ANAESTHETIC RISK FACTORS, MECHANISMS AND PREVENTION

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The risk is an undesirable or dreaded event. Its probability may be decreased by the prevention, its severity by the protection and its perception reduced by the insurance acting on the acceptation and the transfer of the financial cost.

The security is a situation in which the activity process occurs without any damage for those who are undergoing or acting. Nevertheless the absolute security, with a zero risk level, is a myth but security must be a target taking in account realistic technical efforts and reasonable costs. The security in anaesthesia has considerably improved during these last two decades, by the fact of pharmacological and technological advances, introduction of standards and guidelines, education, evolution of structures and improvement of the anaesthetic team management. Anaesthesia linked mortality has been decreased by 20 in France between 1984 and 1999, evoluting from 1/13.000 to 1/200.000. The reduction is evident for each ASA grade but mainly for the ASA 4 patients. Similar between 0 to 40 years old patients, the mortality increases after 40 and mainly after 75 years. The mortality has strongly decreased when in the same time the number of anaesthetics in France was twice the number, from 3.5 to 8.0 millions of anaesthetics, concerning patient older and presenting several pathologies. Nevertheless, the risk has changed. Twenty years ago, respiratory causes were the most frequent, but to–day the death by cardiac arrest, during and after anaesthesia, is mainly related to heart and vascular failures.

Depression of respiratory centres previously frequently involved has been reduced when difficult intubation and inhalation remain main causes. Among cardiac causes, the cardiogenic shock with or without myocardial infarction, due to anaemia and hypoxia is the main cause of death. Similarly, absolute hypovolaemia by haemorrhage and relative hypovolaemia by sympathoplegia are frequent mechanisms of acute cardiac failure.

The risk has diminished but mainly, the risk has changed. The analysis of accidents reveals active and latent risk factors. A modern tendency is to emphasise latent risks, which are intricate to active factors to lead to the accident. Human factors are usually involved in most of the anaesthetic accidents and near-miss incidents. Specific types of investigation are adapted to the various levels of risks.

Recently, new dangerous behaviours have appeared, linked to the search of analgesia, novelty, originality, performance, and paradoxically of security at any price. The anaesthesia risk is related to main risk factors involving anaesthesia team, techniques and procedures, devices, surroundings, information, organisation and management. Specific measures are recommended to avoid these risks but general arrangements must be focused on a selection of priorities, programmes of risk management based upon a better control of the patient status, of the anaesthesia process, of the organisation and team management and of the analysis of accidents.

Many progresses have been made but remain also to perform, mainly by a better organisation and management and a prevention of human errors. There is a need for a policy of risk management, a culture of security by the development of an evaluation of professional practice (EPP), as a part of the Continuing Professional Development (CPD).

ACTIVITY OF THE INTERNATIONAL ANERSTHESIA TRAINING CENTRE IN MOLDOVA

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During the First International Congress of the Society of Anesthesiology Reanimatology of the Republic of Moldova was organized a meeting of the WFSA, ESA/NASC, SARRM, FEEA officials and Ministry of Health of the Republic of Moldova. The conclusion of the meeting was that for better anesthesia Moldova needs support in continuous education, improvement in technical&material, equipment & technologies and implementation of modern standards of care in the fild. During the Congress, invited speakers and WFSA, ESA/NASC officials beside teaching and presentation activity visited many hospitals for creating an impression documentation of the current situation.

Decision to focus efforts in improvement of situation in anesthesia was made: in short time after Congress, in December 2007 was organized First Course in Pediatric Anesthesia in Moldova. Why pediatrics – the answer is clear: because together with obstetric anesthesia this are the most vulnerable subspecialties in current created situation in Moldova (political and social instability, poorly developed economy, lack of equipment, medical insurance system in development, lack of modern equipment and drugs in anesthesia).

The First Course was organized on 19-21 December and had many aspects: training of trainers: Moldavian anesthesiologist Gabriela Munteanu had a fellowship in Switzerland in the field of pediatric anesthesia, and together with Markus Schily she prepared

and translated presentations for course in Moldova; donation of a fully modern equipped ADU anesthesia station to be used for training and clinical activity; promotion of the project among politicians, Ministry of Health officials, businessmen's etc. The course took place at the Centre of Mother and Child in Chisinau, and had such a format not to disturb clinical activity: morning lectures followed by clinical activity in OR, demonstrating advantages of modern equipment and drugs, then in the afternoon presentations and discussion of the cases performed in the OR.

After the success of the first course, next courses were organized in 3 more different hospitals: Republican Pediatric Hospital "Emilian Cotaga", Chisinau, Municipal Hospital Balti, Municipal Pediatric Hospital "Valentin Ignatenco" Chisinau. As lecturers were involved local speakers (Lidia Dolghier, Gabriela Munteanu, Angela Maniuc) and invited ones: Markus Schily, Switzerland, Josef Holzki, Germany, Iacob Katz, Israel.

Clinical teaching and recently virtual teaching models have partly replaced the old model of frontal lectures. Small group teaching, in combination with short lectures and clinical teaching have been implemented first time in an ongoing pediatric anesthesia course.

This project leaded to the foundation of the IATC (International Anesthesia Teaching Center). The institution of IATC understands itself as a bridge between the professional societies, ministries of health, hospital directors and physicians. Beside education, IATC is consulting how to improve quality and safety in hospitals and anesthesia. IATC – Moldova is the name of the Moldavian branch of IATC. Other IATC branches exist in between in Serbia and Croatia. All work under the same philosophy of "Safe Anesthesia, Safe Surgery".

The IATC - Moldova build up 3 new teaching centers: The emergency hospital (for adults), the Center of Mother and Child and the IATC mobile. The somehow difficult task of finding resources for equipment needed innovative thinking, and close cooperation with the government of Moldova and Germany, and the WFSA and ESA.

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MANAGEMENTUL ANESTEZIC LA POPULAȚIA GERIATRICA

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Vârstnicii sunt din ce în ce mai bine reprezentați pe globul pământesc. În anul 2010, oamenii de 65 ani şi mai în vârstă vor depăşi 20% din populația Europei de Vest şi a Japoniei şi 15% din populația Americii de Nord. Ca urmare, numărul pacienților vârstnici supuşi intervențiilor chirurgicale este în creştere permanentă.

A fost constatat faptul că, mai mult de jumătate din persoanele cu vârsta peste 65 ani vor necesita cel puțin o intervenție chirurgicală pe parcursul anilor rămaşi de viață.

În prezent, în Republica Moldova sunt peste 500 mii beneficiari de pensii pentru limita de vârstă.

Actualmente bătrânețea este considerată începând cu vârsta de 65 ani şi se clasifică în: vârstnici – 65-74 ani; bătrâni – 76 - 84 ani; şi foarte bătrâni – peste 85 ani.

Cu avansarea în vârstă creşte morbiditatea şi mortalitatea, mai ales la pacienții peste 75 de ani. Studii anterioare au arătat că în intervențiile chirurgicale ortopedice, urologice, ginecologice sau la nivelul abdomenului, pacienții vârstnici sunt cu mult mai sensibili la anestezie decât cei tineri, prin ce măresc riscul anestezico-chirurgical fiind în unele cazuri depăşit. "Vârsta înaintată a pacientului, este suficientă de ai atribui categoria morții naturale, ceea ce determină ca statusul lor ASA sa fie crescut" (R. Roy in "Clinical anesthesia", Kirby et al. 2002), fiind pentru un pacient bătrân (76 - 84 ani) gr III ASA, iar pentru foarte bătrân (peste 85 ani) gr IV ASA.

Anestezia regională este frecvent utilizată la persoanele în vârstă. Cunoaşterea particularităților legate de vârstă este importantă în scopul asigurării unei anestezii regionale optimale la pacientul în etate.

Reducerea numărului de neuroni, deteriorarea tecii mielinice la nivelul rădăcinilor ventrale şi dorsale, schimbările de anatomie ale coloanei vertebrale şi ale orificiilor intervertebrale pot contribui la alterarea caracteristicilor blocului nervos din cadrul anesteziei regionale (1,2). Mai mult decât atât, numărul axonilor la nivelul nervilor periferici descreşte odată cu înaintarea în vârstă, viteza de conducere este diminuată. (3,4). Odată cu înaintarea în vârstă, schimbările țesutului conjunctiv pot duce la schimbări de distribuție locală precum şi modificarea ratei de distribuție a anesteticului local de la locul de injectare (spațiul epidural) spre locurile de acționare. (1)

Cu avansarea în vârstă creşte şi aria de răspândire a analgeziei după administrarea unei doze fixe de anestezic local în spațiul epidural. (fig. 1) (5,7).

Recent a fost demonstrat faptul că răspândirea analgeziei la pacientul în vârstă este mai mare decât la pacientul tânăr. (8,9) În plus, pacientul în vârstă demonstrează şi un debut mai rapid al analgeziei în segmentele caudale iar regresia blocului este mai prelungită. În cazul anesteziei epidurale cu ropivacaină sau bupivacaină se constată o creştere a intensității precum