esophagus, stomach and duodenum, abdominal echography, CT.

**Results:** CT and the biopsy of the formation confirmed the diagnosis: nasopharyngeal carcinoma.

**Conclusion:** The paraclinical examination is fundamental and most valuable step in order to put the right diagnosis in this particular case.

**Key words:** carcinoma, CT, headache, hypertension.

# CHANGES IN THE FUNCTIONING OF THE VISUAL ANALYZER IN CASE OF SYSTEMIC PATHOLOGY DECOMPENSATION

**Rudkovskaya O., Choban V., Kopelchuk V., Lastivka O.**

Bukovinian State Medical University, Chernovtsy, Ukraine

**Introduction:** The functioning of the visual analyzer is energy-consuming. A hypothesis is put forward to the effect that it is not advantageous ergonomically for the human organism to support the work of the visual apparatus in case of decompensation of systemic diseases, resulting in its blocking. The saved reserves of the host defenses prolong the human life for a certain period of time. It is known that the functioning of the visual analyzer is very energy- consuming. It is provided by the functioning of 6 pairs of the cranial nerves (half out of the available 12 pairs).

**Hypothesis:** blocking the visual analyzer (from the point of view of preserving the reserves of the host defenses) may be useful for the organism, struggling for its survival.

When a malignant tumor, really threatening a human life, develops in the organism, tumor metastases in choroidea are often observed, namely –into the central portion of the fundus of the eye. It causes a rapid and considerable reduction of the visual acuity (e.g. from 1.0 to photoperception) .The development of this particular pathology may be regarded as a defense compensatory reaction of the organism. The exclusion of one eye from the activity reduces man's energy expenditure on the functioning of the visual apparatus (which appears to be large enough) and saves the body's reserves for a struggle with fundamental diseases.

In case of an extreme emaciation of the organism by the neoplastic process (in nearly 1/5 of the patients) there occurs bilateral tumor dissemination into the central portions of the choroid with a complete deprivation of the visual analyzer. It prolongs a patient's life for a certain period of time. We have come to such a conclusion, while analyzing the clinical presentation of another severe disease – disseminated sclerosis (DS). According to bibliographical data, a more benign disease's course is registered in patients with one of the manifestations of DS – retrobulbar neuritis. An exacerbation of retrobulbar neuritis of one or both eyes in patients with DS delays the development of rough focal signs in these patients. They sometimes do not appear in them at all. Therefore, a sharp reduction of vision or complete blindness of one or two eyes due to retrobulbar neuritis (blocking of the visual analyzer) improves the DS course that may also be regulated as a body's compensatory reaction to a severe systemic disease.

Malignant blood tumors in children (a systemic disease) emaciate the host defenses of the child to such an extent that metastases in the orbit, are as a rule, bilateral whereas in case of nasopharyngeal carcinoma (a local process) – unilateral.

Irreversible changes of the eyes with a loss of vision develop in 2 % of the cases with such a serious disease as rheumatism, despite an adequate cure started in time.

All the above –stated concern diabetes mellitus and essential hypertension as well. In case of a decompensation of these processes diabetic and hypertensive retinopathies which sharply reduce the eyesight of a patient down to blindness develop there. We regard the pathology in question as a body's compensatory reaction, aimed at economizing energy consumption in a struggle with the fundamental disease in order to prolong a man's life for a certain period of time.

All the efforts of ophthalmologists to enhance the visual functions in patients with terminal stages of diabetic and hypertensive retinopathy are not effective as a rule, corroborating, to our way of thinking , a hypothesis suggested by us to the effect that the functioning of the visual apparatus is disadvantageous ergonomically to the organism in such a situation.

**Conclusions:** Thus, the deprivation of the visual analyzer at late stages of grave diseases is a body's compensatory reaction aimed at economizing the reserves for man's survival. Attempts to restore eyesight in this particular situation are unpromising.

**Key words:** visual analyzer, compensatory reaction, ergonomics.

## DETECTION OF LATE COMPLICATIONS OF THE PERMANENT VASCULAR ACCESS IN HEMODIALYSED PATIENTS USING ULTRASOUND AND IMAGING METHODS. PILOT STUDY

**Cernat Mircea, Andrei Vasiliev**

*Academic adviser:* Igor Mişin, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The strategic direction to increase the lifetime of the PVA is to ensure proper function for the existing PVA maximally possible by early diagnosis of potential complications assessing the vascular diameter, hemodynamic characteristics of PVA and vascular status of existing reserves using DU and CT angiography with 3D reconstruction.

**Aim:** Detection of late complications of the permanent (P) vascular access (VA) in hemodialysed patients using Dupplex ultrasound (DU) and CT angiography with 3D reconstruction.

**Material and methods:** between 2006 and 2012 – 82 patients were enrolled in the study with end-stage chronic renal failure who underwent iterative hemodialysis (HD) in various Hemodialysis departments: IMPSP CNŞPMU, IMSP SCR, IMSP SCM №3 „Sfântă Treime", IMSP SR Comrat, IMSP SR Cahul, IMSP SM Bălți, ICŞDOSMC. The mean age was 49.62±1.48 (27-72) years; the male/female ratio was 42/40. The mean duration of treatment with iterative HD was 5.61±0.52 (0.2-16) years. DU was performed with the device „Vivid S6", General Eectrics, Medical Systems. Qualitative and quantitative parameters of blood flow in arterio-venous fistula (AVF), vascular resistance index and pulsatility index were evaluated. In 7 (8.5%) patients, because of considerable difficulties in interpretation of results by DU, CT angiography with 3D reconstruction was performed using Siemens Emotion 16 (Germany) with Ultravist solution – 150 ml i/v.

**Results:** in case of AVF stenosis the blood flow determined by DU was turbulent and collateral, decreased to 500-600 ml/min; in cases of aneurysms – it was 2500-5000 ml/min. 3D-CT angiography allowed visualization of the full trajectory of AVF, including arterio-venous anastomosis, permeability/obstruction of central vein, the degree and extension of the stenosis. In 3 cases the diagnosis of central vein stenosis was confirmed. In one case of multiple aneurysms of AVF the full path of the VA was viewed, including the arterio-venous anastomosis with multiple aneurysmal dilatation (n=3). In 3 patients the depletion of upper limbs vascular reserves was found. Late complications of VA were diagnosed in 44 patients (53.6%). In 24 (29.2%) patients the depletion of vascular reserves were established. The complications pattern: AVF thrombosis – 29.5% (n=13), AVF stenosis – 36.4% (n=16), aneurysm – 29.5% (n=13), blood steal syndrome – 2.3% (n=1), carpal tunnel syndrome – 2.3% (n=1).

**Conclusions:** DU of upper limb vessels is the method of choice in studying hemodynamic parameters of AVF. CT angiography provides significant advantages compared to DU in determining the degree and extent of stenosis, in assessing the state of the vascular system of the upper limbs and of central veins, and also in determining the vascular reserves of the patient in order to choose the optimal method of correction of complications.

# DENTAL MEDICINE SECTION

## STATISTICAL ASPECTS OF ISOLATED TRAUMA IN MANDIBULAR FRACTURES

**Cazacu Cornel, Hîțu Dumitru, Şcerbatiuc Dumitru, Vasile Vlas**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: During the last 23 years the isolated trauma in mandibular fractures decreased by 17.8% and this can be explained by the decreasing number of beds from 60 (1987) to 40 beds (2010) and decrease of population. The transition from state insured medicine to paid medical insurance is another factor that contributed to the reduction of number theof patients hospitalized with facial trauma. Isolated fracture of mandible constitutes 79.28% of all facial injuries. Angular region of mandible, being rather weak, it was involved in 70%.

**The importance of subject**: Trauma has lately become a social problem. These injuries have a delayed increase in importance and are difficult to be treated due to the complexity of trauma and possible complications (Burlibaşa C., Hîțu D.).Statistical studies on facial trauma, appreciate their share at 10-15% of all injuries (Hîțu D.). Restoring the form and function is the main goal in treating disturbed trauma (Burlibaşa C., Hîțu D.).

**Purpose:** Comparative analysis of facial trauma and fractures of the mandible with a gap of 23 years and existing methods of treatment.

**Objectives**:

- to establish a conclusion on progress in the treatment of patients with mandibular fractures
- to assess knowledge and attitudes of the population with mandibular fracture about its prevention.

**Research materials and methods:** To achieve the goal we examined and assisted 908 patients with facial trauma during the years 1987 to 2010. As study material I used the medical records.

**Results:**

Over 78.28% of patients (in 1987), were from Chisinau, but in 2010 the number of citizens decreased to 30.96%.

The cause of trauma in 48.11% cases was falling, followed by 47.28% - aggression, and in 4% of them road accidents. Falls increased 2 times and aggression decreased by 15.87%.

In the first 24 hours for help were registered 62.34% of accidents, the number increasing twice in this period, and after four days turned to 8.78%, 2.2% more than in 1987.

Alcohol was present in 8.8% in1987 and 11.1% in 2010 in patients with mandibular fracture, who sought help within 24 hours, requiring diagnostic evaluation.

Orthopedic treatment used in maxillary fracture was recorded in 79.01% of cases during 23 years that has dropped by 31%, and has been widely implemented a new method – the surgical one

**Conclusions:**

- Individual splints were commonly used (in79%) in the treatment due to the low cost and easy manufacturing technique.
- In 2010 a new method – the surgical Plate fixation has been widely implemented.
- Increased public awareness also increased the number of patients seeking medical help in the first 24 hours;
- Over 23 years of trauma isolated mandibular fractures decreased by 17.8%.

## CLINICAL ASPECTS OF ORAL CANDIDIASIS

**Eremciuc Natalia, Musteata Victoria**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Mouth diseases are an important part of dentistry treatment and present a huge interest for dentists. In the recent years the number of diseases caused by pathogenic micro-conditions significantly increased. Among them the mucosal candidiasis mouth has a distinct place. Levuriforme mushrooms of the genus Candida predominate unicellular organisms which multiply by budding comprising about 150 species of fungi.Seven of them (C. albicans, C. tropicalis, C. parapsilosis, C. krusei, C. kefyr, C. glabrata and C. guilliermondi.) are medically recognized as important pathogens. In the human pathology the biggest role has the candidiasis caused by Candida albicans. In humans, these fungi are detected in the lining of the mouth, gastrointestinal tract, and urogenital organs. Oral candidiasis caused in most cases by C. albicans preferentially affects the elderly, young children and bearers of dental prostheses.

**Purpose**: The purpose of the work is to study deeply oral candidiasis, the selection and practical application of a rational and effective in the treatment of oral candidiasis.

**Materials and methods:** The study included a group of 10 people who underwent a thorough clinical and laboratory examination: 1) Research of fungal elements by direct examination of the collected material 2) Isolation of the fungi from growing on different culture mediums.

**Results:** After the study conducted and based on subjective data of the clinical inspection, the differential diagnosis of the laboratory exam was established in 3 cases of OC. Treatment of patients with OC. was adjusted individually, taking into consideration the general condition and the particular process. In all the cases treatment included: General-l.Tab. Micosist (Fluconazol), 2. Caps. Linex, 3. Hiposensibilizante - Claritin, 4. Vitaminoterapie - Aevit-under listing. Local-1. Reclamation of the mouth, 2. Drug processing of the oral cavity with 1% ground. hydrogen peroxide, irrigations with Furacilin solution, applications with soil. Betadin and applications with Nistatin. 3. Echinacea - sucking piles.

**Conclusions**-Oral candidiasis is an important part of dentistry treatment and presents a huge interest for dentists. Timely untreated it can lead to complications, in extreme cases, when it becomes disseminated, can be lethal, so it should be diagnosed and treated in time.

## MODERN ASPECTS OF RETENTION IN DIFFERENT TYPES OF MALOCCLUSIONS

**Mihailovici Corina, Mihailovici Pavel**

*Academic adviser:* Mihailovici Gheorghe, M.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction**: Retention in relation to orthodontics might be stated as follows: the holding of teeth in ideal esthetics and functional positions in order to maintain the final results of the treatment. Nowadays retention is considered to be an integral part of the orthodontic therapy. On this point of view, Riedel makes his own statement: "More and more orthodontists start to understand that retention period does not represent a section out of orthodontic therapy, but is a part of it and should be included in treatment planning".

**Project aim:** To study the possibilities of using fixed retainers in different zones of dental arches after malocclusion treatment by Straight-Wire technique.

**Purpose:**

1. To determine the ways and conditions of achieving an efficient and stable retention in patients with lateral malocclusions.

2. To study the ways of creating a durable temporary retention after preprosthetic orthodontic treatment.

3. To determine the possibilities of applying multiflex –wire, fixed retainer in the front zone of the superior dental arch.

**Materials and Methods**: We have selected 12 patients, aged 12-18, for achieveing the goals and objectives of our study. Patients were devided in to the following groups:

- 1st Angle class with crowding – 5 (41,6%) cases;
- 1st Angle class with spacing – 1 (8,3%) cases;
- 2nd Angle class, 1st subdivision - 3 (25%) cases;
- 2nd Angle class, 2nd subdivision – 1 (8,3%) cases;
- 3rd Angle class – 2 (16,7%) cases.

We had 7 (58,3%) females and 5 (41,7%) males in our study, 8 (66,7%) of them from urban zones and 4 (33,3%) – rural zones. The patients were subjected to the following investigations: clinical and X-ray exam, biometric study of casts (Pont, Korkhaus methods, Tweed total space measurement).

**Results:** All our patients were treated with modern, Straight-Wire technique – appliances with .022 inch slot, Roth and MBT methods being used.

The major part of the treated malocclusions in our study included the use of the following types of retention:

- Multiflex, fixed retainer in inferior front zone – 7 patients;
- Multiflex, fixed retainer in superior front zone – 2 patients;
- Multiflex, fixed retainer in lateral zones of dental arches – 3 patients.

We established the presence of a good, durable result in 91,7% cases, patients being followed up during one year, after the end of the treatment.

**Conclusions:**

1. Use of fixed retainer increases the retention efficiency in lateral zones of dental arches.

2. This type of appliance can be used in different types of malocclusions associated with oral position in premolar zone, especially the inferior dental arch.

3. The fixed retainer is indicated in patients with posttreatmentincisal overlay of 2 mm or less in the front zone of superior arch.

**Keywords:** Retention, fixed retainer, malocclusion, orthodontic treatment, dental arch, straight-wire technique.

## SOME ASPECTS OF STANDARDIZATION OF THE STOMATOLOGICAL GEL «SONIDENT»

**Rolik S., Domar N., Gubchenko T.**

*Academic adviser:* Piminov A., Doctor of Pharmacy, Professor, National University of Pharmacy Kharkov, Ukraine

**Introduction:** The high prevalence of pathological inflammatory diseases of the parodontium talks about the necessity of realizing mass prophylactic and therapeutic measures. Medicinal facilities of a prolonged action are therefore perspective, creating a high therapeutic concentration of operating substance in the areas of the use without the considerable increase of medicinal substance level in system circulation. These requirements conform to medicinal tapes and gels, prolonging action of what has been achieved by immobilization of operating substances on various polymeric carriers.

As a result of undertaken preliminary studies we worked out the composition and offered the technology of preparing the dental gel «Sonident», that has as operating substances a tincture of scholar-tree and nimesulid. The pharmacological study of the gel has shown antimicrobial, reparative, antiinflammatory, angyoprotectory activity and is recommended for the treatment and prevention of stomatological diseases.

**Purpose:** Choice of methods authentication and quantitative determination of active substances in the experimental models of gel "Sonident" and studies of their physical-chemical properties for development of project AND on preparation.

**Materials and methods:** Researches were conducted according to the generally-accepted pharmacopoeia methods of determining the original appearance of gel: its color, smell, homogeneity, pH level, microbiological cleanliness, quality reactions and quantitative determination.

**Results:** The conducted research devised the methods of authentication of the operating substances. For the tincture of scholar-tree reactions we suggested the solution of chloride oxydic iron (on phenol compounds), with hydrochloric acid and zinc (on flavonoids), TLC (on rutin). For nimesulid reactions we propose the authentication method of UV-spectroscopy and TLC.

Methods: the quantitative analysis is worked out on the content of nimesulid and sums of flavonoids in preparation. Determination was conducted on the spectrophotometer Specord 200. Adsorption spectrums took off in a cuvette with the thickness of layer a 10 mm at the wave-length of 299 nm (for nimesulid) and 467 nm (for the sum of flavonoids). The painted complexes of gel solution with a chlorous aluminium have maximums of absorption in the intervals of 385-460 nm (rutin) and 296 nm (nimesulid).

**Conclusions:** Methods of authentication are devised and physical-chemical descriptions of stomatological gel "Sonident" are studied with the use of instrumental methods of analysis.

For quantitative determination a spectrophotometry method is offered and it is first well-proven, that basis and tincture of scholar-tree do not influence the spectrum of absorption substance nimesulid and does not interfere with application of spectrophotometry for realization of quantitative analysis nimesulid in preparation.

**Key words**: stomatology, gel, standardization.

## MAXILLOFACIAL INFLAMMATORY PROCESSES: A RETROSPECTIVE REVIEW OF 108 CASES

**Bilozetskyi Ivan**

*Academic adviser:* Nahirnyi Yaroslav, M.D., Ph.D., Professor, State Medical University "I. Ya. Horbachevsky", Ternopol, Ukraine

**Objective:** Maxillofacial inflammatory processes (either abscess or cellulitis) occur within the potential spaces and fascial planes of the head and neck. Maxillofacial inflammatory processes should not be ignored, and no surgeon should underestimate the necessity of appropriate and timely treatment of deep

neck infections due to the serious and potentially life-threatening nature of these infections. The purpose of this study is to review our recent experience with maxillofacial inflammatory processes and emphasize the importance of appropriate treatment selection in those patients.

**Methods:** The case history of 108 patients treated for maxillofacial inflammatory processes at the Department of Dentistry of Ternopil University Hospital during the 2011 were retrospectively reviewed. Their demography, symptoms, etiology, seasonal distribution, bacteriology, radiology, site of maxillofacial inflammatory processes, durations of the hospital admission and hospital stay, treatment, complications, and outcomes were evaluated. The findings were compared to those in the available literature.

**Results:** Dental infection was the most common cause of maxillofacial inflammatory processes (63.6%); cause of skin infections (10.7%) and lymphadenitis (6.9%) were the other most common causes. Pain, odynophagia, dysphagia, and fever were the most common presenting symptoms. Radiologic evaluation was performed on almost all of the patients (98.3%) to identify the location, extent, and character (cellulitis or abscesses) of the infections. The most commonly - involved site was the submandibular space (34,8%). In 39.5% of cases, the infection involved more than one space. All the patients were given intravenous antibiotic therapy. Surgical intervention was required in 95 patients (87.9%), whereas 13 patients (12,1%) were treated with intravenous antibiotic therapy alone. 105 patients (97,2%) were discharged in stable condition.

**Conclusions:** Despite the wide use of antibiotics, maxillofacial inflammatory processes are commonly seen. Although surgical drainage remains the main method of treating maxillofacial inflammatory processes, conservative medical treatment is effective in selective cases.

**Key words:** inflammatory processes, therapy, antibiotics, treatment.

## FURUNCLES AND CARBUNCLES OF MAXILLO-FACIAL REGION

**Chihai Dorina**

*Academic adviser:* Şerbatiuc D. I., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic Moldova

**Introduction:** The data from modern literature shows a steady increase in the number of patients with purulent inflammatory diseases of the maxillofacial region and neck, including furuncles and carbuncles, which are accompanied by an increasing percentage of the serious forms of diseases, characterized by the espousal of complications such as facial vein thrombophlebitis, cavernous sinus thrombosis, septic pneumonia, sepsis, mediastenitis, meningitis, meningoencephalitis, etc.

Mortality in complicated forms of purulent-inflammatory diseases of maxillofacial area, varies between 30-40% and has no downward trend.

The development of septic complications is accompanied not only by hemodynamic and metabolic disorders, but also by immune disorders. They often occur in the form of immune deficiency with different levels of severity.

**Purpose** of this work is to enrich theoretical knowledge and practical skills in the diagnosis, treatment and prevention of furuncles and carbuncules.

Another objective of the work is to study the clinical course of disease occuring in patients who have furuncles and carbuncles in the maxillo-facial region. The other one is to carry out clinical and epidemiological analysis of morbidity in patients who have furuncles and carbuncles in maxillo-facial region according to data from the National Center for Maxillo-Facial Surgery and Public Health from Chisinau

Emergency Hospital in 2011. And the third objective is to study the diagnosis and treatment methods of furuncles and carbuncles in the oro-maxillo-facial region.

**Materials and methods** of study used in this purpose: To achieve these objectives, a complex treatment was made of 45 patients with furuncles in the Oro-Maxilo-Facial region and of another 2 patients with carbuncles in the same OMF region in the National Center for Maxillofacial Surgery and Public Health of the Chisinau Emergency Hospital, from September 2011 till December 2011. 24 patients were males, and 23 females, so that the ratio of males and females was 51.06% and 48.93% respectively. The average age of patients without any diseases was 18-23 years.

A furuncle in the infiltrative phase was registered in 4 patients (8.51%), furuncle (carbuncle), and in necrosis and suppuration phase, was registered in 43 patients (91.49%).

**Results**: The complex treatment, including also the therapy of immunomodulation (sol. Imunofani), independent of the purulent infection allows to increase the rate of favorable evolution even in patients with severe clinical forms.

Use of the produced algorithm for the choice of methods diagnosis and treatment in patients with furuncles and carbuncles of the face and neck has allowed to optimize the process of diagnosing and complex treatment of these patients.

**Key words:** furuncles, carbuncles, complex treatment, immune disorders, therapy of immunomodulation.

## NEW TREATMENT TACTICS BASED ON RECENT FINDINGS IN THE ETHIOPATHOGENESIS OF BURNING MOUTH SYNDROME. A CLINICAL CASE REPORT

**Bulat Radu, Potângă Maria**

*Academic adviser:* Moldovanu Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova.

**Introduction:** Regardless of all the effort made in studying the Burning Mouth Syndrome, described as a chronic oro-facial pain condition, it still remains an enigma. It was regarded as a psychogenic, endocrine or neurologic disease. But the discoveries of the latest years made possible a significant progress in understanding the nature of this relatively common pathology. In this study we tried to use these recent findings in the treatment of a patient with BMS.

**Methods:** The patient presenting classical BMS symptoms (burning at the tip of tongue, xerostomia and dysgeusia), was investigated for excluding other conditions causing secondary BMS. After confirming the diagnosis of idiopathic BMS, the patient was questioned using the specially adapted for neuropathic pain McGuill Short Form Pain Questionnaire (SF-MPQ-2) and a Visual Analogue Scale (VAS). After obtaining specific results, the patient underwent few treatment courses with alpha lipoic acid, gabapentin, clonazepam, SSRI antidepressants, separately or in combinations. After this, the investigations using SF-MPQ-2 and VAS were repeated.

**Results:** The results for SF-MPQ-2 and VAS varied depending on the treatment applied, but none of the used drugs led to a significant improvement.

**Conclusion:** In spite of the numerous studies which advocate the use of one of the mentioned drugs as an ultimate treatment with good results, our study found no confirmation for that. Nevertheless, this study is surely not enough for a final judgement. Thus, a perspective of a more complex study involving more patients, possible a blinded trial, remains.

**Keywords:** Burning mouth syndrome; glossodynia; glossopyrosis; glossalgia; stomalgia; stomatodynia; alpha lipoic acid; gabapentin, clonazepam.

## THE TREATMENT OF MANDIBULAR CONDYLE FRACTURES

**Nagnibeda Mihaela**

*Academic adviser:* Şcerbatiuc Dumitru, M.D., Ph.D., Professor; Sîrbu Dumitru, M.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic Moldova

**Introduction:** Mandibular condyle fractures (MCF) in specialists' opinion are some of the most difficult, given the anatomical complexity and complications that may arise. Currently neither the conduct in the election of the optimal conservative or surgical treatment nor many other questions in this section are determined.

**The aim** of this work is to improve the rehabilitation of patients with mandibular fracture in the region of the articular process by establishing treatment indications and tactics depending on the severity of fracture, terms of patient`s presentation and motivation. Research objectives were used to determine the treatment conduct and results of conservative-orthopedic (CO) and surgical treatment in patients subjected to the study.

**Material and methods:** The study material consisted of a group of 472 patients, 78(16.5%) famales and 394(83.4%) males, examined, operated and treated in the Department of Oro-maxillo-facial Surgery of the National Scientific and Practical Center of Emergency Medicine in Chisinau, within years 2001-2010. Patients` age ranged between 16-67 years (34.33 ± 0.576). Of the total number of hospitalized patients, 302 patients (64.0%) underwent CO treatment, 170 patients (36.01%) were subjected to operation for osteosynthesis. For this purpose medical records data were analyzed and synthesized.

**Results:** The highest incidence of MCF was revealed at the age of 22-27 years (25.8%). Depending on the etiological factor we obtained: aggression-in 123 patients (26.05%), patients who fell at home-73(15.46%), road accidents-27(5.7%). Of the 472 examined patients, 242 had bilateral fractures (51.2%), 192 unilateral fracture (40.6%), 28 triple fractures (5.93%), 3 double fractures (0.63%) and one case of multiple fracture (0.2%). The number of MCF with dislocation was estimated in 232 patients (49.1%), with condylar luxation-12(2.5%), without dislocation-22(48.3%). 396 patients (83.9%) presented in the first three days, within 3-7 days-46 patients (9.74%) and in more than 7 days-30(6.35%) patients.

Motivation of 27 patients to an early rehabilitation in case of insignificant dislocation was considered for the indication to osteosynthesis fixation, as well as refuse of 52 patients to undergo surgical treatment in case of absolute indications for it.

**Conclusions:** 1. CO treatment provides reposition of the fragments and their maintenance in the right position, only in cases of MCF without dislocation or with an insignificant displacement. 2. Patients rehabilitation and restoration of occlusion relationship in case of MCF with marked dislocation, multi-splinters, old forms, with dislocation, are possible only by surgical treatment. 3. Surgical treatment requires a sufficiently stable fragments' fixation, which allows postoperative immediate removal of the immobilization with early restoration of the mandible function.

**Keywords**: fracture, mandibular condyle, complications, osteosynthesis.

## THIRD MOLAR: ATTITUDE AND CONDUCT

**Glinschi Taisia**

*Academic adviser:* Şcerbatiuc Dumitru, M.D., Ph.D., Professor; Sîrbu Dumitru, M.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic Moldova

**Introduction:** Pathology of the third molar (3M) is a current topic of stomatology because it causes frequent complications. In the medical literature there are many contradictions regarding the treatment conduct.

**Purpose:** Improving the rehabilitation of patients with 3M pathology by establishing attitudes and treatment conduct.

**Material and methods:** Incidence of complications of 3M pathology was evaluated depending on various factors. The medical records and radiological examination data were statistically processed. The first study group comprised 486 patients with complications caused by 3M, treated in the in-patient department, the second group-167 patients treated in the out-patient department. I assisted in the treatment and check-up of 34 patients with complications caused by 3M.

**Results:** Of 486 patients with complications caused by 3M, 436 (89.7%) had inflammatory complications (30.0% of the total number of inflammatory processes in the oro-maxillo-facial region). Abscesses and phlegmons were recorded in 333 patients (68,4%). The phlegmon caused by 3M was complicated by severe sepsis in 12 patients (2.5%). Most patients presented on 3$^{rd}$ day of onset of the disease (30.0%) and the phlegmons` frequency increased with the number of days. The highest incidence of 3M complications was in patients between 20-27 years (43%). Complications caused by the lower 3M developed in 89% cases. A frequent cause of severe post-extractional inflammatory complications was immediate 3M extraction at patient`s presentation with an inflammatory process. The second group included 167 patients with 3M pathology treated in the out-patient department (56.0% of the whole lot). Pericoronitis was found in 94 patients (56.3%), simple and complicated caries of the II molar caused by 3M-23(13.8%), 3M impaction-53(31.7%), Wassmund crescent sign-20 (12.0%). Post-extractional inflammatory complications were not detected, because the extraction was performed after resolving the phase of acute inflammation.

**Conclusions:** 1. Inflammatory 3M complications have a significant frequency, which argue in favor of expanding indications to extraction; 2. Reduction of the frequency of severe inflammatory complications can be obtained by extraction of 3M only after resolving the acute inflammatory process; 3. 3M eruption is the period of increased risk of complications and patients` late presentation increase their severity, so it is necessary to train young patients to consult the doctor as early as possible; 5. Affection of the II molar caused by 3M is quite common, it being an argument for the expanding indications to extraction; 6. Drawing general dentists` attention expecially those tending to ignore the indication to extraction to 3M problem can help to reduce the complications rate; 7. Improvement of medical records to increase the 3M problem study extent and accuracy by young researchers is recommendable.

**Keywords:** third molar, complications, extraction, inflammatory process.

## LE FORT I OSTEOTOMY AND V-Y CLOSING IN PATIENTS WITH SEQUELAE AFTER LABIO-MAXILLO-PALATAL CLEFTS

**Ababii Rares-Costinel, Pantea Ioana-Alexandra**

*Academic adviser:* Melian Gabriel, M.D., Ph.D., Professor, University of Medicine and Pharmacy "Gr T. Popa", Iasi, Romania

**Introduction**: It is known that patients with cleft jaw have a hypoplasic jaw mainly due to surgery during the first years of life. The lowering and the advance of the jaw after Le Fort I osteotomy corrects the occlusal layer and vertical dimension of the face and also repositions soft parts, nose included. The lack of development of the upper lip, requires surgical procedures, V-Y Plasty is the recommended procedure.

**Purpose**: Our goal was to evaluate the value of the lowering and the advance of jaw surgery, associated or not with surgery of the mandible, and stability in time of occlusion and the new facial harmony.

**Materials and methods**: The study was conducted on a group of 9 patients, including 6 girls and 3 boys, who were hospitalized in the last 3 years in Iasi OMF (Oro-Maxillo-Facial) Surgery, sequelae after complete unilateral or bilateral clefts, with ages between 16 and 32. Of these only 2 patients received surgery for the Mandible. The remaining 7 underwent only Le Fort I osteotomy. 5 patients underwent V-Y plasty to lengthen the upper lip.

**Results**: Measurements made on lateral cephalometric to asses the advance(average 7 mm) and lowering the jaw (average 6 mm). Height of the upper lip increased by 3 mm. Measurements were performed one week preop and one week postop. Measurements made one year postop showed in average a relapse of 3 mm for the advance and 2 mm in rising of the jaw. Results of facial harmony and soft tissue remained constant.

**Key words**: Le Fort I, osteotomy, V-Y plasty, cleft jaw.

## CLASSIC vs. MODERN TECHNIQUES ON OVER-PROSTHESIS

**Forna Doriana**

*Academic adviser:* Forna Norina, M.D., Ph.D., Professor;. Vasluianu Roxana Ionela, M.D., Assistant, University of Medicine and Pharmacy "Gr T. Popa", Iasi, Romania

**Introduction:** On the concept of establishing the treatment plan there are a series of principles aimed at restoring stomatognathic system functions by modern or traditional prosthetic ways.

**Purpose:** The purpose of this study is to determine, according to clinical parameters, the prosthetic version of choice according to patients, requiring over-prosthetics, in relation to the degree of local involvement and loco-regional and what type of over-prosthetics will be required.

**Materials and methods:** Edentulous patients, aged 45-60 years were divided into 2 groups depending on treatment option chosen:over-prosthetis in the remaining teeth (L1) and the miniimplants overprosthetis or implants (L2). Establishing the therapeutic option individualization of the treatment, according to the clinical and overall edentulism has been considered.

**Results and discussion:** In all clinical cases of oral rehabilitation a complete functional restoration has been achieved, choosing one of the two therapeutic options. The treatment plan consisted of a whole process of pre-prosthetic and pro-prosthetic procedures, which has been competed in achieving a proper treatment with or without general rehabilitation.

**Conclusions:** A treatment plan in each case must be established, on the basis of the diagnosis; prevention and curative measures eliminating the adverse effects of edentations and future prostheses.

**Keywords:** over prosthetic, remaining teeth, implants.

## MODERN METHODS OF PREVENTION AND TREATMENT OF EARLY CARIOUS LESIONS

**Harabagiu Diana**

*Academic adviser:* Stepco Elena, M.D., State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** Despite the high rate of science development and intensive research in preventive dentistry, tooth decay remains the most common dental disease. The nowadays market offers a large variety of products that help dentists worldwide to prevent caries, but the dilemma is which product to choose: a modern one, or one with many years` proven results? In this paper I will refer to the prevention and treatment of incipient caries - a major problem in caries - prone and post-orthodontic patients with both aesthetic and functional implications.

**Objectives:** To evaluate the clinical efficiency of the two methods proposed in this study in the treatment of early carious lesions: a two week therapy with Flor-Opal versus immediate infiltration with Icon.

**Methods:** For this study a number of patients with early carious lesions were selected and divided into two groups. For the first group we will use topical applications of fluoride varnishes and for the second we will use the infiltration method of demineralized enamel. Both groups received professional scaling and brushing. The first group received treatment with Flor-Opal from Ultradent company, which is sustained-release source of 0.5% fluoride ion (1.1% Neutral NaF) in a sticky, viscous gel. The product was designed for at-home use when fluoride application is needed and is available in syringes or disposable trays. Due to the necessity of repeated appliance (a 2-week therapy) we decided to manufacture multi-use individual trays. The second group received treatment with the caries infiltrant- Icon from DMG America. The working technique is quite simple and requires no more than 15 min: after isolating the required sector (preferably with rubber dum) the demineralized (white) spots are etched with Icon-Etch (hydrochloric acid gel) for 120 sec, washed, dried, and then desiccated with Icon-Dry (99% ethanol). On the so-prepared surface is applied the Icon-Infiltrant for 3 min setting and then it is light-cured for 40 sec. After the procedure is repeated one more time, the surface is finished with polishing cups.

**Results:** After a 2 week 6 and 12 months recall we evaluated the former regions with early carious lesions by aesthetic and functional criteria. In the first group we observed the persistence of white spot lesions and in one patient the caries progressed and needed common treatment of cavities. The second group showed neither aesthetic modifications nor caries evolution.

**Conclusions:** The results were conclusive, but the decision to use one or other treatment strategies is to be made by the doctor and the patient`s consent. The choice will rely on the criteria: cost effectiveness / improvement of aesthetics/ efficiency to stop decay.

**Keywords:** Prevention, early carious lesions, fluoride varnish, Icon.

## PECULIARITIES OF THE ROOT GROWTH ZONE AND DIFFERENTIAL DIAGNOSIS OF GRANULOMATOUS APICAL PERIODONTITIS

**Hanganu Cristina**

*Academic adviser:* Sârbu Sofia, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** Chronic apical periodontitis, as the last evolution stage of an untreated pulp disease, has the area of development in the periapical dental space, an important zone from the cellular point of view infected with bacteria. The large number of chronic apical periodontitis cases encountered in daily dental practice, especially in younger patients, requires an accurate assessment of the periapical status changes caused by the microbial activity. The question is the correct diagnosis of the growth zone from an apical chronic inflammatory process, because the clinical and laboratory similarities can contribute to an erroneous diagnosis.

**Purpose**: The study of the structural features of the growth zone of the root apex and the differential diagnosis between the non-edified root and radicular granuloma in the permanent young teeth. Analysis of bibliographic data on the subject. Radiological study of the permanent teeth with the root non-edified apex at different stages of evolution.Comparative analysis on the base of radiological data of the growth zone and radicular granuloma.

**Materials and methods:** 97 radiological clichés of children from 5 to 17 years with the roots of teeth in different stages of formation and 12 radiograms with radicular granulomas have been studied. Macroscopically, 20 teeth, extracted for various reasons, with unformed roots were studied.

**Results and discussion:** Analysis of radiological data of the tooth roots revealed the pecularities of the growth zone in comparison with the destructive changes characteristic for the chronic granulomatous periodontitis in the form of extended centre of rarefaction with the bone missing in the middle, the periodontal space widening on the account of the cortical lamina resorption and the absence of the spongiosa involved in the inflammatory process.

**Conclusions:** Inflammation and pulp necrosis disturb the process of development of young permanent teeth roots, especially that the inflammatory processes in children are diffuse, affecting the adjacent tissues of the centre. Chronic apical periodontitis, occurring especially in younger patients, requires an accurate assessment of the periapical changes.

**Key words**: chronic apical periodontitis, root growth zone, root apex.

## CARIES IN CHILDREN. THE INCIDENCE STUDY

**Afanasie Ludmila, Tatar Elena, Ciumeico Igor, Avornic Lucia**

*Academic adviser:* Lupan Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction**: Actuality of the subject is determined by the growing incidence of dental caries, by its severity, by local and general complications that occur. Dental caries by its progressive and irreversible evolution is the most common cause of morphofunctional imbalance of the components of the stomatognathic system. Caries diagnosis, apparently simple, sometimes proves to be difficult.

**Purpose:** To evaluate caries incidence in children and to increase the diagnostic efficiency during prophylactic examinations.

**Material and methods:** To achieve the established purpose, 89 schoolchildren from theoretical high school in Zîmbreni, Ialoveni were included in the study. Mean age of patients within the study was 14,37 ± 0,9 years with a range between 12 and 16 years. The total cohort of patients comprised 37 boys (41,57%) and 52 girls (58,43%). Examination was performed according to the WHO methodology, by direct and indirect inspection using a dental mirror and by palpation with a dental probe. Clinical examination by inspection was, in some cases, insufficient to establish the diagnosis of proximal caries. In cases of the enamel color change or undermining of the marginal ridge, a complementary examination method was applied using the floss - sign of the floss. Inspection findings and observations were recorded in dental health records.

**Results:** Of the 89 examined subjects, 77 schoolchildren (86,52% of cases) had dental caries in permanent teeth. Examination of subjects by direct and indirect inspection with a dental mirror and dental probe allowed determining caries in pupils (97,4% of cases). Combination of clinical and complementary examination through the method of the floss sign allowed establishing diagnosis of dental caries in 2 pupils (2,6% of cases).

**Conclusions:**

1. Incidence of dental caries in children aged 14,37 ± 0,9 years is high and constitutes 86,52% in the study.

2. Increasing the efficiency of caries diagnosis within the prophylactic examinations requires combining clinical examination with additional tests, through the floss sign, which allowed definitive diagnosis in 2,6% of cases.

**Keywords:** caries, incidence index, floss sign.

## CLINICAL EVALUATION OF THE CERAMIC ON ZIRCONIUM CROUNS AND BRIDGES IN AND ON IMPLANTS: RESULTS AFTER 4 YEARS

**Zaharia E., Habron A., Covalciuc E.**

*Academic adviser*: Stadoleanu Carmen, M.D., Ph.D., Professor; Bargaonu Adina, M.D., University Asistant, "Apollonia" University, Iasi, Romania

**Introduction:** Zirconium as a dental material generated special interest for dentistry, being used on a large scale for fixed dentures because of its special properties: chemical and dimensional stability, high mechanical resistance, its Young module (210 Gpa) is compatible with that of steel alloys (193 Gpa). Our studies are focused on the resistance and reliability of zirconium blunts on implants, especially of the individual ones, but also the type of ceramics used for dental bridges. We made ceramic – zirconium crouns and bridges for 89 patients (56 women, 33 men), aged between 15 and 57 years, for a period of 4 years.

**The method** used in the lab was the CAD-CAM system, then scanning with a Dental Wings scanner and later milling bye CAM system from Wieland. The ceramic used was from 3 different manufacturers: Wieland (ZenoTec), Vita(VM9) and IVOCLAR (Emax)- and also different labs. During the follow-up period we noticed that the physiognomic component was chipped, especially in the ZonaTec bridges, and that the frame of the bridges was fractured on the pontic.

**Key words:** zirconium, dental bridges, dental ceramic.

## MINIMALLY INVASIVE PROSTHETIC TECHNOLOGY IN DENTO-SOMATO-FACIAL ESTHETICS

**Stanila Cristina Mihaela, Teodor R., Jalba S.**

*Academic adviser*: Stadoleanu Carmen, M.D., Ph.D., Professor; Vasiliu Mihaela, M.D., University Asistant, "Apollonia" University, Iasi, Romania

One of the major challenges in dentistry today is tooth restaurations with biocompatible materials which are sufficiently strong to endure masticatory forces. It's necessary to use ceramics in prosthetic restorations because of the material's qualities: high wear resistance as well as special esthetic qualities. The minimally invasive techniques allowed us to make prosthesis which are more biological and prophylactic because of the limited tooth preparation. Maryland bridge the facets technique is the second minimally invasive prosthetic solution, it consists of removing a very small amount of healthy tooth surface when esthetic corrections are needed for the front teeth.

**Key words:** minimally invasive prosthetic technology, facets, maryland bridge, dento-somato-facial esthetics.

## ROLE OF SPECIAL ELEMENTS IN COUNTERING THE TIPPING OF REMOVABLE DENTURE CLASPS

**Axinte Larisa, Pelin R., Adochitei N.**

*Academic adviser:* Stadoleanu Carmen, M.D., Ph.D., Professor; Daniela Tomita, M.D., Ph.D, "Apollonia" University, Iasi, Romania

Because the partially removable clasp prosthetic device is a unitary, rigid and undeformable construction, it's subject to tipping because the segments opposite to the one we mobilize will move at the same amplitude but in reverse. This tipping, which is caused by the imbalance between resistance and solicitation on certain constructive segments of the partially removable prosthesis, is produced by rotation. To counter the tipping we have to solve two categories of issues: balancing the constructive ensemble of the partially removable prosthesis on the prosthetic field and equipping the partially removable prosthesis with special elements. Specific for countering the tipping is the way we place the support, maintenance and stabilization elements with anti-tipping effect. The technical solution for both category issues is removing the factors which determine the appearance of the tipping axis.

**Key words:** clasps prosthesis, extracoronary slips, basculation, friction bar.

## IN VITRO STUDY ON DETERMINATION OF CALCIUM RELEASE LEVEL IN ENAMEL EROSION AND INFLUENCE OF ACQUIRED ENAMEL

**Cucos Oleg, Tupicica Gabriel, Vieru Nicolae, Plesca Anna**

*Academic adviser:* Carmen Stroici, M.D., Ph.D., "Apollonia" University, Iasi, Romania

**Materials and Methods**: The purpose of this study was to evaluate dental erosion in 0.1 and 1.0% cìtric acid in vitro by several different methods and to assess the protective potential of experimentally formed salivary pellicle (24 h in vitro). Enamel slabs were embedded in epoxy resin and polished. Erosion was performed in citric acid for 1, 5 or 10 min and recorded as calcium release.

**Results**: Significant calcium release on non-pellicle-covered specimens was measured after 1min exposure to 0,1 %·citric acid. Calcium dissolved was time and concentration dependent. Salivary pellicle significantly inhibited both calcium releases, except after 10min immersion in 1,0% citric acid.

**Discussion and conclusions**: The results support the general conclusion that salivary pellicle effectively protects enamel surface against short-term erosion in organic acids.

**Key words:** calcium release, acquired enamel pellicle, dental erosion, in vitro study.

## THE ACQUIRED ENAMEL PELLICLE – NATURAL PROTECTIVE FILM OF THE TEETH

**Cucoveica Oana, Dura Ioana, Semenov Georgiana, Agavriloaiei Lacramioara**

*Academic adviser:* Carmen Stroici M.D., Ph.D.; Adina Birgaoanu, M.D., "Apollonia" University, Iasi, Romania

**Materials and Methods:** The purpose of this study was to evaluate dental erosion in 0,1% and 1,0% citric acid in vitro by several different methods and to assess the protective potential of experimentally

formed salivary pellicle (24 h in vitro). Enamel slabs were embedded in epoxy resin and polished. Erosion was performed in citric acid for 1, 5 or 10 min and recorded as calcium release.

**Results:** Significant microhardness loss on non-pellicle-covered specimens was measured after 1min exposure to 0,1 % citric acid. Microhardness loss was time and concentration dependent. Salivary pellicle significantly inhibited microhardness loss, except after 10min immersion in 1,0% citric acid.

**Discussion and conclusions:** The results support the general conclusion that salivary pellicle effectively protects enamel surface against short-term erosion in organic acids.

**Key words:** acquired enamel pellicle, dental erosion, in vitro study, microhardness, microscopic scanning.

## EFFICIENCY OF MANDIBULAR ADVANCEMENT DEVICES IN THE TREATMENT OF LIGHT SLEEP APNEA

**Istratii I., Zanoaga A., Capita V., Horlescu M.**

*Academic adviser:* Teofana Hasna, M.D., Ph.D., Hasna M., M.D., Ph.D., "Apollonia" University, Iasi, Romania

**Introduction:** The study has proposed a preliminary assessment of the effectiveness of using mandibular advancement devices to treat sleep apnea, snoring and mild ronchopathy.

**Materials and methods:** The study was designed to perform a preliminary assessment of the efficiency of the use of mandible advancement devices for treating light snoring (ronchopathy) and sleep apnea. In order to perform this study we investigated 21 patients that came to the Pneumophtysiology Clinic in Iasi between 2006-2008, of whom 15 were men and 6 were women aged between 31-52 years, (average age 41.5 years), for night breathing problems.

The patients experienced day fatigue, focusing difficulties, apnea reported by their family, night saliva loss and snoring. The exclusion criteria were chronic heart failure, diabetes and severe OSA suspicions. All the patients were subjected to OSA investigations by means of sleep respiratory polygraphy in order to diagnose a possible sleep apnea and to determine the type of adequate treatment for each patient. Depending on the AHI, the patients were classified either as suffering from a light OSA (AHI = 5-15/hour), or as not suffering from OSA at all (AHI<5/hour) but only ronhopathy, the latter being sent to the Gnato-Prosthetics Clinic Iasi for dental investigations.

The oral devices used were Somnoguard, Somnofit and individualized guards. We monitored to the efficiency of these devices in light OSA and ronhopathy and the patients compliance to them.

**Discussions:** Somnoguard system trays system was first used to treat mild AOS. It is easy to apply, is compact, but mandibular advancement is limited, they are standardized by the manufacturer. Somnofit system is an improved version, trays are paired, mandibular advancement is done using elastic orthodontic and is much higher compared Somnoguard. We used this system as an alternative to Somnoguard and in patients with low overbite accentuated overjet. Individual devices have emerged as a solution designed by our team to treat AOS through oral devices. The first attempts were rigid trays for bruxism solidarity that generate excessive forces on the teeth and ATM.

**Conclusions:** Mandibular advancement devices may be used in patients with mild desaturation in O2, low daytime sleepiness, low frequency of apnea, intolerance to nasal positive pressure ventilation (CPAP) and those who refuse surgery. Oral appliances are a good solution to treat snoring and mild AOS. Individual guards were well tolerated, adapt better than systems Somnofit / Somnoguard, are more

"comfortable" and their price is lower than that of the precast. Interdisciplinary approach is needed for investigation and treatment by these devices

**Keywords:** OSA, mild ronhopathy, Somnoguard, Somnofit, individual guards.

## QUANTITATIVE ANALYSIS OF MACROPHAGES IN THE PERIODONTIUM OF THE FIRST UPPER PREMOLAR ON DIFFERENT SURFACES AND ROOT LEVELS

**Derkach Nataliya**

*Academic adviser:* Khertek Marina, M.D., Ph.D., Associate Professor, Siberian Medical University, Tomsk, Russian Federation

**Introduction:** The periodontium contains a considerable quantity of the cells providing reparative, protective reactions when develop an inflammation. The leading part in development and a current of protective reactions is played by macrophages. Macrophages contain in small amounts, mainly in an interstitial connecting tissue of a periodontium. Their maintenance is sharply enlarged at various inflammatory processes.

**Methods:** For researches were used 7fragments of the maxillary bone with the premolars, taken from corpses of people of age group 45-65 years. A material fixed in 10% formalin. After made its decalcification in 15% a solution of nitric acid and filled in paraffin. Sections prepared in a horizontal plane of an apical, average and at gum level of a root, painted a hematoxylin and eosine on Van-Gizon. With help of Avtandilov's grid inserted into an ocular of a microscope, defined quantity of macrophages. Statistical data processing spent with use of program Excel. To an estimation of the importance of differences ($p<0,05$) applied criterion the Mann-Whitney. Results represented in the form of $X\pm m$; where X-selective average, m-average error.

**Results:** Quantity of macrophages is more at the gum level, than in average and apical root parts. The greatest quantity is located on a distal surface (8,7±1, 2%) of gum level. At apical level from the similar surface their quantity is significant less (3,9±0,4%).On a medial surface in an apical part the index was significantly more low, than in gum and average levels of the similar surface in 3 and 2 times accordingly ($p<0,05$). The index on a distal surface in the apical part was more low, than on gum and average levels of the similar party in 1,5 and 1,2 times accordingly ($p<0,05$). The index on a palatal surface in gum level, significantly exceeded indexes in average and apical areas of the same surface in 3 and 4,5 times accordingly ($p<0,05$). On a vestibular surface in an apical part the index is authentic more low in 6 times, than on gum level to the similar surface ($p<0,05$).

**Conclusion:** The greatest quantity of macrophages in gum parts, possibly, is caused by constant contact to an oral cavity and with a tooth plaque. It is necessary to mention about gum sulcus where circulates liquid. Gum liquid contains cells possessing antimicrobial action, including macrophages. At healthy gum the liquid do not find out or it appears in insignificant quantity. With ascending of inflammation of a gum the quantity of liquid is considerably enlarged and the quantity of the macrophages participating in local immunity is enlarged.

**Keywords:** first upper premolar, periodontium, macrophages.

# RATIONAL TREATMENT OF APICAL PERIODONTITIS OF PERMANENT TEETH IN CHILDREN

**Bușinschii Carolina**

*Academic adviser:* Stepco Elena, M.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** Although at this moment there are a lot of scientists who research different ethiopathological aspects, treatment and diagnosis of apical periodontitis of permanent teeth in children, this problem still exists not only for the pediatric dentists but also for the dental surgery specialists because apical periodontitis is the main cause of complications of entire dental system of the child. It was demontrated that the treatment of apical periodontitis of the teeth with immature roots with BioR leads to the cure of periapical infection in a short term and also stimulates the roots apexification.

**Purpose** of this study was to estimate the therapeutical effect of BioR on children permanent teeth affected by apical periodontitis; To study the therapeutical effect of BioR in treatment of apical periodontitis in permanent immature children teeth, to evaluate the apexification effect and the biocompatibility with children dental tissues.

**Matherials and methods:** The comparative study was made on 20 patients aged 7-11 years who were divided into 2 groups.

The first group (11 patients) - the root canals were irrigated with BioR.

The second Group (9 patients) - the root canals were irrigated with calcium hydroxide.

In the patients from the first group, root canals were irigated with BioR and treated with ultra-sound. At the same time a cone to maintain the substance in tisue for a long time and to avoid the pathogenic flora penetration was inserted in the canal. The procedure was reapeted each four days. 4-5 procedures were performed. At the end the canal was sealed with a BioR paste (Zn oxyde cement saturated with BioR liquid).

Patients from the second group–the root cannals were sealed with calcium hydroxide and an obturation was applied. Procedure is repeated once in 10 days in first month then once in 30 days. For the final root obturation calcium hydroxide paste (Dycal Dentsplay) was used

**Results:** The results of both ways of treatment were compared at 1, 3, 6 months from the beginning of the treatment. All patients were Rx investigated and the quality of therapy was evaluated by the apexification and apexogenesis changes.

The inflammatory lesions of the patients from the first group reduced by about 35% in first month, 70% in the third month and 97% at sixth month. The apexification process- 25% in first month, apexogenesis: 1st month -30 %, 3rd month-60%, 6th month-75%.

In the second group a decrease of inflammatory lesions was seen in the first month with about 15%, 3rd month-40% and then the apexification process was initiated and the closing of cannal lumen was seen in 90% after the 6th month and the radicular apexogenesis was seen in 10%.

**Conclusions:** In comparison with other medical substances used in endodontics BioR does not induce the process of paexification but leads to the stimulation of the of radicular apexogenesis.Thus BioR is an efficient remedy in the treatment of apical perodontitis of permanent teeth in children. These results are representative only for this lot, more studies need to be done.

**Key words**: Apical periodontitis, BioR, Calcium Hydroxide, Apexification, Apexogenesis.

## ERRORS AND COMPLICATIONS FOLLOWING SURGICAL CROWN LENGTHENING

**Cirimpei Vasile, Cirimpei Tatiana, Munteanu Dumitru, Ciobanu Anisoara**

*Academic adviser:* Ciobanu Sergiu, M.D, Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic Moldova

**Introduction:** It is a common sense to the dental practitioners that surgical crown lengthening is a procedure that should be delivered to more than 30% of patients. Especially in the cases where the root reminiscences are still present but no ferrule effect can be achieved, this surgical procedure is highly indicated.

**Methods:** All of the patients that were treated by means of surgical crown lengthening with a total number of 45 – were analyzed thoroughly before the procedure, at the time of procedure, and retrospectively 1 week, 3 weeks, 6 weeks, 8 weeks and 6 months after the surgical crown lengthening. During this period of analysis patients were examined for the main periodontal indexes, the level of keratinized gingiva, the sound tooth structure furthermore used as a component of the abutment, all of the issues presented by the patient after the procedure, as long as other parameters.

**Results:** All of the patients presented minor to medium intensity of pain, only 2 patients presented violent ones. Pain was easily medicated by the use of antialgics and lasted no more than 3 days. 13 patients presented minor edema and one patient presented a hematoma. An error considered by us was the failure to leave the periostium intact to the surface of the bone, so that no apical displacement of the flap was achievable – this situation was present in 5 cases, all of them with highly scalloped and thin periodontium. One case presented the failure to achieve the presence of sound tooth structure so that the tooth could be restorable. No proper displacement of the flap was present in 2 cases, by that we mean the impossibility to cover the hole periostium so some of the tissues were left for healing as a secondary intention. At a period of time after the surgical crown lengthening the only major complication is the loss of keratinized attached gingiva.

**Conclusions:** The major complication of the surgical crown lengthening is the loss of attached keratinized gingiva, a factor which may further be advocated as an extraction of the lengthened tooth. Another problem is the failure to leave the periostium intact, so no apical displacement is possible. We think that these issues are conditioned by the presence of the thin and scalloped gingiva. A more meticulous case selection is advocated for the dental practitioner.

**Key words:** Surgical crown lengthening, error, apical displacement, periostium.

## PECULIARITIES OF CLINICAL MANIFESTATION AND TREATMENT OF PARTIAL SECONDARY EDENTATION COMPLICATED BY TOOTH MIGRATION

**Coceban Victoria**

*Academic adviser:* Oineagra Vasile, M.D., Ph.D., State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** partial secondary edentation complicated by tooth migration causes dentition, parodontium lesions, violation of temporo-mandibular joint, muscles of mastication and impedes making the diagnosis and treatment of this pathology.

**Pupose:** investigation of correlation between the phenomenon of tooth migration and clinical manifestation of partial edentation.

**Objectives:** Investigation of modern aspects of morphology and physiology of dentition. Determination of correlation between tooth migration and clinical manifestation of partial edentation. Optimization of methods for restoring the occlusal plane.

**Methods:** we have created a database under the patient cards of patients with partial loss of teeth, complicated by tooth migration, which contains information about clinical and paraclinical examination and treatment results.

**Results:** on the basis of clinical and paraclinical examination of patients with partial secondary edentation complicated by tooth migration, we detected lesion of dentition, parodontium, temporo-mandibular joint and muscles of mastication. They were clinically manifested by deformation of occlusal plane, violation of occlusal relationships, loss of multiple teeth contacts, injury of the oral mucosa as well as violation of temporo-mandibular joint and chewing muscles.

**Conclusion:** tooth migration is a widespread complication of partial edentation. This phenomenon determines establishment of occlusal imbalance and appearance of morphological and functional disorders at the level of parodontium, chewing muscles and temporo-mandibular joint.

**Keywords:** partial secondary edentation, tooth migration, restoring the occlusal plane.

## REFERENCES ON COMPLICATED DENTAL CARIES

**Tatar Elena, Galagan Galina, Avornic Lucia**

*Academic advisor:* Lupan Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Periodontitis is revealed more frequently in case of lack or inadequate management of regular check-ups of the oral cavitz in children. Frequency of occurrence of periodontitis in the deciduous teeth increases with age. If at the age of 2-3 years periodontitis occurs in 0.1%, then at 7-8 years it occurs in 20-30% of children (Spinei Iu., Spinei A., 2010). Treatment of periodontitis in children is linked with many difficulties associated with anatomic and physiological peculiarities of the temporary teeth and periodontal tissue during different periods of development. Surgical and conservative methods of treatment are used in treatment of deciduous teeth.

**Purpose and objectives:** To assess the incidence of periodontitis of the temporary teeth in children and its methods of treatment.

**Materials and methods:** To achieve the established purpose, 127 dental health records from MSPI of the Municipal Stomatological Center for Children were examined in the study. Patients were referred to be performed sanitation of the oral cavity during September – December 2011. Mean age of patients in the study was of 7.21±0.3 years with a range between 5 and 9 years.

**Results**: Of the 127 subjects, 43 children (33.86% of cases) had periodontitis of the temporary teeth.

The conservative method of treatment was carried out in 19 children (41.86% of cases), of the 43 subjects who had periodontitis of the temporary teeth. 24 children (58.14% of cases) were subject to the surgical method of treatment (tooth extraction).

**Conclusions**:

1. Incidence of periodontitis of the deciduous teeth in children aged 7.21±0.3 years constitutes 33.86% in the study.

2. Treatment of periodontitis of the deciduous teeth in children aged 7.21±0.3 years was performed by the conservative method in 41.86% of cases and by the surgical method in 58.14% of cases.

**Keywords:** deciduous tooth, periodontitis, index of incidence.

## DENTAL CARIES IN TEMPORARY TEETH. A STUDY OF ITS INCIDENCE AND INTENSITY

**Galagan Galina, Afanasie Ludmila, Avornic Lucia**

*Academic adviser:* Lupan Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction**: Spread of dental caries in children comprises: 55.8% in preschool children and 68.5% in school children in Chisinau (Sturza T., 2010), 80-90% aged 6-7 years (Godoroja P., Spinei A., Spinei Iu., 2003), 61.5-73.9% aged 6-7 years in Bucharest, Romania (Luca R., 2003), 75% aged 5-6 years with the fissure caries prevalence in permanent and deciduous teeth (Курякина Н.В., Савельева Н.А., 2003), 76-91% (E. Cura, 2000). In recent decades a worsening of the caries pattern has been revealed through occurrence of the explosive forms of caries with an accelerated development and with a trend of expansion on the teeth with the caries resistant surfaces.

**Purpose and objectives**: Assessment of incidence and intensity of caries in deciduous teeth in children.

**Materials and methods**: To achieve the proposed purpose 71 children from Primary School no. 82, Ciocana district, in Chişinău were examined in the study. Mean age of patients within the study was 7.71±0.4 years with a range between 6 and 9 years. Examination was performed according to the WHO methodology, by direct and indirect inspection using the dental mirror and by palpation using the dental probe. Inspection findings and observations were recorded in dental health records (Form no. 43/e).

**Results**: Of the 71 examined subjects, 69 school children (97.18% of cases) had dental caries in deciduous teeth. Evaluation of the dental caries intensity index in deciduous teeth (co), in the examined subjects has determined the mean value of 4.83±0.59.

**Conclusions**:

1. Incidence of the temporary tooth caries in children aged 7.71±0.4 years is high and it constitutes 97.18% in the study.

2. The temporary tooth caries intensity (co) in children aged 7.71±0.4 years is high and constitutes 4.83±0.59 in the performed study.

**Keywords**: dental caries, incidence index, intensity index.

## CONSERVATION TREATMENT OF CHRONIC GRANULAR APICAL PERIODONTITIS IN CHILDREN

**Cuşnir Andrei**

*Academic adviser:* Stepco Elena, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Nowadays the treatment of periapical pathologies has a fundamental importance. Their treatment is essential for the healing process of periapical area. The frequency and complications of chronic periapical processes in children, especially the primary teeth have important problems at pediatric dentistry. Evaluating carefully all the treatment methods of chronic periapical process, will lead to the prevention of many complications.

The quality and success depends on the proper materials and methods used.

**Purpose:** To analyze the efficacy of conservation methods treatment for chronic granular apical peri-

odontitis in the temporary teeth and the increased or decreased percent in the number of patients with post-treatment complications.

**Materials and methods:** The study was based on the clinical assessment examinations and dental radiographs in 53 patients of 5-11 years old and we estimated only the treatment of temporary teeth, which are treated for one year period. Then we made statistic analysis related to clinical forms of chronic granular apical periodontitis, to the method of treatment and its results.

**Results:** We have treated 13 temporary teeth with chronic apical periodontitis using the conservative method. According to our analyses 3 teeth were considered failures; teeth were extracted because they remained less than two years before the eruption of permanent teeth. In 9 cases we observed regeneration bone, in one case tooth bud damages due to periodontal abscess.

**Conclusions:** The main objective in treatment of temporary teeth with chronic apical periodontitis is keeping the tooth from preventing dental migrations and prevention with orthodontic treatment. Apical periodontitis results suggest that successful therapy in children with deciduous teeth is due to root canal treatment and effective materials.

**Keywords:** treatment, periapical, pathologies, processes, children, chronic.

## MAINTAINING PULP VITALITY AFTER A TRAUMATIC INJURY

**Shora Muhammad**

*Academic adviser:* Stepco Elena, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** For an optimum patients' care we need to understand the impact of trauma on the pulp and the importance of pulp vitality for the tooth development, the type of injury, stage of the root development and the level of infection these are factors that effect the circulation to the injured area and impact of the pulp vitality. Traumatic dental injuries may result in endodontic complications. Endodontic therapy generally involves removing the pulp to save a tooth, but for young people keeping the pulp alive will help the tooth survive. Treatment strategies for traumatized immature teeth are based on preserving pulp vitality to ensure further root development and tooth maturation.

**Purpose:** The aim of this study is to prove that keeping the pulp alive after a traumatic injury in an immature permanent tooth is important for the apexogenesis of the tooth. When the tooth is mature, the therapeutic aims will also be directed towards preserving pulp vitality, especially as the patient is young.

**Case report:** A 9-years-old boy who had suffered a concussion injury to the maxillary anterior teeth he fractured his tooth and exposed the pulp, immediately after injury the. Radiographs reveal that the injured tooth has an immature root with an open apex. The apical opening is greater than 1 mm, the pulp chamber had been accessed. Vitality testing will not be useful in determining the status of the tooth pulp. Maintaining pulp vitality is a primary concern in the treatment of an immature tooth.

The goal in this case will be to allow the apex to mature and the dentin walls to thicken sufficiently to permit successful root canal therapy. The patient's pulp exposure is large and there has been bleeding. His injury requires a shallow pulpotomy to remove contaminated pulp tissue. After anesthesia, the tooth is isolated with a rubber dam. The exposed dentin is cleaned and any extruding pulp tissue is removed with a spoon excavator. The pulp tissue is gently removed to a depth of about 2 mm below the exposure. Wet cotton pellets are used to stop hemorrhage, and a hard-setting calcium hydroxide dressing is placed over the exposed pulp. The fractured tooth surface is acid etched and restored using a bonded resin composite.

The treatment is considered effective if there are no signs of clinical or radiographic pathosis and if the root continues to develop apically and thicken laterally. The boy had received prompt treatment (Apexification), the entire root canal system is cleaned, then filled with a soft non-setting calcium hydroxide paste to the level of the open apex. After six to twelve months a calcify barrier usually forms. Follow-up examinations should occur every three months. If there are any signs or symptoms of infection or pathosis, the canal is recleaned and refilled with calcium hydroxide, Radiographs should be taken at three, six and twelve month intervals to control the apical development. When it can be clinically and radiographically confirmed that the apex has closed or a bridge has formed at the level of the calcium hydroxide, the canal is ready to be filled with gutta-percha, and the tooth also ready for the restoration, so the little boy patient can smile again.

**Conclusions:** According to the results from the case report we had maintained pulp vitality after traumatic injury in young people it is important for the apexogenesis of the tooth and its maturation.

**Keywords:** pulp vitality, pulpotomy, pulp capping, apexification.

## THE CLINICAL PICTURE OF THE SUBTOTAL AND TOTAL DESTRUCTION OF THE TOOTH CROWN THE TREATMENT WITH THE USE OF THE CAST DOWELS AND CORES

**Colesnic Irina**

*Scientific adviser:* Oineagră Vasile, M.D., Ph.D., Lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** One of the most frequent pathologies in dental practice is a partial and complete destruction of the crown of the tooth. The pathogenesis of destructions can be different: secondary caries, trauma. The goal of contemporary dentistry is to rehabilitate and restore the tooth regardless of the degree of the crown destruction. Dentists have adopted the method of substitution by double prosthetic piece as a technique of treatment. It consists of making two complete separate prosthetic pieces that are cemented separately: the cast dowel and core, the artificial crown. The cast dowels and cores are appreciated for resistance against rotation and a good adaptation in the root canal.

**Purpose:** The analysis of the particularities of the clinical picture in subtotal and total destruction of the tooth crown and the treatment with the use of cast dowels and cores.

**Objectives:** Analysis of the features of the clinical pictures of the subtotal and total destruction of the tooth crown; optimizing the method of treatment with the use of cast dowels and cores.

**Materials and methods:** In order to achieve the objectives set, have been selected, examined and treated 7 patients (4 women and 3 men, aged between 45-61 years), diagnosed with subtotal and total destruction of the tooth crown. The patients were assessed clinically and paraclinically and were treated with the use of cast dowels and cores.

**Results:** Based on the results of clinical examination and laboratory findings, the diversity of the clinical pictures in subtotal and total destruction of the tooth crown was found. The planning of the prosthetic construction was carried out given the morphological appearance of the root stump and its report to the gumline, alveolar ridge, and in accordance with the biomechanical analysis of future prosthesis.

**Conclusions:** The clinical picture of subtotal and total destruction of the tooth crown varies depending on ethiological factors, age, types of occlusion. The design of the cast dowels and cores is determined by the morphological appearance of the root stump and aims to ensure its stability.

**Keywords:** subtotal and total destruction of the tooth crown, cast dowels and cores.

## ULTRASTRUCTURAL ANALYSIS OF SUBMANDIBULAR SALIVARY CALCULUS IN COMBINATION WITH X-RAY MICROANALYSIS

**Lehtman S., Enachi M., Gulpe A., Roman I.**

*Academic adviser:* Şcerbatiuc D., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Sialolithiasis is one of the common diseases of the salivary glands. It was speculated that, in the process of calculi formation, degenerative substances are emitted by saliva and calcification occurs around these substances, and finally calculi are formed. However, the exact mechanism of the formation of calculi is still a matter of debate.

**The aim of this study:** To analyze seven stones ultrastructurally to determine their development mechanism in the submandibular salivary glands.

**Matherials and methods:** To study the morphology (the central and peripheral parts of the submandibular sialolithiasis - n=7) we used a VEGA TESCAN TS 5130MM scanning electron microscope equipped with an Oxford Instruments energy-dispersive x-ray (EDS) system.

**Results:** The study revealed the presence of numerous microstructures of different shapes (nodular, laminar, reticular, microgranular, and multinodular) and variable size arranged in a haphazard fashion. X-ray microanalysis disclosed the component elements in the calculi to be C, Ca, P, Mg, S, Na. The main constituents were Ca and P - in central *vs.* peripheral parts: 2.5 ± 0.9 *vs.* 0.8 ± 0.2 (p=0.028) and 2.2 ± 0.7 *vs.* 0.63 ± 0.15 (p=0.02). The major crystals were whitlockite and brushite in central parts of submandibular salivary stone and hydroxyapatite in the peripheral parts.

**Conclusions:** The diverse microstructures encountered strongly suggest that different mechanisms of mineralization occur during growth and development of the sialoliths. High calcium and phosphorous content in the food may be attributed to one of the reasons for the formation of sialoliths.

**Key words**: salivary gland stone, ultrastructure, x-ray diffraction.

## AMELOBLASTOMA – MORPHOPATOLOGICAL, CLINICAL AND PARACLINICAL FEATURES

**Vudu Victoria**

*Academic adviser:* Şcerbatiuc Dumitru, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction**: Prevention, detection and treatment of tumors in all countries have become over the last 15-20 years some of the most pressing problems.

Among the jaw bone diseases, as diverse etiology, clinical and morphological manifestations, odontogenic tumors are commonly encountered in clinical care.

**Purpose:** The aim of the study was to determine the incidence of a common form of odontogenic tumor - ameloblastoma and to highlight its morphopatological, clinical and paraclinical features.

**Materials and methods:** We have analyzed and processed 450 forms of observation(medical records) of the patients treated in the Oncological Institute of Chisinau, during 2000-2011. Out of these - 16 patients were diagnosed with ameloblastoma.

We tried to mirror the pathological anatomy, clinical signs, radiography, progression and treatment of the odontogenic tumor - ameloblastoma.

**Results:** Following a statistical analysis for the past 11 years, performed at the Institute of Oncology, we have detected 16 cases of ameloblastoma, showing a higher frequency compared with other odontogenic tumors of the jaws.

Ameloblastoma is a benign tumor, locally invasive, found most frequently between ages 20 to 40. Ameloblastomas typically occur as hard painless lesions near the angle of the mandible in the region of the 3rd molar tooth (48 and 38) although they can occur anywhere along the alveolus of the mandible (80%) and maxilla (20%). Although benign, it is a locally aggressive neoplasm with a high rate of recurrence. The tumor has a very slow growth, with no general symptoms, usually are asymptomatic until a swelling is noticed and without metastases, but recurs after incomplete removal.

**Conclusions:** Odontogenic jaw tumors present a difficult and complex issue, which requires extensive studies, in order to make an appropriate treatment. Ameloblastoma is the most common odontogenic tumor, and the analysis results show that the frequency of this type of odontogenic tumors is relatively high, with the most clinical and therapeutic importance of all odontogenic epithelial tumors.

World Health Organization data show about 10 million annual primary cancer patients. Moldova is not an exception, showing annually about 8000 patients with various primary sites of cancer process and the "Cancer-National Register" highlights that the indices are growing steadily. Analysis results show that the frequencyof this type of odontogenic tumor is relatively high.

**Keywords:** Odontogenic jaw tumors, ameloblasts, ameloblastoma, slow growth.

## ANGLE CLASS III MALOCCLUSION. DIAGNOSIS AND TREATMENT DENTOAVEOLAR FORM

**Gagauz Anita**

*Academic adviser:* Trifan Valentina, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

**Introduction:** Angle Class III malocclusions relate to abnormalities of sagittali are fairly common and complex pathology of maxillofacial region, which can lead to various complications such as impaired function of mastication, increased risk of periodontal disease, the development of disorders of the TMG and need of timely diagnosis and treatment of this pathology.

**Methods:** The study is based on observations of the dynamics in the treatment of 12 patients with Angle Class III malocclusions, aged 9 to 12 years and performed at the Department of Pediatric Oral and Maxillofacial Surgery, Therapeutic Dentistry childhood and Orthodontics at the Republic Children's Clinic «E. Cotaga».

**Results:** On the basis of observations of patients with Angle Class III malocclusions on clinical examination revealed violations of personal, functional, clinical and morphological traits and disorders in photometric, biometric and radiographic methods of investigation.

**Conclusions:** At the heart of a dental anomaly of Angle Class III malocclusion are functional disorders, not corresponding to the size of jaw and teeth, as well as genetic factors.

Class III malocclusion notes a violation of the facial profile, pronounced nasolabial fold and smoothed chin tuck. For intraoral examination indicated a combination of sagittal anomalies of occlusion with transversal anomalies.

On the basis of biometric examinations it was noted a violation of premolar and molar index by the method of Pont, as well as increase in the index of Bolton.

Class III malocclusion in removable bite used functionally active orthodontic appliances, in the permanent dentition is used removable design, straight-wire or self-ligating appliances.

The cephalometric examination for the study identified an increase in the angles SNB, ANB and the decrease SNA.

**Keywords:** Angle Class III malocclusion, dental anomaly, pronounced nasolabial fold and smoothed chin tuck, straight-wire or self-ligating appliances, angles SNB, ANB.

## TEETH WHITENING METHODS

**Ciobanu Ana**

*Academic adviser:* Sîrbu Sofia, M.D., Ph.D., Professor,_State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Facial appearance is part of human communication channels. Communication based on the aesthetic interest our intimate relationships, the family one, the social, professional or unprofessional. Therefore we can not ignore the growing importance that dental aesthetic has. In last few years whitening methods takes a leading place in treatment of tooth discoloration. The aim of this research is to study and apply in practice some teeth whitening methods.

**Material and methods:** 35 patients in age from 18 to 37 were examined (33 women and 4 men with different tooth discolorations). In order to demonstrate the effectiveness of Opalescence whitening system, own clinical cases have been analyzed.

**Results:** In all 4 groups of patients, whitening system "Opalescence" has presented good results. All patients had a decrease of tooth discoloration which was observed form the next visit. In 2 cases, patients have a temporary hypersensitivity to cold and warm, which was removed by applying gels like Flor Opal or Ultraeze (Ultradent). Patients have been instructed how to take care of their teeth in order to maintain newly acquired color. From prophylactic considerations, we recommended fluoride toothpaste "Sensodyne" and whitening toothpaste "Opalescence".

**Results:** Analysis of literature data shows that dentists now have multiple methods of treatment for tooth discoloration (veneers, bleaching), but these have to be applied according to the damage degree of dental tissues. Teeth whitening methods require patient monitoring and have to be performed in combination with remineralization therapy.

**Key words:** teeth whitening, opalescence, bleaching.

## DENTAL ROOT ABNORMALITIES

**Nazari Ana**

*Academic adviser:* Sîrbu Sofia, M.D., Ph.D., Professor,_State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The tooth is the result of a long process of cellular changes occurring in the ecto-mesodermic tissues of the stomodeum. Theoretically, but not practically, the tooth can be morphologically

variable, considering its ecto-mesodermic origin and its appearance in an area of border and continuity of the ectoderm into the endordem. The atypical tooth morphology can refer to the crown portion and/or root portion and to its implantation in the alveolar bone. Dental anomalies are congenital abnormalities that occur in the growth and development of the dental system, which leads to tooth deviations from a normal type in terms of shape, number, location and implant position. Root morphology, especially the endodontic configuration of root structures may be crucial in the endodontic treatment and the maintenance of the tooth in the arch. Root and canal configuration can be the cause of endodontic treatment failure. Detection failure of root canals or their ramifications in the apical third is one of the most common complications in the endodontic treatment. Considering the above mentioned, the raised issued is not fully elucidated and requires some research.

**Purpose:** to study the root anomalies of various groups of permanent teeth and the causes that can lead to those.

**Objectives:**

- The study of bibliographic sources on the current topic;
- Analysis of some radiological clichés of permanent teeth roots with a normal anatomical structure and with developing anomalies.
- A clinical study based on extracted permanent tooth.

**Materials and methods:** While fulfilling the outlined objectives I researched 31 foreign and domestic literary sources, I analyzed 56 radiological clichés with various dental anomalies, and I selected 47 permanent teeth with anomalies of the dental roots from the 215, extracted on different reasons, teeth.

The radiological clichés were analyzed using X-ray fluoroscopy. The 47 teeth were studied macroscopic and with a magnifier capable of enlarging the image 10 times.

**Results:** The data we obtained shows that the radiological examination complements the clinical one, bringing useful information; especially when the root segment is affected by anomalies. In radiological clichés analysis I found that dental roots may show various deviations from normal that take different forms. We have cases like : mono-radicular root duplication of the incisors and premolars; incisors accessory roots; accessory roots of upper and lower premolars; taurodontism; dilaceration; flexia; short roots, thin roots, or concrescent roots; tooth in a tooth. Anatomical study of the extracted teeth provided us a number of deviations from their normal structure. The following were detected: a number of supernumerary roots in the incisors, premolars and molars group; root flexia; convergence. A special interest presented the tooth.germination where a dental germ is divided causing crown duplication with a small root.

**Conclusions:** After analyzing the literature sources, the x-rays and the extracted teeth, we can indicate that root anomalies are encountered rarely. These are usually caused by hereditary or genetic defects or spontaneous genetic mutations. Anomalies can also have environmental and traumatic causes.

The result of our research confirms again that the x-ray examination brings very useful information that becomes indispensable in more difficult cases where anomalies are involved.

We also found various clinical forms of root anomalies, in the extracted teeth, which probably lead the doctors to remove them. Identification of root abnormalities and of the specific form, are very important in terms of endodontic treatment because when root anomalies probability is not taken into account the risk of various incidents and aggravations during the endodontic treatment rises which can lead to a final failure.

## FRACTURE RESISTANCE OF TEETH TREATED ENDODONTICALLY AND RESTORED WITH LIGHT-CURED COMPOSITE WITH AND WITHOUT CUSP COVERAGE

**Munteanu Dumitru, Cirimpei Vasile, Cirimpei Tatiana, Ciobanu Ana**

*Academic adviser*: Sergiu Ciobanu, M.D., Ph.D., State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The golden standard in restoring teeth after endodontic treatment is the dental crown. Once in dental practice were introduced adhesive techniques of filling, these are more often used as post – endodontic treatment. Dental fractures are very often found in this particular group of teeth, which is why we decided to analyze if cusp coverage restores strength lost during endodontic treatment. .

**Material and methods:** Using PubMed, Google Scholar and HINARI databases, we selected 42 articles which have as keywords "cusp coverage" and "fracture resistance". The selected materials were analyzed by the working group, which according to their discussions, knowledge and clinical experience has taken an attitude towards this subject. To demonstrate the technique of making cusp coverage we presented a few clinical cases we still monitor.

**Results:** The endodontic treatment increases the risk of tooth fracture. Factors predisposing to fracture are the endodontic access cavity, presence of marginal ridge, cusps thickness, cusp deflection and lack of pulp chamber roof. Hood explained using a mathematical formula the mechanism of cusp deflection that proves the importance of cusp coverage. This was confirmed by clinical and experimental studies.

**Conclusion:** Endodontically treated teeth and restored with cusp coverage may be more resistant to fractures than those filled whit composites conventionally.

**Keywords:** prevention, tooth fracture, cusp coverage.

## AESTHETIC VS. DENTAL HARMONY IN AMPLITUDE DISCOLORED RESTORATION

**Cigu Andor Toni**

"Apollonia" University, Iasi, Romania

**Introduction:** Most common reasons for failure in discolored dental restorations are on how to improve aesthetics and restorations functionality diagnostic. Efficient communication of dental harmony and dental aesthetics, dental-facial relationships, the characteristics of color, the functional-occlusal harmony are part of therapeutic planning taking into account the specific properties of materials and the different ways they can be used, the practitioner chooses the appropriate system with technician and patient for the situation. Fine adjustments allow a specific character which involves the verification of functional aspects, aesthetic appearance of the desired restoration.

**Aims and objectives:** This paper proposes an approach on harmony and aesthetic dental in amplitude discolored restorations with an optimal system that allows adjustment and progressive verification of restoration for being able to count on the success of the final result.

The objectives consist in differentiating between the directions for the protocol of occlusal rebalancing, functional and the harmonizing a whole physiognomic appearance offering the dental aesthetic desired by dental team with the patient.

**Material and method:** A 32 year old patient presents to clinic with the desire in prosthesis the maxillary and mandibular discoloration. After clinical and paraclinical examination, we decided a complete restoration taking into consideration occlusal rebalancing and the determination of an optimal intermaxillary centric relationship. The focus is on complex restoration ceramic system with porcelain veneers, and metal-ceramic.

**Result:** The design of the esthetic crowns and porcelain veneers allows us to use a prosthetic restoration with all the benefits of dental aesthetics and harmony thanks to the adjustment and created access to each odonto-periodontal unit and for prophylaxis procedures. Final appearance is acceptable esthetical and the dispensary of patient a week later can prevent unpleasant events.

**Conclusions:** Therefore, with minimal modifications of a conventional metal-ceramic prosthetic restoration can get more long term benefits. Further studies are recommended with a longer time dispensary. In conclusion, we believe that in some cases, the disadvantages caused by the existence of an impediment in polish the occlusal surface which is a high risk for fracture of ceramics are outweighed by advantages given by the existence of a glaze liquid for ceramic by enabling to achieve an optimal, smooth, glossy surface for esthetic purposes. This method can be indications of use in following situations: uniform prosthetic restorations on implant, large bridges expanses with implant aggregation, unidentare or pluridentare prosthetic restorations.

**Key words:** aesthetics, harmony, amplitude discolored restoration.

## METHODS OF TREATMENT OF HYPOPLASIA OF PERMANET TEETH IN CHILDREN

**Ursu Tatiana**

*Academic adviser*: Stepco Elena, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic of Moldova

Most common anomalies in primary and permanent dentition are abnormal formation of enamel or hypoplasia that is a deficiency in enamel thickness which may be caused by: systemic metabolic stress, hereditary anomalies, and localized trauma, caused by defects in matrix secretion. The percentage damage of permanent teeth of enamel hypoplsia among children is from 3 to 50% in different countries.

Clinical dental hypoplasia in the permanent teeth comes in the form of white spots (opacities) and/or as morphological changes (ditches or large lesions). These spots formed during development are called lesions or hypoplasia hypocalcificated, the color of these spots can be white, milky, yellow or brown, which can appear on a single tooth (local hypoplasia) or on a group of teeth (systemic hypoplasia). This type of defect may cause tooth sensitivity, may be unsightly or may be more susceptible to dental cavities.

Treatment of teeth with enamel hypoplasia must be determined on an individual basis in consultation with the child's pediatric or family dentist. Now, treatment of enamel hypoplasia tend to obtain aesthetic aims and psycho-emotional, and includes local and general treatment. General treatment of dental hypoplasia aims normalization of mineralization processes in general metabolism and needs child's pediatric consultation, while local treatment includes utilization of remineralization therapy, a technique of microabrazion, and realization of veneers.

The aim of our work is to study the evolution and manifestation of hypoplasia of permanent teeth at children, as well as review the effectiveness of modern methods of prophylaxis, local and general treatment at patients with hypoplasia.

Our study is based on data obtained as results of treatment of 12 patients (9 female and 3 male) at 12-20 age.

We have studied 2 cases with local hypoplasia, 6 with systemic hypoplasia spotty form and 4 cases with systemic hypoplasia erosive form. We have applied to our patients with diagnosis of hypoplasia the new methods of treatment such as: microabrazion technique and realization of veneers, as a result we have obtained a smooth recovery of teeth.

**Results:** Following the study, each patient received suitable treatment: in spotty form was realized microabrazion technique and remineralization therapy, in erosive form was applied remineralization therapy and veneers in association with microabrazion technique. Finally, all patients were taken to record for12 months.

**Conclusion:** Although, the new methods of treatment of systemic and local hypoplasia such as: remineralization therapy, microabrazion technique and realization of veneers, are difficult and need a lot of time, they are much more better then classical technique of treatment, and as a result they are so interesting not only for doctor but also for patient.

**Key words**: hypoplasia, microabrasion, remineralization, veneers.

## DIAGNOSIS, PREVENTION, AND TREATMENT OF PERI-IMPLANT INFECTION

**Ungurean Fevronia**

*Academic adviser*: Chele Nicolae, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Implantology is becoming increasingly routine in the rehabilitation of partially or fully edentulous patients. So, we describe some of the complications involved with this technique, such as periimplant disease and, within this category, periimplantitis, an inflammatory reaction in which there is a loss of the bony support of the implant accompanied by inflammation.

The **purpose** of research is prevention and treatment of peri-implant infection by using curative and preventive methods. Research objectives are: studying literature, determine the oral hygiene indices of patients with dental implants, radiographic assessment, determine the methods of prevention and treatment.

**Methods:** In this order we have examined patients with dental implants by using instrumental methods such as probing and percussion. Also we took a periapical and a panoramic radiograph, blood analisys, determined the hygienic indices and periotest measurement.

**Results:** We expected the cooperation of the patient, in order to learn him basic rules of implant hygiene. The successful treatment of the patients with peri-implant infection.

**Conclusion:** Oral implants are anchored in the jawbone and yet penetrate the mucosa, reaching the highly contaminated environment of the oral cavity. So, in order to maintenance it the patient have to learn and to follow special techniques of oral hygiene. Patients that do not respect this, would show a low level of the basic indices of oral hygiene. Due to implant placement and occlusal forces it is normal to expect 1.5 mm of bone loss in the first year of implant placement and 0.2 mm each year thereafter. A periapical radiograph should be taken after placement of the permanent prosthesis to: verify full seating of prosthesis and establish baseline bone level, first year implant evaluation, evaluate the implant for bone level changes annually from years 2-5; biannually thereafter. Preventive procedures have to be rendered in a well-organized recall program to assure adequate supportive therapy for a lifetime. Depending on continuing diagnosis during maintenance, developing peri-implant lesions should be treated adequate.

**Keywords:** Peri-implantitis, prevention, treatment, diagnosis, etiology.

## TOTAL EDENTATION RESTORATION WITH REMOVABLE COMPLETE DENTURES. ATYPICAL TEETH ARRANGEMENT

**Sovejanu Sinziana**

*Academic adviser*: Cigu Andor Toni, University Assistent, "Apollonia" University, Iasi, Romania

**Introduction:** Total edentation is a handicap concerning the functional masticatory aspect, as well as the socio-psychological one, with a negative impact on the quality of life. The prognathism condition is characterized by an enlarged mandible, an increased mandibular angle and arch of the circle of the sigmoid notch, and masticatory and phonetic disturbances. Our goal is to restore the intermaxillary relation, occlusal aspect, physiognomy, stability and retention with complete dentures in a pacient with accentuated mandible prognathism (class III malocclusion).

**Methods:** We used an atypical teeth arrangement in order to downgrade the class III malocclusion to class II, with transitional removable complete denture.

**Results:** We achieved the occlusal restoration, the improvement of the physiognomy, masticatory and phonetic functions. Also, the integration of the removable complete denture was attained.

**Discussions:** In arranging the teeth atypically, our goal was to to enhance the intermaxillary relation. The correct use of anthropometric points was observed. The complete denture specially designed for this case restored the correct vertical dimension of the occlusion, restoring the pacient's physiognomy. Also, the arrangement permitted us the improving the masticatory function. Because abnormal jaw relations lead to difficulty in pronunciation of the 'S' sound, we aimed to improve the pacient's phonetics.

## ROOT CANAL OBTURATION WITH THERMOPLASTIC GUTTA - PERCHA USING „SYSTEM B"

**Suceveanu Alina**

*Academic adviser:* Sîrbu Sofia, M.D., Ph.D., Professor,_State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The treatment of apical periodontitis is an actual problem of modern therapeutic dentistry. Sometimes contradictory, multiple methods of treatment cause difficulties in choosing the curative remedy and canal obturation technique. In case of inadequate treatment, or bad quality filling of the canals, there can appear various complications as odontogenic inflammation followed by consumption. Latest studies have shown that 60% of the failure in endodontic therapy is because of incomplete fillings of canal space.

Endodontic treatment that consists of sealing hermetically the root canal, over its whole length and width, will be completed by three-dimensional filling. A precise, hermetic and durable fill puts the canal system out of the circuit and isolates it from periapex. In such a way the periapex will remain well isolated from endodontic space, thus preventing possible complications.

**The goal** of the current research is to study the thermomechanical gutta-percha condensation technique for root canal filling.

**The aims:**

1. To study the advantages of the thermomechanical gutta-percha condensation technique;
2. To implement the nominated approach in performing this study of root canal filling in cases of periodontitis.

**Methods and materials:** The analysis of bibliographic data and root canal filling methods pointed out the idea of studying the heated lamination technique, System B. According to the world-class endodontic specialists, the root canal filling by using the vertical condensation method with thermoplastic gutta-percha, is nowadays the safest method to seal the endodontic canal system. The specialists from US have the same opinion- as it is a well-known center of modern endodontia.

The method has been studied at „Fală Dental"clinic. We assisted 11 patients with chronic periodontitis. Also we put into practice the method itself twice by obturating two cases of periodontitis of root canal.

**The results:** Analyzing 11 cases that we have been monitoring and two cases that we have put into practice, we observed that there were no complications arising after root canal filling with plastified gutta percha using System B.

**Conclusions:**

1.According to the bibliographic data, the usage of gutta percha for different canal filling techniques, is very popular among all the dentists in the world.

2. The System B of filling the root canal with thermoplastic gutta percha shows no difficulties in implementation.

3. The technique of root canal filling using System B does not require significant time.

**Keywords:** apical periodontitis, three-dimensional filling, thermoplastic gutta percha.

## USAGE OF THE SILICONE KEY FOR AN AS ACCURATE AESTHETIC RESTORATION

**Sîrcu Victor, De Paola Luigi, Balbi Vincenzo, Shardi Ardeshir, Vlad Popescu**

*Academic adviser*: Samaranda Nazarie, M.D., Ph.D., Lecturer, "Apollonia" University, Iasi, Romania

**Intoduction:** The present study discusses the most efficient restoration methods in the frontal area, as well as the distribution of their application according to age and sex.

**Objectives of the study:** The objective of the study, after establishing the incidence of aesthetic restorations through physiognomic obturations as the main method applied for the preservation of the teeth with aesthetic value according to age and sex, was to settle, starting from clinical data and radio-graphic images, a most adequate therapeutical scheme

**Materials and methods:** The study was performed on a group of patients with ages between 14-66 years, the working method including usage of the silicone key for an as accurate as possible dental morphology permitting the application of layered obturation, capable of reproducing most correctly the "natural" aspect of the tooth under discussion, comparatively with the classical methods of composite obturation by monoblock or sandwich techniques.

**Results:** Application of the technique of composite layering may solve the aesthetic defetcs that may occur in the restoration of teeth having an aesthetic value. Restoration of the physiognomic function will be completely established especially when applying the principle of a minimum invasive therapy, assuming conservation, as much as possible, of the natural tissues present in any type of restoration, along with implicitly satisfying high aesthetic qualities, once known that no obturation material is aesthetically better than the natural tooth structure

**Conclusions:** Consequently, layered stratification is viewed as an extermely valuable procedure for the recovery of the aesthetic function, as it succeeds, to a considerable extent, to reproduce layering of

the components present in a natural integral tooth, which necessarily requires conservation of the components of enamel margin-type in the vicinity of the lesion because, even at minimum sizes, the margin of the obturation should become invisible.

The indications for a direct therapeutical selection should always consider the individual decision of the patient, his medical, cosmetic and economic requirements and expectations.

**Keywords:** rehabilitation of the aesthetic function, layered obturation, silicone key.

## OBTAINING AN EFFECT OF THE "TOOTH NATURALLY" BY LAYERING METHODS FOR AESTHETIC RESTORATION

**Sîrcu Adrian, Maxim Mihai, Langella Gaetano, Covalciuc Ecaterina**

*Academic adviser*: Samaranda Nazarie, M.D., Ph.D., Lecturer, "Apollonia" University, Iasi, Romania

**Introduction:** The increasing concern in personal look and image also increased the demand for aesthetic and even cosmetic restorative treatments, calling for the application of some new, complex methods capable of meeting such requirements.

**Objectives of the study:** The study evaluated the distribution, on sexes, of the patients who required aesthetic restorative treatments.

**Materials and method:** The investigations were performed on a number of 37 de patients, interested in having an improved physiognomy of the frontal area through physiognomic obturations.

In the present study, the restorations made use of traditional techniques, involving no color and translucence control, as well as of modern layering methods for aesthetic restoration. In the group under investigation, the importance of the aesthetic requirements was established versus the sex of the patient, and the extent of application of the complex aesthetic restoration methods, out of the total number of treatments with physiognomic materials. Finally, the extent of patients' satisfaction for the result obtained was also determined.

**Results:** It is evident that women (representing 76% of the whole number of patients under study) are more concerned of the aesthetic quality of the obturations. Only 43% of all patients preferred complex obturation methods, even if they were told that higher aesthetic standards may be thus attained, their explanation being the prolonged duration of the treatment and also the higher costs involved. 71% of the patients under investigation considered that - aesthetically - the restoring treatment was highly satisfactory.

**Conclusions:** the aesthetic quality represents an essential condition for the success of the restoring treatment of the frontal group, the modern multilayered techniques with composite resins representing an optimum option in such cases.

**Keywords:** composite resins, aesthetic restorations.

## STEM CELLS IN DENTAL CARE

**Samson Stella**

*Academic adviser*: Viorel Nacu, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Tooth loss compromises human oral health. Although several prosthetic methods, such as artificial denture and dental implants, are clinical therapies to tooth loss problems, they are thought to have safety and usage time issues. Probably, development of stem cell research will, over time, transform dental practice in a magnitude for greater than did dental implants. Recently, tooth tissue engineering has attracted more and more attention. Stem cell based tissue engineering is thought to be a promising way to replace the missing tooth. This review outlines the recent progress in mesenchymal stem cell research and use in tooth regeneration, oral and craniofacial applications.

**Methods:** The study was effectuated on 25 extracted pigs teeth aged between 2-3 months. The cells were obtained from dental pulp fermentation in 0,25% dispase I for 10 min at 37 $^0$C. The cells were cultivated in 24 well in triplicate, in DMEM, 10% FBS, 5%CO2, 96% humidity, 37$^0$C.

**Results**: The cells were cultivated in 0,5x10$^6$ per well, in 24 well culture dish during five days. At the end of this period cells were colored by Romanovski and counted under the light microscope. The number of the cells after seven days cultivation were: 4,5 millions in one ml. of suspension.

**Conclusions**: Despite the rapid findings and wealth of data provided by *in vitro* and *in vivo* approaches in the field of dental regeneration, further research studies are required before pulp regeneration and even tooth restoration can be applied in dentistry. However, all data also confirm a realistic feasibility of dental tissue repair in the near future. It is obvious that our knowledge in dental tissue engineering expands rapidly. Stem cells from a tiny amount of tissue, such as the dental pulp, can be multiplied or expanded potentially to sufficient numbers for healing large, clinically relevant defects. Stem cells can differentiate into multiple cell lineages, thus providing the possibility that a common (stem) cell source can heal many tissues in the same patient, as opposed to the principle of harvesting healthy tissue to heal like tissue in association with autologous tissue grafting. Referring to previous findings, future experiments should be focused on the design of a highly sophisticated biological based scaffold system, which would greatly improve tooth viability and health maintenance in dentistry.

**Keywords** stem cell, tooth engineering, dental pulp stem cell.

## DENTAL DISPENSARY IN UKRAINE: STATE, QUESTIONS AND PROSPECTS

**Mynko L.**

*Academic adviser*: Sidyelnykova L., M.D., Ph.D., Associate Professor, Bogomolets National Medical University, Kiev, Ukraine

According to WHO data Dental disease is the most common and cover over 90% of the population of Ukraine. In recent years, this index tends to a constant increase. This leads to growth of somatic diseases, early loss of teeth, increasing the number of people who need dental prosthesis. Indicators of the intensity of cavities in both children and adult populations exceed European ones, reflecting the lack of treatment and preventive measures among the population.

**Objectives:** to identify the main reasons for the denial of dental care, optimize recommendations for attracting people to the dental clinical examination, treatment and prevention measures.

**Methods:** questioning, statistical and bibliographic methods.

**Results:** we conducted a survey among different population groups. Participated in this event 143 persons. The purpose of the research was to identify the main causes of failure of public dental care. The study found out: 39,2% (56 people) do not seek help from a dentist unless the cosmetic defect or pain is present, and consider themselves healthy; 11,9% (17 persons) do not visit dentist regularly because of the

lack of time; 2,8% (4 persons) refuse dental preventive and treatment measures and explain this as a fear of dental procedures; 7% (10 people) can not afford quality dental care; 0,7% (1 person) unable to attend dentist because of the lack of such specialists in the region where they live; 22,4% (32 people) visit a dentist once a year; 16% (23 people) regularly have preventive inspection and rehabilitation of oral cavity if necessary at the dentist's at least twice a year.

**Conclusions:** analyzing the methodological literature and research results, we found that the main reason for the growth of the prevalence of dental disease in Ukraine is the refusal of the population of clinical examination. This attitude of people is due to insufficient information provision about the mechanism of dental disease levels increasing and the importance of the scheduled dental help. Quite a large percentage of respondents have a fear of dental procedures. The reason for this phenomenon is stereotyped attitudes to dental equipment, which was formed in the middle of 20th century, when due to insufficient development of the dental industry and anesthetic drugs.

We consider it appropriate to create inform-groups from the number of the students of dental faculties from different medical universities of Ukraine who will inform people about the necessity of dental diseases prevention; to organize routine dental checkups in all educational institutions and at the workplace of ukrainians; to provide medical staff to the areas where is a lack of skilled medical workers. These measures will help to significantly reduce the prevalence of dental diseases among the population which will increase the quality of life and reduce the overall morbidity.

## PARODONTAL DISEASES IN DENTO-MAXILLARY ANOMALIES. ASSESSMENT AND ASPECTS OF THE COMPLEX ORTHODONTIC TREATMENT

**Beniş Alina, Avornic Lucia, Ciumeico Igor**

*Academic adviser:* Lupan Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic Moldova

**Introduction:** The emergence of the inflammation and parodontal disease is due to the activity of two complexes: the primary causal complex which includes the dental plaque and the secondary causal complex with its local factors and actions upon the primary causal complex. The dental plaque is the main cause of occurrence of the inflammatory parodontal disease. Local factors with negative influence on parodontal disease are dento-maxillary anomalies, occlusal trauma, form and integration of the labial frenulum, etc. Abnormalities in tooth size, position and shape can cause disorders in gingival architecture, which lead to the development of problem areas with difficulties in self-cleaning and as a result, the progressive accumulation of dental deposits. Also, the dento-maxillary anomalies create overload conditions for the periodontal support, with development of the occlusal trauma and later with an eventual gingival recession.

**The purpose** of the work was to assess the parodontal status in the case of dento-maxillary anomalies and the clinical and paraclinical supervision within a complex orthodontic treatment.

**Materials and methods:** The research involved the examination and treatment of 98 patients with different dento-maxillary anomalies, with an average age of 13,77 ± 0,36 in a range of 8-24 years old. The algorithm for the investigation of patients included exo- and endooral examination, fotostatic test, model biometric study; X-ray examination before and after orthodontic treatment, assessment of the parodontal disease through radiological and endooral clinical examination, by determining the gingival index of Parma, the papillary hemorrhage index of Mühlemann; and assessing of the oral hygiene index (OHI-S).

There were diagnosed parodontal diseases in 77 patients (78, 6%) were diagnosed with dento-maxillary anomalies and 21 patients (21, 4%) were considered parodontally healthy.

The orthodontic treatment was realized using fixed appliances with .022 slot brackets, Straight Wire Technique, Roth prescription, with individual elements for 41 patients (41, 8%) and with removable and functional appliances for 57 patients (58, 2%). The parodontal therapy included topical administration of 0,1% gel BioR, in the first group (of the research), and in the second group (of reference) - parodontal therapy with routine preparations.

**Results:** After a course of active orthodontic treatment the results of the complete healing were different -76,3% for the first group and 66,9% for the patients of the second group. The results varied in dependence of the used orthodontic appliances, 83,1% for the patients with fixed appliances and 62,7% for the patients treated with removable appliances.

**Conclusion:** The complex orthodontic treatment of dento-maxillary anomalies truthfully leads to parodontal healing granting the fixed appliances treatment.

**Key words:** dento-maxillary anomalie, parodontal disease, complex orthodontic treatment.

## REFERENCE INFORMATION ABOUT INFANTILE MELANODONTIE

**Beniş Alina, Avornic Lucia, Ciumeico Igor**

*Academic adviser:* Lupan Ion, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemiţanu", Chisinau, Republic Moldova

**Introduction:** Infantile melanodontie or Beltrami disease represents an alteration of the enamel surface of temporary teeth, which is specific for children beginning with the first 12 months of life. It is manifested by disappearance of enamel, which is dissolved or is detached as slabs. The teeth become fragile and brittle similar with glass and less resistant to damage. It causes practical injuries, aesthetic defect and risk of abscesses. The infantile melanodontie is often confused with nursing bottle caries, which differs by a total destruction of tooth crown and root. At the age of 6 years just a dental "stump" stays, in the form of black blades, which emerge from the gum leaving no orifices. Usually, permanent teeth are not affected, but it could present signs of enamel dysplasia.

**Materials and Methods:** A patient who was consulted at the age of 1 year and 4 months is placed under clinical observations. Further clinical explorations allowed the diagnosis of infantile melanodontie. The conservative treatment is hardly achieved and includes: frequent dental lavage; regular visits to the professional, in order to prevent abscesses: early control and treatment of all injuries, if necessary - the use of antibiotic dressing; attempts to change the oral microflora for obtaining a pH change; vitamin and mineral supplements.

**Results:** The success realized during three years evidence consists of the lack of periapical abscesses.

**Conclusion:** The infantile melanodontie is a major problem of child health with consequences on psychosomatic insertion in society.

**Key-words:** infantile melanodontie, temporary tooth, enamel.

## PERIOSTITIS

**Scutelnic Vladimir, Hîțu Dumitru**

State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** From the multitude of inflammatory odontogenic processes located within the mouth, periostitis occurs quite frequently. This is due to complications that arise from the patients` neglect, as a result of complications of a nonqualitative endodontic treatment and not the last one - the social-economic conditions. Thus, the concern about prevention and early treatment of dental maxillary diseases is still a key priority.

**Purpose:** This study aims to make an analysis of contemporary data of specialized literature to highlight a common form of inflammatory diseases of the oro-maxillo-facial region, namely periostitis and to study the proper clinical cases.

**Materials and methods:** We carried out a selective literature review analysis concerning statistics, etiology, clinical evolution, diagnosis and treatment of patients with periostitis and presented our own clinical cases.

**Results:** According to data of the Department of Oro-maxillo-facial Surgery (OMFS) in Chisinau, the infection ranks first among facial nosologic entities. Periostitis represents 29.7%, thus ranking first among patients with odontogenic infections, according to data of the Department of OMFS from 2003 [Stoica I. and S. Ababii]. Patients with odontogenic abscesses are ranked second - 17.9%, and patients with pericoronitis are ranked third - 10.2%.

If in 2002 the number of patients with odontogenic inflammatory processes was 410 patients, then in 2003 this number was 637 patients - representing 54% of all inflammatory processes. Thus the number of patients increased by 227 (55.4%).

We also found that in 2002 the male / female ratio was 1.3 / 1, while in 2003 this ratio was 1/1.

We want to mention that the number of visits in the first 24 hours from the onset of the disease increased: in 2002 - 4.5%; in 2003 - 11.6%. The number of visits markedly decreased in over 72 hours from the onset of the disease: in 2002 - 84%; in 2003-43.6%.

According to the localization of the process we have marked: vestibular - 85.6%, palatal 5% and lingual 9.4%.

**Recommendations:** Visit to the dentist twice a year, timely examination and treatment of the oral cavity diseases and referral to the specialist in case of infection will lead to considerable reduction of odontogenic inflammatory processes.

**Conclusions:**

1. Periostitis ranks first among odontogenic infections.
2. The process is more commonly located vestibularly.
3. Inflammatory processes occur mainly in men.

**Keywords:** periostitis, inflammation, odontogenic, frequency.

## USING THE METHODS OF ORAL CAVITY'S HYGIENE IN PROPHILAXY DISEASES

**Mihalachi Eudochia**

*Academic adviser*: Iura Marin, M.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The results of our study, allowed standing out the criteria of choosing different methods of hygiene of the oral cavity and also to apreciate their efficiency. The aim of the study: to make sensitize our population in order to use correct methods of oral hygiene.

**Materials and metods:** These methods were used on about 20 patients, who accused different sympthoms.

**Results**: Our results showed that a big percent of the manifested accusations of the patients was diminished for about 14-21 days, after an informatisation which was done regarding the corrrect using of the hygiene methods, also application of correct methods of these types mentions above.

**Conclusions**: Using the correct hygiene methods of oral cavity, wich shows efficiency in prophylaxy of different stomatological diseases.

**Key words**: Oral hygiene, water mouth spray, teeth brushing.

## PECULIARITIES OF EDUCATION OF CORRECT TOOTH BRUSHING TECNIQUE IN CHILDREN WITH MINTAL RETARDATION

**Bălteanu Olga, Ivasiuc Irina**

*Academic adviser*: Spinei Aurelia, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** This paper seeks to assess the peculiarities of education of correct tooth brushing technique in children with mental retardation.

**Purpose of work:** assess the efficiency in the education of correct tooth brushing technique of children with different degrees of mental retardation.

**Material and methods:**

The study included 82 children aged 7-17 years, institutionalized in auxiliary schools.

Group I covered 31 children with mild mental retardation ***(IQ 50-69*)***,

Group II comprised 28 children with moderate mental retardation ***(IQ 35-49*)***,

Group III represented 23 children with severe mental retardation ***(IQ 20-34*)***

****ICD-10, World Health Organization, 1992***.

The control group was constituted of 121 healthy children.

The working method included examination, and recording of data in individual prophylaxis sheets. Carious experience was evaluated by estimating the prevalence index and the COA index. Oral hygiene was assessed according to OHI-S 1964 index, G.Green, I.Vermillion, 1964, and the approximale plaque index by Lange, 1975 (API) at an interval of 1 week, 2 weeks, 1 month and 3 months. Health education for children in the form of play was performed at group, micro-group (3-5 children) and individual level; the educational methods were adapted to the age, intellectual development and educational, behavioral, and individual features of children. There has been developed and applied a series of audio-visual material and educational methods for medical and sanitary training of children. Illustrative material was used to ease the process of children's learning of correct brushing technique. Repeated, guided and supported, sessions were conducted for tooth brushing.

**Outcomes:** The prevalence index of dental caries falls within 83.24-93.45% limits, and the intensity of caries varies from 3.98 to 5.17 for COA index. Poor brushing was noted with all children in the study groups and with 85.95% children in the control group.

**Conclusions:** The study found that institutionalized children have high morbidity of dental caries, with multiple treatment needs. Children with moderate and particularly with severe mental retardation have limited ability to independently perform tooth brushing and need help from staff in cleaning the oral cavity.

**Key words:** dental caries, oral hygiene, tooth brushing technique, children with mental retardation.

## THE PULPITIS TREATMENT OF PERMANENT TEETH WITH UNFORMED APEX

**Ceban Irina**

*Academic adviser*: Stepco Elena, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The variety of clinical forms and the complexity of the pathogenic mechanisms make the pulpitis treatment of permanent teeth with unformed apex to keep being a subject with many unknowns, interesting both the researchers and also practitioners.The anatomic particularities of immature permanent teeth (bulky pulp chamber, relatively low dentine thickness and increased permeability) determine the incidence of pulp inflammation .The aim of pulp therapy is to establish an environment in which apexogenesis can occur. Currently, the optimum material for use in pulp therapy is Mineral Trioxide Aggregate (MTA). Compared with the traditional material of calcium hydroxide, it has superior long term sealing ability and stimulated a higher quality among reparative dentin.The aim of this study is to evaluate the efficacy of various pulpitis treatment methods of permanent teeth with unformed apex.

**Matherials and methods:** The study was realized on 87 patients of 6-13 years old, which are treated for one year period. Gathering of evidence about the patients is done by cards and their radiography and we estimated only treatment of permanent immature teeth. Then we made statistic analise related to clinical forms of pulpitis , method of treatment and its results.

**Results:** We have treated 36 immature permanent teeth, from whitch 1 with indirect capping, 7 with direct capping with $Ca(OH)_2$ , 2 with MTA direct capping , 9 with pulpotomy with $Ca(OH)_2$ 3 with MTA pulpotomy, 14 with pulpectomy ( apexification). According to our analises both treatment ( the ocalexic therapy and the method using MTA) resulted with apexogenesis. But comparing MTA and $Ca(OH)_2$ at the 12 month recall time ,2 of 9 teeth in the $Ca(OH)_2$ group were considered failures, whereas none of the teeth treated with MTA failed (0 of 3). Calcific metamorphosis was evident radiologically in 2 teeth treated with $Ca(OH)_2$ and 2 teeth treated with MTA.

**Conclusions:** The main objective in treatment of immature permanent teeth is to maintain pulp vitality in order to reach the necessary lenght of root and to achieve apexogenesis. The indications of pulp therapy depend on whether the pulp is vital or nonvital. Pulp capping is the first treatment of choice if the pulp is considered largely normal. For cases that the coronal pulp tissue has more advanced inflammation, pulpotomy is the next method of choice. The immature teeth with non-vital pulp are treated with a shallow (Cvek) pulpotomy or pulpectomy. While the decision for teeth undergoing apexogenesis or apexification has been determined by the result of pulp vitality, recent clinical case reports show that after conservative treatment, severely infected immature teeth with pulpitis can undergo healing and apexogenesis. Also, clinical assessment has demonstrated MTA is a good substitute for calcium hydroxide in vital pulp procedures.

**Key words:** pulp therapy, calcium hydroxide, mineral trioxide aggregate (MTA), apexogenisis

## CARIOUS EXPERIENCE IN INSTITUTIONALIZED CHILDREN

**Ivasiuc Irina, Bălteanu Olga**

*Academic adviser*: Spinei Aurelia, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Purpose:** This paper aims at assessing dental caries indicators and dental treatment needs in institutionalized children.

**Material and methods:** The clinical material of this paper is the investigation data of 203 institutionalized children. Group 1 represented 82 children aged 7-17 years with varying degrees of mental retardation institutionalized in auxiliary schools. The control group was formed of 121 healthy children institutionalized in boarding schools. Dental status was assessed against WHO criteria. Carious experience was evaluated by estimating the prevalence index (PI) of dental caries, dmft and DMFT indices.

**Results and discussions:** Prevalence index of dental caries falls within 83.24 to 93.45%, and the intensity of caries varies from 3.98 to 5.17 for the COA index.

The study found high dental caries indicators estimated in institutionalized children, especially children with mental retardation; it is obvious the need for minimal invasive treatment methods and the establishment of preventive programs that will help reduce damage by dental decay.

**Conclusions:** Improving dental care for institutionalized children under current conditions in Moldova should be designed by targeting the prevention of major dental periodontal disorders.

## PRACTICAL IMPLEMENTATION OF 3D CBCT TOMOGRAPHY IN DENTISTRY, DIAGNOSTICS OF THE AFFECTS OF MAXILLOFACILAL AREA AND ENT-ORGANS

**Babkina T., Demidova E., Zubok D., Zaporozhchenko P.**

Military Health Clinical Center of the Southern Region, Odessa, Ukraine

**Objective**: To determine the peculiarities of CBCT tomography implementation in dentistry, diagnostics of the affects of maxillofacial and ENT-organs, to formulate a contraindication and indication for the method of examination, to reveal the advantages and disadvantages of the method and to introduce the advanced algorithms of radiology to dentists, oral surgeons and otolaryngologists.

**Materials and Methods:** The report presents the experience of the network of offices of CBCT tomography (Kiev, Kharkov,Odessa, Donetsk), the archives of 2008 through 2011 were involved into the research; the patients from Surgical Rehabilitation Department of the Institute of Dental Sciences of the Academy of Medical Sciences of Ukraine in Odessa, Plastic Surgery Clinic "Virtus" in Odessa, Clinic of Maxillofacial Surgery of Military Medical Clinical Center of the Southern Region of Odessa were involved. The surveys were carried out on CBCT tomographs manufactured by "Vatech". The main methods were CBCT tomography of the two jaws relation, midface, nose sinuses and temporal bone. Most studies were performed before and after surgical and conservative treatment, patient age ranged from 3 to 86 years old. The most common pathologies were traumas, inflammatory processes, cysts, debride, congenital malformations, secondary edentia

**Results and Conclusions**: during the examination we managed to obtain high quality images of hard tissue, to determine the localization of pathological formations of bone fractures, the location of cysts of the jaws and nose sinuses, nasal polyps, to determine the presence or absence of maxillary antrum in-

flammatory process, as well as its origin (odontogenic sinusitis). High resolution and high-quality three-dimensional reconstructions allowed optimal defining and planning the scope and method of surgery in the short term, planning the most successful surgical treatment, determining the anatomical features of the channel, selecting the successful scheme of conservative therapy. The surveys that have been carried out in dynamics, helped to evaluate the cosmetic and functional results of reconstructive and plastic surgery, prevented the occurrence of complications, determined the effectiveness of conservative therapy. Based on these data, the peculiarities of the implementation of CDCT tomography in dentistry and diagnosing the affects of maxillofacial area, ENT – organs, have been determined, the contraindications and indications for the method of the survey have been formulated; the advantages and disadvantages have been revealed; the advanced algorithms of radiology have been introduced to dentists, oral surgeons and otolaryngologists.

# PHARMACY SECTION

## COMPARATIVE STUDY OF EXTRACTION TECHNIQUES FOR *CYNARA SCOLYMUS* L. CULTIVATED IN THE REPUBLIC OF MOLDOVA

**Ciobanu Cristina, Spatari Maria, Tihon Iurie**

*Academic adviser:* Diug Eugen, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Artichoke *Cynara scolymus* L. is a plant native to the Mediterranean basin with a long folk history in treating many liver diseases was introduced and adapted to specific climatic conditions of the Republic of Moldova.

**Aim:** This study aimed to analyze artichoke leaves extraction to identify its contents and to optimize conventional extraction of biologically active compounds various extraction techniques, solvent ratio were used.

**Materials and methods:** The dry leaves of *C. scolymus* L.were provided from the Centre for the Cultivation of Medicinal plants of the State Medical and Pharmaceutical University "Nicolae Testemițanu". The powdered leaves were subjected to extraction by Soxhlet extraction, maceration and percolation with ethanol (35, 70 and 90 %) and absolute methanol, using several sampling techniques multiple stage extraction, Squibb's and Bosin's exhaustive extraction. The extracts were further subjected to phytochemical tests using standard procedures.

**Rezults:** The tested ethanol plant extracts contained appreciable amounts of flavonoids. The highest flavonoids yield were exhibited in extracts with ethanol 70% as solvent: artichoke tincture (1:5) - (1,38%); fluid extract (1:2) – (0.77%). Generally higher total flavonoids content were obtained using aqueous (2,06 %) and methanol solvents (5,62%), as compared to the respective ethanol solvents.

**Conclusions:** The results of this study showed that the aqueous and methanol extracts can be used as raw materials for artichoke dry extract obtain. The Bosin percolation with ethanol 70% solvent was the suitable method for reaching fluid extracts with the highest yield of the flavonoids content.

**Keywords:** Artichoke, extraction, percolation, flavonoids.

## SYNTHESIS AND ANTIOXIDANT POTENTIAL EVALUATION OF SOME NEW THIAZOLIDINE-4-ONE DERIVATIVES

**Sha'at Fawzia, Bargaoanu Stefan, Lupaşcu Florentina**

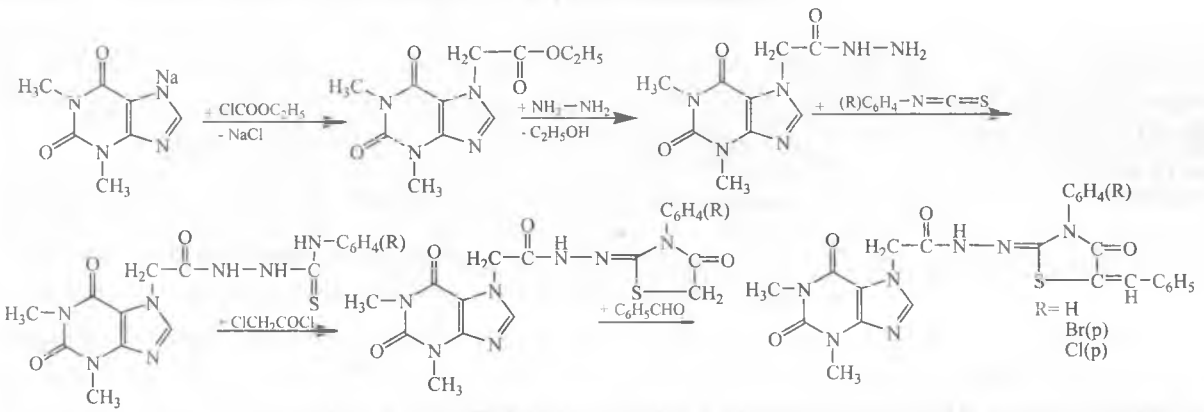
*Academic adviser:* Profire Lenuța, M.D., Ph.D., Professor, University of Medicine and Pharmacy „Grigore T. Popa", Iasi, Romania

**Introduction:** Diabetes mellitus (DM) is a chronic metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. It is a major and growing threat to global public health. It is estimated that more than 285 million people worldwide have DM and according to WHO statistics, in 2025 the number of those affected by this disease will have risen to over 380 million. There are two main categories of this disease. Type 1, diabetes mellitus (T1DM), also called insulin-dependent diabetes mellitus and Type 2, diabetes mellitus (T2DM), the noninsulin dependent diabetes mellitus.

Type 2 is far more common and it is characterized by disorders in insulin secretion and insulin resistance. This type of disease accounts for 90 to 95% of all diabetic patients. Diabetes claims four million lives every year and it is a leading cause of blindness, kidney failure, heart attack, stroke and amputation.

**Motivation and objectives:** The classical therapy of the T2DM mellitus has four categories of pharmacological agents: sulfonylureas and glinides, biguanides, thiazolidinediones and alpha-glucosidase inhibitors. In the development and progression of diabetes and its complications, it is generally accepted that the increased oxidative stress plays a key role too. Diabetes is usually accompanied by an increased production of free radicals or impaired antioxidant defences. The aim and the objectives of this study is synthesis and antioxidant potential evaluation of new benzyliden-thiazolidine-4-one derivatives as potential antidiabetic drugs.

**Materials and methods:** Benzylidine-thiazolidin-4-one derivatives with xanthine structure were obtained in several steps. Starting from 1,3-dimethyl-xanthine by reaction with chloracetyl chloride the corresponding ester was obtained, that with hydrazine hydrate leads to the hydrazide appropriate. This intermediary by reaction with aryl isothiocyanates (phenyl-, 4-chloro-phenyl- and 4-bromo-phenyl isothiocyanate) lead to the thiosemicarbazides that are cyclised with chloracethyl chloride. In the last step the obtained thiazolidine-4-ones were condensed with benzaldehyde. The antioxidant potential of the compounds was evaluated using phosphomolybdenum method.




**Results:** By chemical modulation of the 1,3-dimethyl-xanthine at nitrogen from 7 position, new thiazolidine-4-ones and benzylidene-thiazolidine-4-ones were synthesized. The intermediary and final compounds were purified by recrystalization and flash chromatography. In the IR spectra all functional groups were found which is an argument to confirm their structure.

**Conclusions:** Starting from 1,3-dimethyl-xanthine new thiazolidine-4-one derivatives with xanthine structure were obtained. The compounds were physico-chemical characterized and their structure was confirmed by IR spectroscopy. The antioxidant potential was also evaluated.

**Keywords**: xanthine, thiazolidine-2-one, antioxidant potential.

## PHARMACY CUSTOMERS' CONFIDENCE IN PHYTOTHERAPY

**Delibaltova Aliona**

*Academic adviser:* Zinaida Bezverhni, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Phytotherapy is an important part of modern medicine today. It is actively developing and improving while new potentials are constantly being discovered and broadened in scientific as well as in practical uses.

**Goal:** To identify the popularity as well as the level of trust regarding phytotherapy shown by the pharmacy customers in Republic of Moldova.

**Methods:** The study has been realized in one of the community pharmacy chains in Chişinău. During the study, 271 community pharmacy customers were questioned during their visits in pharmacy. The data were collected, processed using SPSS 20.0 statistical tool.

**Results:** According to the results of the analysis, 79,7% of the participants confirmed that they used phytotherapeutic methods frequently. According to the questionnaires, women were more likely then men to trust these methods (62,2% versus 37,8%). More than half of the interviewed consumers (54,2%) actually prefer herbal medicine for some sorts of prophylactic treatments. Only one fifth (20,3%) of the participants, most of which are 20 - 24 (38%) years old, do not use these methods. However, interviewers aged 25 and older start using phytotherapy more and more (95,9%). 62% of all participants stated that phytotherapy should be used with synthetic treatments together in order to achieve better results. However, a quarter of the respondents are confident that herbal medicine treatment can be basic in any case (24,7%).

Searching for the additional information about phytotherapy as well as for methods of treatment using herbal medicine, the majority of the participants (57,6%) use internet sources as means of research while 26,2% prefer to consult a pharmacist, 10% consult a doctor, and the rest of the consumers seek for an advice and information from the television, various literature, and family and friends.

**Conclusion:** Nowadays, modern society trusts phytotherapy and uses herbal medicines as an additional method of treatment. Therefore, there is a need for developing of phytotherapy as a basic method of treatment and to increase pharmacy assortment of herbal medicines.

## EVALUATION OF THE STATE DRUG POLICY IMPLEMENTATION

**Lazăr Florin**

*Academic adviser:* Safta Vladimir, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** The State drug policy (SDP) approved by the Decision of Parliament, No.1352-XV from 03.10.2002 is an essential element of the national health policy. It serves as a basis for the development of the pharmaceutical system, drugs legislation and pharmaceutical activity.

**The purpose** of this study is to evaluate the degree of the achievements of the State drug policy for the period of 2002-2012.

**Materials and methods:** In order to achieve the established tasks, it was performed an analysis of the medical and pharmaceutical legislation of Republic of Moldova, of the normative acts issued by the Government, as well as interviews with those responsible persons from the Ministry of Health, Medicines Agency, as well as the logical, comparative and situational analysis.

**Results:** For the implementation of SDP, in the studied period, the Government of Republic of Moldova approved 4 schedules (GD No.276/2003; GD No.202/2004; GD No.617 /2005; GD No.103/2008) which cumulatively met 81 actions. 11 items had to be realized until 2003, 8 till 2004, 13 till 2005, 15 till 2006, 6 till 2006 and 28 all the time. The result of the analysis showed that from the total number of

proposed measures 23,5% were fully completed; 28.4% partially implemented; 37.0% uncompleted; and there are 11.1% which continue to be implemented until the time of analysis. In the last three years the Government has not issued documents on implementing the SDP.

However, the analysis of the State drug policy content showed that 95% of the objectives are current nowadays and need only some changes and completions.

**Conclusion:** The research highlighted the degree of implementation of the State drug policy. The effectiveness of implementation is unsatisfactory, it equals with 34,6%.That is why, it is necessary to make some changes and additions to the State drug policy of the Republic of Moldova, to adjust it to the national health policy and to fortify its implementation.

## SOME ASPECTS OF CONTEMPORARY HEART FAILURE PHARMACOTHERAPY

**Chiriac Valentina**

*Academic adviser:* Cheptea Eduard, M.D., Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Heart failure is a clinical syndrome with complex etiology, being the cause of hospitalization for one in three people on average, and the main cause of hospitalization for people aged over 65 years. The average incidence is 3.7% per year in men and 2.5% in women, depending on the age the incidence is doubling for each decade, starting from 45 to 75 years. The aim of the study was to analyze the fundamental principles of contemporary pharmacotherapy of heart failure.

**Materials and methods:** Studying medical records of patients with heart failure of different genesis and severity. Statistical processing of data by using T-Student criterion.

**Results:** We studied records of observation of 49 patients, of whom 21 (43%) women and 28 (57%) men; most patients aged over 51 years (93.9%). Study showed that disease prevalence increases rapidly age-matched. Of the 49 patients, 24.5% were disabled, 38.8% were retired, 6.1% were unemployed and only 30.61% were employed. Most people were suffering from heart failure for 2-5 years (75.5%). The analysis using the NYHA criteria reveals prevalence of functional classes II-III in 93.9% of patients. Laboratory findings detected substantial deviation of the following relevant indicators: cholesterol to 34,7% and LDL to 95,9%, dyslipidemia increases the risk of atherosclerotic complications. High values of sodium were detected in 10.2% patients, even though they have followed diuretic therapy. After analyzing observational records we established that contemporary pharmacotherapy of heart failure includes a large variety of preparations, which are indicated with a wide frequency. The main medications: 1.converting enzyme inhibitors (lisinopril, ramipril) 39 (79.6%) to patients;2. β- adreno-blockers (bisoprolol, metoprolol, carvedilol, betaxolol) to 29 (59.2%)patients; 3. diuretics (furosemide, torasemid, indapamide, spironolactone) to 48 (98%) patients;4. cardiac glycosides to 13 (26.5%) patients. Adjuvant medications include: organic nitrates-46,9%, calcium channel blockers-28,6%, antiaggregators-69,4%, anticoagulants-67,3%, cardioprotectors-49%, anxiolytics and sedative-49%, statins -25%. In therapy of concomitant diseases were used: antibiotics-36,7%, antimycotics-16,32%, vitamins and minerals-85,71%, peripheral vasodilators-28,6%, oral hypoglycaemic-12,2%, bronchodilators-14.3% and others.

**Conclusion:** Contemporary treatment of heart failure is a complex and individualized process for each patient, including an extensive complex of preparations and pharmacological hygienic-dietary measures. Converting enzyme inhibitors, β-adreno-blockers, diuretics and cardiac glycosides are essential for treatment.

## THE ANTINOCICEPTIVE ROLE OF MAGNESIUM AFTER INTRACEREBROVENTRICULAR ADMINISTRATION

**Tudorancea Ionuț, Dondas Andrei, Neagu Oana**

*Academic adviser:* Tamba Bogdan, M.D., Ph.D., University of Medicine and Pharmacy "Gr. T. Popa", Iasi, Romania

**Aim of the study:** The present study is trying to identify experimental arguments for a magnesium role in central pain modulation following an intracerebroventricular (icv) administration.

**Materials and methods***:* Healthy adult male Wistar rats, initially weighing 350– 450 g, were used.The rats were maintained in polyethylene cages with food and water **ad libitum**, in a laboratory with controlled ambient temperature (21 ± 2°C) and under a 12h light–dark cycle. Groups of 7 rats were treated with magnesium (Mg) chloride,600 nmol Mg/ rat in 10 µL of saline. Stoelting stereotaxic equipment was used for icv administration, in previously ether-anesthetized animals. The controled group received an equal volume of saline. Hot plate and tail clip test was performed before 15, 30, 45, 60, 75 and 90 minutes after the administration of substances.

**Results***:* Our results show that intracerebroventricular administration of magnesium chloride has an analgesic effect for the hot plate and tail clip test. The maximum effect was observed after 75 minutes in tail clip and 90 minutes in hot plate.

**Discussions:** While the implication of Mg as a divalent cation has been studied before in relation to pain modulation, this is the first study to look at its effects on nociception after icv administration. As magnesium blocks the N-methyl-D-aspartate (NMDA) receptor and its associated ion channels, it can prevent central sensitization caused by peripheral nociceptive stimulation. However magnesium ion can block Ca influx and at the same time can noncompetitively antagonize NMDA receptor channels

**Conclusions:** Magnesium has an antinociceptive effect following icv administration. However, the slow onset of the analgesic effect observed in our experiments may involve a different mechanism or site of action than cited in the literature.

**Keywords:** Magnesium, intracerebroventricular, nociception.

## NEW 99mTC – SILICA NANOPARTICLES RADIOTRACER BIODISTRIBUTION STUDIED THROUGH SCINTIGRAPHY

**Tudorancea Ionuț, Dondas Andrei**

*Academic adviser:* Tamba Bogdan, M.D., Ph.D., University of Medicine and Pharmacy "Gr. T. Popa", Iasi, Romania

**Aim of the study:** Silica nanoparticles (SNP) are a new and versatile tool for targeting drug delivery. Our aim was to investigate biodistribution of a new SNP derivate in guinea pigs, in order to identify the possible uses as a drug carrier.

**Materials:** SNP were prepared at the *Institute of Chemistry and Bioanalytics, University of Applied Sciences Northwestern Switzerland, Muttenz, Switzerland.* One 124 nm size SNP derivate was used: AA124 - SNP carrying OH groups on the surface.

**Methods:** The procedure of 99mTc - SNP coupling was an in-house preparation performed as follows: 1- first of all, SNP were suspended in EtOH (5mg/ml) and sonicated for 15 or 20 min for better disper-

sion. 2- to this suspension, 200MBq/1ml of Na99mTcO4 solution was added and the suspension was stirred gently. 3- an excess of NaBH4 reducing agent was added quickly to the suspension and stirred for minimum 1 hour.

**Scintigraphic study design:** Groups of 4 animals were intravenously administered with 37MBq/kg/animal 99mTc-coupled AA124 SNP. Control groups received 37MBq/kg animal 99mTc. A dual head Siemens gamma camera with high resolution parallel collimators was used. The image acquisitions protocol started with a dynamic image acquisition for 60 seconds (1 image/sec), followed by a dynamic image acquisition for 4 minutes (1 image/min) and static planar images (256x256 Matrix, Zoom 2) every 15 minutes for a duration of 2h. The animals were sacrificed after 120 min and different organs were extracted entirely and submited to gamma camera.

**Results:** Following the i.v. administration, AA124 SNP did not penetrate the blood brain barrier. SNP were present in all the organs investigated except the brain, with different target/non target indexes, that were graphically represented for each of them.

**Conclusion:** These step results represent a promising support for the idea of using the AA124 as container for modular drug delivery system with promising future in therapeutics.

**Key words**: nanoparticles, radiotracer, biodistribution, scintigraphy.

**Acknowledgements:** Work partially supported by the grateful support of A&B Pharm Corp. (Romania)

## STUDIES REGARDING THE IN VITRO RELEASE MECHANISM AND RHEOLOGICAL PROPERTIES OF PIROXICAM FROM HYDROPHILIC GEL FORMULATIONS

**Cristea Sînziana**

*Academic adviser:* Dinu-Pirvu Cristina-Elena, M.D., Ph.D., Associate Professor; Ghica Mihaela Violeta, M.D., Ph.D., Associate Professor, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

**Introduction:** Piroxicam is one of the most used and prescribed drug for the treatment of inflammatory diseases. When administered topically, piroxicam is a better therapeutic alternative to the systemic way because of its local effects and an improved release on affected tissues, with a low incidence of systemic side effects. As a hydrogel, piroxicam ensures a good compliance of the patient and a very good therapeutic effect at the same time.

This paper evaluates the topical release systems of piroxicam from hydrogels formulated with sodium carboxymethylcellulose, following its kinetic and rheological properties.

**Methods:** In vitro release studies of piroxicam from hydrogels were carried out using a modified Franz diffusion cell fitted with a synthetic membrane (in this case, cellophane). Rheological measurements were performed at two different temperatures, using a rotational viscometer Multi-Visc Fungilab, equipped with standard spindles by recording the shear stress at different speeds in ascending and then descending order

**Results:** The release data analyzed by the Higuchi equation provided the highest correlation coefficients. The flow curves which followed the Herschel-Bulkley model revealed a non-newtonian shear thinning behaviour.

**Conclusion:** The effectiveness of piroxicam released from hydrogels and the rheological characteristics are strongly influenced by the formulation properties as viscosity agents and the concentration of its

components. Thus, the kinetic and rheological profiles can be modulated by the formulations factors in order to obtain the optimal drug amount released at the application site.

**Keywords**: Piroxicam, Hydrogel, Release, Formulation.

## COMPARATIVE STUDIES OF THE TOTAL ANTRACENE DERIVAIES IN SPECIES OF THE GENUS *HYPERICUM* L. FROM THE FLORA OF REPUBLIC OF MOLDOVA

**Benea Anna**

Academic adviser: Nistreanu Anatolie, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Genus Hypericum (St. John's wort) includes about 400 species. In the wild flora of the Republic of Moldova grow 5 species of *Hypericum*: *H. perforatum* L., *H. elegans* Steph., *H. hirsutum* L., *H tetrapterum* Fries., H. montanum L.. The European Pharmacopoeia 6th Ed. (2008) and the Romanian Pharmacopoeia Xth (1993) for obtaining plant material are allowed the species of H. perforatum L.. St. John's wort is a natural antidepressant remedy, due to numerous active components contained, including the content of anthracene derivatives (hypericin, pseudohypericin).

**The aim of this study**: Identification and determination of anthracene derivatives in different plant materials from fourspecies of Hypericum; the study of dynamics of accumulation of these compounds in H. perforatum species, depends on the phenological stage and geographic area.

**Materials and methods:** For quantitative ***determination of anthracene derivatives*** were collected aerial parts and separately the vegetative organs (flowers, leaves, stems) from June to August 2010 - at the flowering stage: the species *H. perforatum* L. and *H. elegans* Steph in the forest near the village Tîrnova of Donduseni district; H.hirsutum L. and H. tetrapterum Fries.–in reservation "Codru" Strășeni district. For this study the dynamics of accumulation of anthracene derivatives, from June to August 2011 were collected, the aerial parts of H. perforatum L. in different phenological stages (from floral budding stage to fruiting stage) and geographic area (meadow the village Nimoreni Ialoveni district, the village Tîrnova Dondușeni district forest; the village Lopățica Cahul district forest. The qualitative analysis of the anthracene derivatives was performed by thin layer chromatography (TLC). The determination of anthracene derivatives, in various plant materials, was performed with the UV-VIS spectrophotometric method developed by V. A. Kurkin et al. (2008).

**Results**: Was observed the presence of the hypericin on the chromatograms in all analyzed samples (Rf = 0,77; 0,88). Performed researches had shown that the total of anthracene derivatives (%, in terms of hypericin) contents are different: *in the aerial parts* of H. perforatum L. - 0,22% , H. elegans Steph. – 0,37% , H. tetrapterum Fries. - 0,17% , H. hirsutum L. - 0,06%; *in the flowers* of H. perforatum L. - 0,58%, H. elegans Steph.– 0,53% , H. tetrapterum Fries. – 0, 35%, H. hirsutum L. - 0,08%; ***in the leaves*** **of** H. perforatum L. – 0,21%, H.elegans Steph. – 0,26% , H. tetrapterum Fries. - 0,21%, H. hirsutum L. - 0,14%; ***in the stems*** of H. perforatum L. – 0,036%, H. elegans Steph. – 0,031%, H. tetrapterum Fries. - 0,035%, H. hirsutum L. - 0,017%.

**Conclusions:** The total of anthracene derivatives (%, in terms of hypericin) the contents are maximal in aerial parts of H. perforatum L in the flowering phase and collected in the North of the country.

**Keywords:** Hypericum, UV/VIS spectrophotometry, hypericins, TLC.

# THE CHEMICAL PROFILE OF BASIL BIO-VARIETIES AND ITS IMPLICATION ON THE BIOLOGICAL ACTIVITY

**Gradinariu Veronica, Punga Olga**

*Academic adviser:* Hancianu Monica, M.D., Ph.D. Professor; Cioanca Oana, M.D., Assistant, University of Medicine and Pharmacy "Gr.T.Popa", Iasi, Romania

**Introduction:** Basil (*Ocimum basilicum L.)* is intensively used as culinary item for its flavoring qualities and also it is a well known principle in Romanian traditional medicine. It is used especially for treating gastrointestinal and respiratory malfunctions. On the other hand, Tulsi (*Ocimum sanctum L.*) is an ayurvedic principle recommended for the treatment of bronchitis, bronchial asthma, malaria, diarrhea, dysentery, skin diseases, arthritis and fever.

**Material and methods:** The analyses were performed on the essential oils and the hidroalcoholic (50 %) extracts from *O. basilicum* (Ob), *O. basilicum var. rubrum* (Obr) *and O. sanctum* (Os), included in biocultures from Romania (Biological Research Center *"Stejarul"* Piatra Neamt).The volatile fractions isolated by steam distillation in Neo-Clevenger apparatus were analyzed using gas chromatography (GS-MS). The polyphenols were determined using Folin-Ciocalteu method. A high performance liquid chromatography (HPLC-MS) was used to identify the main compounds. In addition, the antioxidant capacity was investigated by two tests: scavenger of DPPH (2,2-diphenyl-1-picrylhydrazyl) radicals and pherozine chelating activity.

**Results:** As expected, the GS-MS analysis showed that there were qualitative differences between the three types of isolated volatile oils. From the total amount of compounds, we selected for all samples only the main 42 substances that could be identified. A few were found in all the essential oils: linalool, camphor, β-elemene, epi-bicyclosesquiphelandrene, β-cariophilene, l-α-bergamotene. The highest quantities were recorded for linalool that were between 19.25 % (Os) and 66.72% (Obr). Still, important compounds, such as 1,8-cineole, estragole, eugenole and trans-beta-ocimene, were missing in the *O. basilicum var. rubrum* sample. The phenolic derivatives profile established by HPLC for all three samples included rosmarinic acid, capheic acid, chlorogenic acid and galic acid. As for the flavonoids, catechine, rutoside, apigenin-7-glucoside, luteoline and apigenine were the common compounds, identified in all the samples. The antioxidant test results were correlated to the chemical composition with differences between the samples.The best scavenger activity was noted for Obr sample with IC50 (inhibbitory concentration) value of 0.8 mg/mL.

**Conclusion:** All in all, the results state once again that *O. sanctum* has a different chemical profile and, therefore, should not be substituted by *O. basilicum* in food supplements. Also, as a surprise, the ethanolic extracts of *O. basilicum* var. *rubrum* could succesfully be used as antioxidant source.

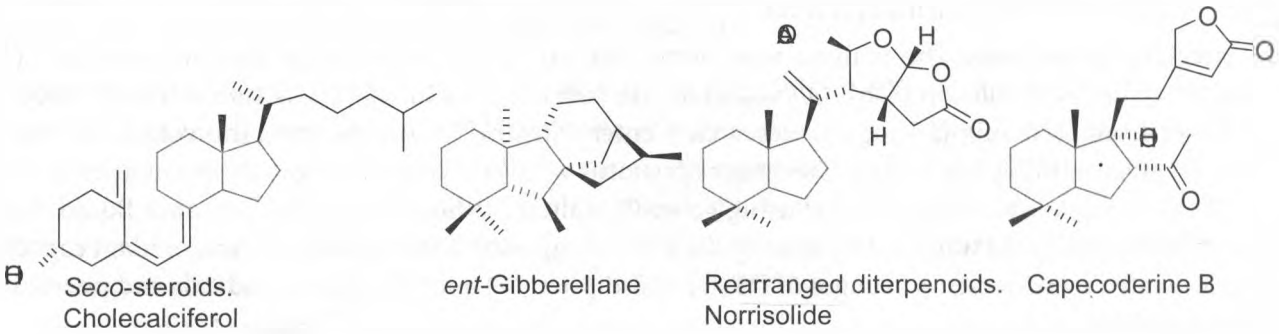
**Keywords**: Basil, antioxidant activity, HPLC, GS-MS.

# ELABORATION OF NEW METHODS FOR THE SYNTHESIS OF PERHYDRINDANIC COMPOUNDS WITH RELEVANT BIOLOGICAL ACTIVITY

**Bolocan Vladimir, Harghel Petru**

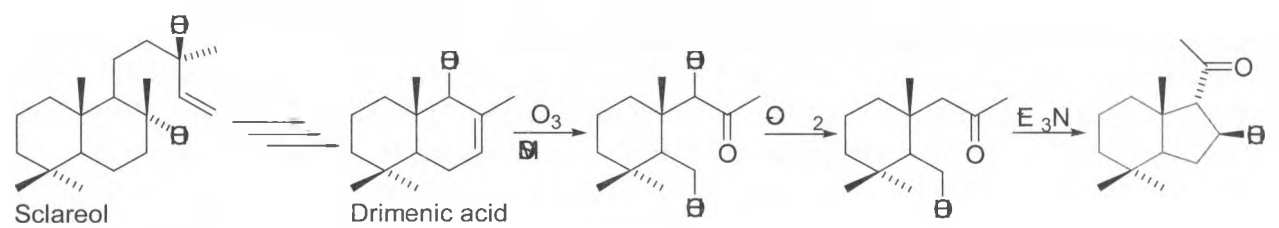
*Academic adviser:* Kulcitski Veaceslav, M.D., Ph.D., Professor, Institute of Chemistry, Academy of Sciences of the Republic of Moldova

**Introduction**: Perhydrindanes represents a common motif in natural sources. The number of representatives isolated from the plants and other natural sources is in growth. The well know compounds like seco-steroids, gibberellines have incorporated into their structure the perhydrindanic unit.




**Methods and results**: In recent years other terpenic perhydrindanes have been identified both in plants and in marine organisms. In particular, the biologically active Norrisolide was isolated from the nudibranch *Cromodoris norrisi*. Chapecoderin B and C have been found in the leaves of the Brazillian medicinal plant *Echinodorus macrophyllus*. They showed cytotoxicity against murine lymphoma L 1210 cell with $lC_{50}$ value of 7.2 and 6.0 μg/ml.

Taking into consideration the active investigations in this field and provided problem of extraction of this compounds from the natural sources, where their quantity is not so large, a chemical synthesis of perhydrindanic framework has been suggested. Sclareol is used as initial substrate. It was subjected to oxidative degradation to obtain drimenic acid, that is the key substrate for the final stage of the synthesis. This one represents „One pot synthesis", including ozonization of drimenic acid, decomposition of ozonides with DMS and cyclization of the last compound under the influence of one base to obtain perhydrindanic skeleton.




The full set of analytical tools was used for structure elucidation of reaction intermediates and final products, including NMR spectroscopy, GS-MS, TLC, column chromatography. The obtained perhydrindane can be used for following SAR studies, as well as staring material for other relevant compounds. The synthetic scheme was optimized and can be used on preparative scale.

# IRON OXIDE NANOPARTICLES AND LIPID PEROXIDATION IN ACUTE BLOOD LOSS

**Chinedum Nchege**

*Academic adviser:* Vazhnichaya Ye., M.D., Ph.D., Ukrainian Medical Stomatological Academy, Poltava, Ukraine.

**Introduction:** In many countries around the world the researchers study the iron oxide nanoparticles because of their unique super magnetic properties and an opportunity for biodegradation in the organism as well as of wide spread and cheapness of this biometal.

There are more and more preparations based on the supermagnetic nanoparticles. They are used as contrast agents for a magnetic resonant tomography. They also are applied in oncology for the treatment of malignant tumors and in hematology for the therapy of ferrous-deficit anemia.

It is known that nanoparticles of iron oxides have an increased chemical reactance. The authors described that inhalation of iron oxide nanoparticles is accompanied by the induction of active forms of oxygen in the lung cells. However, the data on iron nanoparticles' influence on oxidative-reductive homeostasis are limited and have inconsistent character.

**Aims and objectives:** The research purpose is to study the influence of iron oxide nanoparticles on lipid peroxidation and superoxide dismutase (SOD) activity in red blood cells under the conditions of acute blood loss.

**Methods and results:** Experiments were carried out in 15 albino male Wistar rats with body weight of 180-200g. Blood loss was designed by the extraction of 25% of circulating blood from the heart under the general anesthesia inhalation.

Ultrasmall supermagnetic nanoparticles of iron oxide (II, III), so called magnetite, were obtained by the method of electronic-radiation technology in the Paton Electric Welding Institute of the National Academy of Sciences of Ukraine. They are in the form of powder containing magnetite nanoparticles with a size of 8-16 nm. Suspension of these nanoparticles was prepared ex tempore and administered to the animals intraperitoneally in a dose of 1.35 mg of iron/kg immediately after the blood loss. According to the results of laser spectroscopy in such liquid 99.9% of particles have the size of 50 nm. Mass of these nanoparticles is 46% from iron oxides mass. Other fraction is represented by the particles with a size of 830 nm.

Sl. 8. 3 hours after that the contents of the products reacting with thiobarbituric acid (TBA-reactants) and the activity of SOD by the inhibition of epinephrine auto-oxidation were determined. The data were processed statistically by the standard programs Microsoft Excel.

Sl. 9. It is shown, that acute blood loss is characterized by the increase of TBA-reactants' concentration in red blood cells up to 11.2 extinction units per milliliter in comparison with 3.2 extinction units per milliliter of blood in intact animals. The activity of SOD is 52.6% and essentially does not differ from the control.

After the administration of iron oxide nanoparticles the TBA-reactants' level is equal 7.2 extinction units per milliliter that is in 1.6 times less than in blood loss without pharmacological correction. SOD activity in this group is 46.4% that is authentically lower as compared to blood loss without nanoparticles administration.

The received results testify that acute blood loss in the early period of its compensation is accompanied by amplified formation of lipid peroxidation intermediates on a background of normal SOD's activity. The iron oxide nanoparticles reduce the expressiveness of oxidative stress that can be connected to fast improvement of hematological parameters and restoration of hemoglobin level which plays the important role in maintenance of oxidative balance in red blood cells.

**Conclusion**: Thus, ultrasmall super magnetic nanoparticles of iron oxide (II, III) as 1.35mg of iron/kg of body weight administered parenterally in acute blood loss can inhibit lipid peroxidation in erythrocytes. Probably, the reducing of oxidative stress in the given situation is connected with fast restoration of hemoglobin level, but the mechanism of this action demands further studying.

| Int | bl l | Fe | M | Fe-M |
|---|---|---|---|---|
| 54,3+7,5 | 52,6+10,0 | 56,4+12,3 | 62+8,9 | 49,1+8,8 |

| | ТБКАП | едЕ/мл(г) | |
|---|---|---|---|
| | *Эр* | *печень* | |
| Инт | 3,15+0,88 | 14,05+2,33 | 6 |
| | 3,01+0,49 | | 11 |
| кр 3ч | 11,21+0,97 | 11,82+0,97 | 4 |
| кр +НЧЖ | 7,15+1,35 | 11,7+0,61 | 5 |
| кр+М | 2,13+0,73 | 13,58+1,52 | 4 |

## NEAMON-HEPA CAPSULES – PHARMACEUTICAL PRECLINICAL AND CLINICAL STUDIES

**Nicolai Eugeniu, Golovin Pavel, Talpalaru Angelina, Ungureanu Alina, Rusnac Liliana, Parii Sergiu**

*Academic adviser:* Valica V., M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Neamon-hepa combination drug preparation, capsules, developed at the Scientific Center of Drug Research of the State University of Medicine and Pharmacy "Nicolae Testemitanu" contains the following active ingredients: arginine aspartate, spironolactone and BioR (extract of Spirulina platensis biomass), firstly proposed as a combination drug.

**Matherials amd methods:** Preparation of dosage of Neamon-hepa capsules: weight and volume measurement of the components, lactose impregnation with BioR, and drying of lactose with BioR and pulverization of dry mixture, preparation of mixes: I (spironolactone: anhydrous lactose in 1:2 ratio), II (mix the mix I with lactose impregnated with BioR), III (mix the mix II with cornstarch, microcrystalline cellulose, magnesium stearate), IV-final (mix the mix III with dry L-arginine aspartate), conditioning in capsules.

**Results:** Efficacy and safety of the product was demonstrated by clinical experiments on a group of 56 mice by determining the acute and chronic toxicity in toxic hepatitis model induced by CCl4 (carbon tetrachloride). The results indicate that in laboratory animals with induced chronic liver damage, receiving Neamon-hepa preparation, declined significantly body mass, decreased hepatomegaly, improved functional status of liver expressed by reduced total bilirubin, ALT, AST alkaline phosphatase, and serum cholesterol lactatdehydrogenase.

Neamon-hepa, has undergone clinical trials, according to the protocol on 55 patients (men and women, aged 18-61 years) with liver cirrhosis B and D of viral etiology, stage Child-Pugh A. Patients were subjected to clinical, laboratory and instrument examination. Data from this study indicates the efficacy and safety of Neamon-Hepa in the treatment of liver cirrhosis and chronic hepatitis, characterized by its hepatoprotective property, evidenced through improved liver function capacity (cytolytic index improvement) and reduction of portal hypertension.

**Conclusion**: Biopharmaceutical research showed a high bioavailability of active substances, which proves the adecuate selection of dosage form and correct pharmacotehnologic processes. Preclinical and clinical studies have shown that Neamon-hepa, capsules can be used in the treatment of chronic viral hepatitis and liver cirrhosis. The drug has a polyfunctional action and a spectrum of activity that is intended to provide a multidirectional therapeutic complex effect.

**Key words**: cirrhosis, alkaline phosphatase, lactatdehydrogenase.

## CAPILLARY ELECTROPHORESIS METHOD FOR MONITORING DONEPEZIL HYDROCHORIDE IN PLASMA OF PATIENTS TREATED FOR ALZHEIMER'S DISEASE

**Dima Ines**

*Academic advisers:* Gubandru Miriana, M.D., Associate Professor; Ilie Mihaela, M.D., Researcher, University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

**Introduction:** Donepezil is a prescription drug to treat mild, moderate, and severe stages of Alzheimer's disease. By its selective and reversible inhibition on acetylcholinesterase especially in the brain, the peripheral effects are minimal. These aspects together with its lack of hepatotoxicity represent the advantages of using donepezil towards other drugs, becoming the first line therapy for this pathology. The secundary effects involve muscarinic cholinergic symptoms (nausea, vomit, diarrhea), as well as nicotinic $N_1$ (insomnia) and $N_2$ (muscular cramps).

**Aim:** The paper aims to find and validate a sensitive method for the assay of donepezil in plasma using a non-aqueous capillary electrophoresis method.

**Matherials and methods:** Donepezil hydrochloride (PhEur.), methanol (HPLC isocratic grade), acetonitrile (HPLC grade), hexane and ammonium acetate of analytical purity were bought from Sigma, human plasma was obtained from the Haematological Institute in Bucharest. Agilent AG1610 capillary electrophoresis with diode array detector was used as main analytical instrument. Human plasma samples spiked with known amounts of donepezil were used for the bioanalytical validation of the method, which was performed according to the EMA guidelines. The method was also tested on real samples for patients treated with donepezil.

**Results:** The non-aqueous capillary electrophoresis method for the donepezil assay in plasma was performed using as a running buffer a mixture of methanol: acetonitrile (70:30) with 15 mM ammonium acetate, a silica PVA coated capillary (64 cm length, 50μm i.d.), 10 minutes 50 mbarr hydrodynamic injection, 30kV applied voltage; detection was performed at 315 nm (which lacks spectral interference of proteins), but the 268 and 220 nm wavelengths were also monitored. The sample were extracted with hexane from alkalinized 1:10 diluted plasma, dried under nitrogen flow, and then re-dissolved in a small amount of mobile phase. Limit of detection obtained was 0.5 μg/mL.

**Conclusions:** The method is sensitive and can be applied to monitor donepezil hydrochloride plasma levels in patients treated for Alzheimer's disease.

**Keywords:** donepezil hydrochloride, plasmatic level, non-aqueous capillary electrophoresis, therapeutic monitoring.

## THE METILURACIL FORMULA DEVELOPMENT AND AVAILABILITY RESEARCH OF THE ACTIVE PRINCIPLES

**Vitreac Natalia**

*Academic adviser*: Guranda Diana, Doctor of Pharmacy, Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** It was statistically proved that each fifth patient who consults a doctor in the Central Europe suffers from a skin disease. The causes of the continual growth of the number of people who suffer of skin diseases are unknown, but it is sure, however, that they are generally due to different types of environmental influences. At the moment, the forms for topical use constitute 4-6% of all the medical forms used in medicine. Among them, 80% are ointments. In this context, it is up-to-date to develop a new pharmaceutical form for external use- an ointment with metiluracil, which shows regenerating and anti-inflammatory properties.

**Methods:** During the research were used some active substances like: metilurcail, excipients and auxiliary materials like: Polyethylene, Vaseline, Lanolin. Solvents: purified water. Special devices for determination and measurements: UV-VIS spectrophotometer Agilent – 8453, the device for determining the dissolution rate, officialized by the Romanian Pharmacopoeia X, commercialized by Erweka Company. Taking into consideration the above, our aim was to develop a soft medical form with metiluracil with different excipients and to study the pharmaceutical availability of these forms.

**Results:** We developed the composition for five soft pharmaceutical forms with metiluracil using different hydrosoluble and liposoluble excipients. The ointments homogeneity was determined according to the Romanian Pharmacopoeia X standards. For each group of ointments was performed the determination of the dissolution rate and pharmaceutical availability. Also, it was determined the kinetics of dissolution and drawn up the concentration and time dependence chart.

**Conclusions:**

1. As a result of metiluracil incorporation with excipients of different nature, we developed five compositions, containing different kind of ointment base.
2. We determined the homogeneity of the proposed ointments.
3. We determined the pharmaceutical availability and the constant of dissolutin rate.

**Key words**: ointment, metiluracil, skin disease, pharmaceutical form

## DRUG REIMBURSEMENT INDICATORS IN CERTAIN COUNTRIES

**Chițan Elena**

*Academic adviser*: Brumărel Mihail, M.D., Ph.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** An important role in shaping the range of reimbursable drugs from insurance funds within the hospital and outpatient, is determined by various indicators.

**The purpose and objectives:** Assessment literature review of the main indicators of the range of drug training, in the network of reimbursement systems in different countries and assessing the overall level of influence of these indicators.

**Material and methods:** Descriptive study of drug reimbursement systems in different countries and the analysis and differentiation of the training determinant factors of the range of drugs.

**Results**: The survey is based on the drugs reimbursement system within the health insurances from 40 countries from different geographical areas. The pharmaceutical systems was entirely investigated, specifying drug reimbursement systems in out-patient and in-patient sector. As a result were relieved the basic training indicators of the range of drugs and of the reimbursement of their cost: the reimbursement schemes; co-payments on medicines; patient's social class; correlation between personal incomes and expenditure for drugs, Rx or OTC drugs, reference pricing policy, medicines evaluation criteria to be covered on positive list; medical, economic and social performance of the drug. The basis of the assessment of the reimbursement schemes carries description of reimbursement eligibility according to the 4 general types: product-specific eligibility, disease-specific eligibility, population-group-specific eligibility, consumption-based eligibility. The most used benchmark is the specific of the product - 33 or 82,5% of states, and the specific of the disease accounting for 15 countries (38%). Presence of all the eligibilities was found in 13(32%) states. In 38 (95%) countries is used the out-of pocket payments. For the out-patient sector, out-of pocket payments include 4 types of co-payment: fixed; percentage (the most commonly used - 28 states (68%); reference price system; deductibles; their various combinations is extensively use in 15 (38%) states; for the hospital sector co-payment is present in 2 states. In 24 (62%) of the analyzed countries, is used reference price system as a factor correlated with the patient's co-payment and the amount of reimbursed medicines. As criteria for reimbursement of drugs are used, as well, the following: for inpatient sector: the presence of clinical guidelines, the clinical benefit, the convenience of use and the price of the drug; for the outpatient sector: the cost-effectiveness analysis, the cost benefit, the pharmacoeconomic studies results, the impact on insurance companies budget, the value and therapeutic benefit.

**Conclusions:** As a result of the survey was determined that in different countries are used various index for the training of the drug reimbursement lists and systems, provision and use of which guarantees the functioning effectiveness of the drug compensation system.

**Keywords:** indicators, reimbursement, drugs.

## ARGUMENTATION OF THE COMPONENT OF COMBINED ANTIBACTERIAL EAR DROPS

**Iuresco Tatiana, Suvorchina Olga, Tihon Iurie**

*Academic adviser*: Livia Uncu, Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Combined medicines have an important role. They provide the advantages of combination therapy, extending the range of therapeutic options, also exclude the necessity of extemporal preparation of prescription formulations. However, it should take into account that the therapy with combined drugs it must be known the full composition of drug and pharmacological properties of each component, even if the properties are well known.

**Materials and methods:** For research it was used State Nomenclature of drugs from Republic of Moldova (01.04.2012); Nomenclature of drugs of Romania (01.01.2012); State Register of drugs of Russia (01.01.2012); Formulation of European Medical Agency (01.01.2012); Formulation of USA (FDA Drugs) (01.01.2012); Formulation of Canada (01.01.2012); Great Britain Formulation (01.02.2012); instructions for use of drugs; Standards of quality of analytical documents and therapeutic protocols in otorhinolaryngology (section "ear diseases").

**Results:** The last years in the world pharmaceutical market appeared an huge number of drugs, including ear drops. Many of them are analogues of known drugs with the same composition, but with a different brand name and various manufacturers. In Moldova the arsenal of remedies with topical and ear application is quite low and there is only one local producer-Depofarm Gmb., which produces a single name for ear drops. There were proposed to analyze the composition and pharmacological action of substances containing in the most common ear drop to develop the new combinations, to increase the efficiency of treatment. The most products (58.3%) are combinations of antimicrobials, corticosteroids, antiinflammatory, anesthetic and antiseptic medicines. Unfortunately, there are not registered medicines of vegetable origin. The study records observations in the ORL department of the Municipal Hospital E. Coțaga, Chisinau revealed a large number (%) of admissions with diagnosis of otitis, especially perforation. The main goal in patients treatment with inflammatory diseases of the outer and middle ear is a local antibacterial and antiinflammatory one. A group of drugs commonly used for these diseases are fluoroquinolones antibiotics. The most popular fluoroquinolone antibiotic is *ciprofloxacin*. It has a broad spectrum of activity and is active against gram-positive and gram-negative microorganisms, as well as Chlamydia. Because of this it was chosen *ciprofloxacin* as the main active substance in the development of combined ear drops. Also, in combined therapy of inflammatory diseases it is important for medicines to contain raw vegetable materials. It was selected the plant basil (Ocimum basilicum L.). It is used in medicine for its antibacterial, antiibflamator, antiseptic, antispasmodic effects.

**Conclusions:** In conclusion it is important to develop a new antibacterial composition for ear diseases, containing raw vegetable materials.

**Keywords:** ear drops, combinated drugs, antibacterial medicines, ciprofloxacin, basil.

## ELABORATION OF ANTISEPTICAL SOLUTION ON THE BASE OF ALCOHOLS

**Paduraru Natalia, Bobrov Elena, Baranețchi Iana**

*Academic adviser*: Livia Uncu, Ph.D., Associate Professor; Nicolae Ciobanu, Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Actually, it is proved that a large part of hospital infections are caused by poor hand hygiene. It is very important for hands to be clean and without pathogens, which can be achieved only by applying disinfectants. The WHO's guidelines indicate that the best disinfectant for hands is the one which is based on alcohol, being more effectively against the agents of hospital infections and also it has a good compatibility with skin. Unfortunately, the most disinfectants that are used both in our country and abroad do not satisfy the requirements of effectiveness, harmlessness, ecology, etc. Studies showing the adequacy or inadequacy of hand cleansing by microbiological proof are few. From these few studies, it can be assumed that hands remain contaminated with the risk of transmitting organisms via hands. Their results showed that hand contamination with transient organisms was significantly less likely after the use of an alcohol-based hand rub compared with the medicated wipe or soap and water.

From 52 disinfectants which are registered and approved in Republic of Moldova, only 4 of them are recommended and can be used for surgical disinfection of hands. For all of these, they are all imported and quite expensive. Due to all these, we propose to elaborate a local antiseptic solution for hands, based on ethanol and isopropanol with a fast action and a broad spectrum of antimicrobial activity. It also ensures an optimal pH for hands. The auxiliary substances which will be used will not irritate skin, even after a long use.

**Materials and methods:** four solutions containing ethyl alcohol and isopropyl alcohol in different reports; determination of the minimum inhibitory concentration (MIC) of these formulations against bacteria; the method of serial dilution in liquid nutrient medium (meat peptone broth 2%, pH = 7.0), liquid nutrient medium (broth Saturo).

**Results:** The most alcohol-based hand antiseptics contain ethanol, isopropanol or n-propanol, or a combination of two of these products. Concentrations are given as either percentage of volume (= ml/100 ml, abbreviated % v/v), percentage of weight (= g/100 g, abbreviated % m/m), or percentage of eight/volume (= g/100 ml, abbreviated % m/v).

Antimicrobial activity was determined for four solutions with different concentrations of alcohol. The antimicrobial activity of alcohols results from their ability to denature proteins. Alcohol solutions containing 60–80% alcohol are most effective, with higher concentrations being less potent.This paradox results from the fact that proteins are not enatured easily in the absence of water. Alcohols have excellent in vitro germicidal activity against Gram-positive and Gram-negative vegetative bacteria (including multi drug-resistant pathogens such as MRSA and VRE), M.tuberculosis, and a variety of fungi.

**Conclusions:** The efficacy of alcohol-based hand hygiene products is affected by a number of factors including the type of alcohol used, concentration of alcohol, contact time, volume of alcohol used, and whether the hands are wet when the alcohol is applied.

**Keywords:** Antiseptic solution, nosocomial infections, analysis, quality control, antimicrobial activity.

## THE IMPROVEMENT OF THE MANAGEMENT OF PHARMACIES IN THE REPUBLIC OF MOLDOVA

**Sprincean Vladislav, Trofaila Roman, Cassir Serghei**

*Academic adviser:* Elizaveta Reabov, Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

Nowadays there are many controversial issues and paradoxes in the pharmaceutical activity of the Republic of Moldova (RM), connected either with the lack of maturity of market or with its already established structure.

In this work we tried to express our opinion about the actual situation and propose the alternative model of the development of pharmaceutical industry in RM in the most rational ways, based on the concept "from local to global". Being in a working process we decided to raise many actual topics which concern the majority of the different social groups connected with the pharmaceutical activity in RM. These groups are: students of faculty Pharmacy, qualified pharmacists, doctors and professors and simple citizens, who face every day with advantages and disadvantages of local pharmacies. Some of the actual topics are: the economic benefits of raising and supporting local drugs' manufacturers, the gradual introduction of new technologies of organization and management, the rationalization of the whole pharmaceutical industry of RM basing on the models of developed countries, etc.

The results of our research were unexpected not at the point of criticism of already established structure of local market, but at the point of a huge will, potential and opportunity to improve the whole system of organization and management of pharmaceutical industry in RM. The selected concept "from local to global" expresses the main idea of this inevitable process – we should realize all the necessary changes step by step, previously providing all the possible ways of the idea's development. Thus we can forward our desires and powers in the right direction – from starting the improvement in our township, to expansion of its potential results in all the regions of our native land – the Republic of Moldova.

**Key words:** pharmacy, organization and management of pharmacies, the improvement of local market, from local to global.

## FORMULATION AND RESEARCH OF THE SOLID DISPER SYSTEMS OF SPIRONOLACTONE

**Allaa M.Fathi Baroud**

*Academic adviser*: Diug Eugen, Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** Starting from the fact that spironolactone is practically insoluble in water, its formulation orodispersible is important to enhance dissolution rapid absorption from the oral cavity.

**Aim:** To increase the solubility of spironolactone was evaluated its association with different solubilized to form solid disperse systems.

**Material and method:** *Preparation of solid dispersion systems:* Solid dispersion was obtained using the combined method: solvent evaporation and melting. Spironolactone and polyvinylpyrrolidone is dissolved in ethyl alcohol 96%. The resulting solution is left to complete evaporation of ethanol. Polyethylene glycol 4000 melts at a temperature of + 60$^0$ C, the mixture plus spironolactone and polyvinylpyrrolidone. Stir continuously until completely cooled. Parallel to prepare and physical mixture of spironolactone, polyvinylpyrrolidone and polyethylene glycol.

*Thermo-gravimetric analysis*: Substances studied, physical mixture and solid dispersion were subjected to thermo-gravimetric analysis derivatographic O1500D model MOM (Hungary). Samples were heated to a temperature of 1020$^0$ C, the heating rate of 10$^0$ C/min. He sought modification of the caloric content of substances and mixtures, recorded temperature variation, in the mass during heat treatment.

**Results:** The dispersed solid is characterized the 3 effects of decomposition in the temperature range 45 to 471$^0$ C, the mass loss of 86.96%. At a temperature of about 60$^0$ C the degradation of the system is associated with an endothermic effect, characteristic of a melting process which confirms that the system presents a phase change. There follows a series of endothermic and exothermic effects. Total mass loss is 97.91%.

**Conclusions:** The results confirm the formation of a solid dispersed system of spironolactone with polyvinylpyrrolidone and Polyethylene glycol 4000.

**Key words:** Spironolactone, polyvinylpyrrolidone, polyethylene glycol, solid dispers system, thermogravimetric analysis.

## PEDAGOGICAL AND PSYCHOLOGICAL FEATURES OF PHARMACISTS DIGITAL SYSTEMS GENERATION TRAINING

**Lysenko O., Tsekhmister Ya.**

Bogomolets National Medical University, Kiev, Ukraine,

**Introduction:** The vast majority of modern students were born from 1984 to 1994 during the so-called breakthrough of informational and communicational technologies development.

This fact largely determines the change in the outlook of the modern young generation, its reorientation in the digital technology.

Increasingly in the literature used the specialized terms that describe today's young adults as Net Generation (Tapscott, 1997), Digital Natives (Prensky, 2001), Generation Y (McCrindle, 2006) and others that express the modern students reliance on the informational and communicational devices such as PCs, mobile phones, digital music players, video games and other tools of the digital age.

According to the results of research scientists discovered about twenty psychological futures which characterize network generation: technological thinking, search engine mobility inductive learning, multifunction, emotional openness etc. Most of which positively influence the process of achieving theoretical knowledge and practical skills.

**Methods:** Concept-comparative, structure-systemic analysis; questioning; statistics.

**Results:** In order to optimize the process of pharmacists training among the representatives of digital system generation, there is a necessity of existing educational forms modernization, taking to attention psychological characteristics of modern students, including:

- increasing the volume of work performed with the usage of digital technology in the classworks and homework;
- explanation of the working strategy for the usage of on-line information retrieval systems, critical thinking and test results obtained in preparing for classes;
- teaching methods diversification of acquiring knowledge through group discussions, shared creativity, brainstorming, trainings and peer review of work performed;
- representation of kinesthetic perception of educational material;
- sustainable feedback between teacher and students during classroom activities and independent work of students using modern online technologies.

**Conclusions:** Thus, in dynamic development of the global pharmaceutical science, the crucial optimization is being performed in the field of pharmacists professional training in view of existing psychological characteristics of digital system generation in order to enhance cognitive activity, creative initiatives and public engagement, education of highly qualified and competitive professionals capable of introspection and critical comprehension of professional work performed.

**Key words:** pharmacists training, digital system generation, educational forms modernization.

## DETERMINATION OF CALCIUM IN CITRUS JUICE USING ATOMIC ABSORPTION SPECTROSCOPY METHOD

**Uncu Andrei, Vîslouh Oxana**

*Academic adviser*: Iurie Tihon, Ph.D., University Assistant, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction**: Atomic Absorption Spectroscopy is a modern instrumental method that gives us the possibility to determine the chemical elements, in special, in a polycomponent sample. This technique involves aspirating an aqueous sample into a flame where the analyte is atomized. An isolated atom absorbs light at very specific wavelengths that are unique for each element. The amount of light absorbed by the analyte depends upon the concentration of analyte (Beer's law). By measuring the amount of light absorbed by the flame, it is possible to determine the concentration of analyte in the sample. Also, a series

of standard solutions must be prepared in order to calibrate the response of the instrument. This method it was used for the determination of the calcium in some fresh citrus juices, as it is difficult to determine it using other methods, because of the presence of other elements and organic compounds.

**Materials and methods**: Orange, lemon, mandarin and grapefruit fresh juice, balance, juice extractor, atomic absorption spectrometer Thermo Scientific ICE 3000, centrifugal, vacuum filtration set, pH meter, laboratory glassware, chemical reagents prepared in accordance with requirements of RF X.

**Results**: Calcium absorbs strongly at 239.9 nm and 422.7 nm. This property allows us to determine the concentration of the calcium atom in a such complex mixture like the citrus juice. The method of Atomic Absorption Spectroscopy uses the light of the desired wavelength which passed through the flame containing the atomized analyte. For the determination of samples were diluted and for avoiding the partial ionization in the acetylene flame the lanthanum chloride was added to samples. The calibration curve was established and then the elemental calcium was determined. The analysis was made in series of three replicates for each fruit juice and showed us these results: in orange juice – 30 mg/100 ml, tangerines – 35 mg/100 ml, grapefruit – 84 mg/100 ml and lemon – 34 mg/100 ml.

**Conclusions**: It was determined the total calcium from fresh citrus juices. The obtained results would be used for the benchmarking of ionic calcium with the total one. The applied method was efficient, sensible and precise, relative error having an acceptable value.

**Keywords**: Atomic Absorption Spectroscopy, calcium, citrus juice, absorbance.

## PHARMACEUTICAL BIOAVAILABILITY OF COMBINED OINTMENTS WITH IZOHYDRAFURAL AND METHYLURACIL

**Bobrov Elena, Vîslouh Oxana, Suvorchina Olga, Tihon Iurie, Uncu Andrei**

*Academic adviser*: Livia Uncu, Ph.D., Associate Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** A difficult problem in the human pathology is the purulent infections due to the necessity of taking several drugs for a complex action such as: antimicrobial, regenerating, anti-inflammatory and analgesic. It is actual the elaboration of a new formulation for external use - combined ointment with izohydrafural and methyluracil, which combines the antibacterial action of izohydrafural and the regenerating and antiinflammatory actions of methyluracil.

**Materials and methods:** In research it was used the active substances: izohydrafural, methyluracil and excipients: polyethyleneglycol 400, vaseline, stearyl alcohol, cetyl alcohol, propyleneglycol, glycerin, tween 80, sodium laurilsulphate. Also, in research it was used the device Erweka USP for the dialysis method, UV-VIS spectrophotometer Agilent-8453, Milipore membrane 0,22 mm and dimethylformamide as dissolution medium.

**Results:** First of all it was elaborated the optimal formulation and the manufacturing technology of combined ointments. It was used different excipients, obtaining four models of combined ointments with concentrations of 0,1% for izohydrafural and 5% for methyluracil. Pharmaceutical availability of active principles from ointments was determined by the method of dialysis membrane. It was respected the conditions of method: 50 ml dimethylformamide - as dissolution medium, the temperature - 37±1$^0$C. From the obtained dialysate, it was dosed the active substances by UV-VIS spectrophotometric method: izohydrafural at wavelength 373 nm and methyluracil at 267 nm. From the results, it was established that the maximum of disposal speed of active substances occurs in composition containing polyethylenegly-

col 400, stearin alcohol, glycerin, sodium lauryl sulphate, purified water. Also, it was assayed the dissolution rate constant ($K_d$) and half-life time ($T_{50\%}$) $_{for\ all}$ four compositions. It was established that the highest value of the dissolution rate constant has the same ointment containing polyethyleneglycol 400, stearin alcohol, glycerin, sodium lauryl sulphate and purified water. For izohydrafural - $K_d$ = 0,018 $min^{-1}$ and for methyluracil - $K_d$ = 0,064 $min^{-1}$. At the same composition of ointment was determined the smallest value of half-life time of 38,5 minutes for izohydrafural and half-life time of 42,2 minutes, respectively for methyluracil.

**Conclusions:** It was concluded that the best pharmaceutical bioavailability of active principles from the four compositions of ointments resulted at ointment containing polyethyleneglycol 400, stearin alcohol, glycerin, sodium lauryl sulphate and purified water.

**Keywords:** izohydrafural, methyluracil, pharmaceutical bioavailability, dissolution rate constant, half-life time.

## MODERN ASPECTS OF PHARMACOTHERAPY OF HEART ISCHEMIC DISEASE

**Kostova Irina**

*Academic adviser*: Cheptea, Eduard, M.D., Lecturer, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

The heart ischemic disease is a major medical problem of our century. In all its manifestations, it affects the most active age groups, leads to a temporary or permanent disability cases and sometimes to a sudden death. Over the past 4 years 17, 3 million people died from cardiovascular disease, which accounted for 30% of all mortality cases in the world. In Moldova (2010) the mortality rate from cardiovascular disease was 56.2% where 41% is due to heart ischemic disease.

**Purpose:** To desplay the modern aspects of pharmacotherapy of heart ischemic disease.

**Objectives:** To analyze and explore the modern pharmacotherapy of heart ischemic disease.

**Materials:** Case reports of patients who were hospitalized in the department of chronic heart failure in Moldavian Scientific Research Institute of Cardiology during the period from November 2011 to January 2012. Methods: T- student, IBM SPSS Statistics.

**Results:** The heart ischemic disease is more common in people older than 65 years; more susceptible were urban residents (55.56%), 44.44% - were rural. 37,04 % are women, 62,96 % - were men (the total quantity of patients are 54). 49 patients (90.74%) were prescribed organic nitrates, 31 patients (57.41%) - beta-blockers, 49 patients (90.74%) - diuretics, 45 patients (83.34%) - antiplatelet therapy, 11 patients (20.37%) - cardiotonics, 19 patients (35.19%) - calcium channel blockers, 26 patients (48.15%) - anticoagulants.

**Conclusions**: It should be noted, that modern medicine has a wide range of antianginal drugs (organic nitrates, beta-blockers, diuretics, antiplatelet agents, cardiotonics, calcium channel blockers, etc.), enabling to prevent complications of heart ischemic disease, to prolong life and to improve its quality.

**Key words**: modern pharmacotherapy, organic nitrates, beta-blockers, diuretics, antiplatelet agents, cardiotonics, calcium channel blockers, angina pectoris, cardiac accident.

## HOMEOPATHY IN PAST, PRESENT AND FUTURE

**Gîncu Svetlana**

*Academic adviser*: Safta Vladimir, M.D., Ph.D., Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova

**Introduction:** In reality homeopathic medicine is also highlighting the existence of the second type with the drug commonly used in international therapeutic allopathic medicine. The common name of "medicine" concept reflects a common origin, function and similar structure. That is why if there are allopathic pharmacology, by analogy there must be a science of homeopathic medicine "homeopathic pharmacology".

**Objective:** The aim of the work lies on the evaluation of existing homeopathy situation from the Republic of Moldova based on interviewing patients, pharmacists and doctors, and evaluating the homeopathic medication related with the allopathic medication.

**Materials and methods:** This study is a selective research-district. Raw data were collected through surveys, using structured questionnaires and official statistics published by the Ministry of Health of the Republic of Moldova and Drug Agency. For collecting the necessary information we have prepared three questionnaires using the patient's opinion, pharmacists and doctors.

**Results:** After data collection, all questionnaires were analyzed and were elaborated an analytical tables. Today homeopathy is still in a period of reviewing precisions and attempt to be placed with principles based on record cards.

**Conclusion:** The analysis is underlining facts and accomplishments from the end of XVIIIth Century (The Past) to the beginning of the XXIst Century (The Present). On the basis of the obtained dates, we will make an incursion in the future (Perspective of homeopathy).

**Key words**: homeopathy, allopathic medicine.

## ELABORATION AND STUDY OF CERVICAL OSMOTIC SYSTEMS WITH PAPAVERINE HYDROCHLORIDE

**Jitaru Mariana**

*Academic adviser:* Guranda Diana, Ph.D. in Pharmacy, Associated Professor; Tihon Iurie, Ph.D. in Pharmacy, Associated Professor, State Medical and Pharmaceutical University "Nicolae Testemițanu", Chisinau, Republic of Moldova.

**Introduction:** The number of patients with gynecological problems is increasing constantly. Two common problems in this area are dysmenorrhea and threatened abortion. Dysmenorrhea is one of the most common gynecologic complaints in young women who present to clinicians.

**Material and Methods**: Dysmenorrhoea affects nearly 50% of women capable of reproducing and occurs more frequently among those aged between 15 and 25 years, approximately 10% of these being actually in a state of physical disability for a few days. Threatened abortion is a condition that occurs during the first 20 weeks of pregnancy, in which vaginal bleeding suggests an increased risk of miscarriage. Vaginal bleeding is common in early pregnancy. About 1 of every 4 pregnant women has some bleeding during the first few months. About half of these women stop bleeding and have a normal pregnancy. It is necessary to develop a pharmaceutical form of local action. One of the procedures often used in gynecology is the procedure of relaxation and dilation of the uterus.

Substance that can be used in this case is papaverine hydrochloride. Papaverine relaxes various smooth muscles. This relaxation may be prominent if spasm exists. The muscle cell is not paralyzed by papaverine and still responds to drugs and other stimuli causing contraction. The antispasmodic effect is a direct one, and unrelated to muscle innervations.

**Results**: Purpose of this work was to obtain and research cervical osmotic systems with papaverine hydrochloride. In the experimental part we created the technology of preparation, we determined the availability of pharmaceutical "in vitro" and we developed the pharmacopoeia monograph.

**Conclusions**: In this study we have analyzed three types, with different components of the recipients. The results obtained have chosen based on form, which have the best availability and if all three forms correspond to pharmacopoeial following parameters: description, identification, average weight and uniformity of mass, time of complete deformation, dosage.

**Key words:** dysmenorrheal, papaverine, miscarriage.

# INDEX