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BOOK OF ABSTRACTS



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ANATOMY, MORPHOLOGICAL SCIENCES, GENETICS, BIOCHEMISTRY

THE EFFECTS OF SOME SWEETENERS ON BLOOD GLUCOSE LEVEL

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Introduction: This experiment aims to analyze the psychological effect of sweeteners on blood glucose level. After the carbohydrates ingestion, the level of blood glucose increases. Insulin is activated by high levels of glucose; it increases the permeability of cell membranes and activates enzymes which lower the blood glucose level. At the same time the insulin activates the necessary enzymes for synthesis of cholesterol and fatty acids. For these reasons not only people with diabetes use sweeteners also the obese and healthy people use sweeteners to keep their ideal weight. **Material and Methods:** Four sweeteners were used to test their effect on volunteers in the first minutes after administration. The sweeteners' effect was analyzed with modified oral glucose tolerance test. The classical test takes blood samples every 30 minutes for 2 hours. In this case the blood samples are taken at 5, 10, 15, 30, 60 minutes after the sweeteners' administration. To determine glycaemia a glucometer with biosensor was used. This type of glucometer has the advantage: the accuracy of analysis, because the biosensor has absolute specificity for glucose and low quantities of blood for analysis. Compared sweeteners are glucose, saccharin, fructose and xylitol, meaning sweetness are different sweet sensations and with different glycemic index. The dose administered is equivalent to 80 g of glucose; the quantity depending on sweetening power. The dose was calculated to create the same sweet sensation. Volunteers were "healthy" women and men aged between 22 and 76 years. **Results and Discussion:** After the interpretation of oral glucose tolerance test (in the first 60 minutes after administration of sweetener) for average values, we found out that the overloading curve for fructose and saccharin almost overlapped, although the glycemic index of fructose is 20 and glycemic index of saccharin is zero. It is estimated that saccharin causes relatively the same sweet sensation as fructose. When comparing the overload curves of fructose vs. xylitol, xylitol, which has the glycemic index 8, causes a greater increase in blood glucose than fructose with glycemic index 20. Probably the enzymes that convert xylitol into glucose are more active than the enzymes which convert fructose into glucose, at least in the first 10-60 minutes. Although the general evolution of glycaemia was expected, individual developments were very different. Among the volunteers participating in the experiment, we found cases of impaired absorption of glucose. In these situations glycaemia varies closely around the mean value, regardless of the tested sweetener. Overall this method is at hand to any GP or nutritionist to test the best sweetener for the patient, because we found large differences in response to oral glucose tolerance test, at the volunteers participating at this study.

DNA REPAIR XRCC1 ARG399GLN GENE POLYMORPHISM IN ACUTE MYELOID LEUKEMIA

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Background: XRCC1 (X-ray repair cross complementing group 1) gene is involved in deoxyribonucleic acid (DNA) repair pathways and in maintenance of genome integrity. XRCC1 Arg399Gln polymorphism has been associated with the risk of several human tumours, including acute lymphoblastic leukemia. In the present study we investigated whether the XRCC1 polymorphism is related to the risk of acute myeloid leukemia. **Methods:** Forty patients with acute myeloid leukemia and 40 normal controls were enrolled. DNA was extracted from peripheral blood samples. XRCC1 genotypes were determined by PCR restriction fragment length polymorphism (PCR-RFLP). Digested products were resolved on 3% agarose gels, stained with ethidium bromide and visualized under UV light. **Results and discussion:** The proportions of individuals homozygous for 399Arg allele, heterozygous and homozygous for the 399Gln allele were 80%, 15% and 5% among the control group, and 40%, 50% and 10% in those with acute myeloid leukemia, respectively. For codon 399, our study revealed a significant difference between the two groups. **Conclusions:** The 399Gln polymorphism of XRCC1 gene is associated with an increased risk of acute myeloid leukemia.

Keywords: DNA repair gene, XRCC1 polymorphism, leukemia

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METHYLENETETRAHYDROFOLATE REDUCTASE POLYMORPHISM 677C>T AND RISK OF MENTAL RETARDATION IN CHILDREN WITH DOWN SYNDROME

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Background: Metylenetetrahydrofolate reductase (MTHFR) regulate folate metabolism, required for normal development of central nervous system. Genetic polymorphisms of metylenetetrahydrofolate reductase (MTHFR) have been suggested as being associated with an increased incidence of neural tube defects, mental retardation, vascular disease and congenital heart defects. Down syndrome, an important condition leading to mental retardation, has been associated with polymorphisms in genes involved in folate metabolism. To investigate the relationship between the polymorphism C677T of the MTHFR gene and mental retardation in children with Down syndrome we utilised a case-control study. **Methods:** DNA samples were isolated from peripheral blood samples and genotyped using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP), with the digestion of restriction endonuclease HinfI. The restricted products were analyzed on 2% agarose gel. **Results:** Subjects were consisted of 30 karyotype analysis identified Down syndrome patients and 30 healthy controls. In patients, the genotypes frequencies of the MTHFR C677T polymorphism were 30%, 60% and 10% for CC, CT and TT genotypes respectively. The frequency of T allele was higher in the patients than in controls. **Conclusions:** The MTHFR C677T polymorphism may be a potential risk factor for mental retardation and Down syndrome, but the MTHFR polymorphisms need to be studied further for confirmation in larger groups.

Keywords: Metylenetetrahydrofolate reductase, gene polymorphism, mental retardation

THE INCIDENCE OF THE CENTRAL NERVOUS SYSTEM CONGENITAL MALFORMATIONS IN THE TÂRGU MUREȘ OBSTETRICS-GYNECOLOGY CLINIC NO.1 BETWEEN 2006-2010

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The purpose of this paper is to emphasize the decreasing incidence of central nervous system congenital malformations during this period of time. This decrease could be noticed during the last three years, due to the extended administration of folic acid in the treatment of pregnant women as well as the early diagnosis of these malformations and therapeutical abortion in some cases. Our research expanded over a five-year interval (2009–2010) on a sample of 11,528 deliveries. During this interval, 17 central nervous system malformations were diagnosed, representing an incidence of 0.15%. The incidence of this type of malformation varied between 0.32% in 2006 (8 cases of 2478 deliveries) and 0.04% in 2008–2010 (one case per year). In 2007, the incidence was of 0.26%. Among these malformations, the most frequent were myelomeningoceles – in 6 cases, and spina bifida – in 6 cases, of which 3 were associated to hydrocephalus. In conclusion, the assessment of the probability of CNS malformations occurrence is essential to the management of pregnancies, even though their incidence has dropped. The prenatal diagnosis of these malformations through ultrasound exploration is available and therefore an increased attention should be given to their detection during fetal morphologic examination.

Keywords: malformations, congenital, central nervous system, myelomeningocele, spina bifida, hydrocephalus.

STUDY ON PERCEPTIONS OF A GROUP OF STUDENTS ON ONCOGENESIS AND ONCOTHERAPY

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Background: Because the World Cancer Report tells us that cancer rates are set to increase at an alarming rate globally, the students of medical universities and not only them must be knowledgeable about prevention and early detection of the disease. **Methods:** In 2011, the authors surveyed 840 students of University of Medicine and Pharmacy of Târgu Mureș, from different faculties, using a written questionnaire (response rate, 71.4 percent). The questionnaire included questions about cancer risk and nonrisk factors as well as cancer diagnostic signs, symptoms and examination procedures. The authors performed univariate and multivariate analyses. **Results:** At least 82.5% of all students replied that tobacco, alcohol, ionizing radiation, certain chemicals, some viruses and bacteria, certain hormones, family history of cancer, poor diet, lack of physical activity, or being overweight and stress were risk factors. In case of Nutrition students, the major nutritional risk factor for cancer in the students lifestyle (when the questionnaire was completed) are food additives (84%), the second risk factor are processed foods or semi-prepared foods (68%). In case of Dental students the major

risk factor is smoking (68%), the second risk factor is stress (63%). In case of General Medical students the major risk factor is the insufficient sleep, fatigue (87%), the second risk factor is sedentary lifestyle (79%). 82.5% percent of the students feel that they haven't sufficient knowledge regarding cancer medication. 100% of the participated students in the study want more information or teaching lessons on cancer. The order of information sources is: courses attended (30%), published studies (27.5%), training (17.5%), seminars (12.5%) and books published (12.5%). **Conclusions:** Although students' level of knowledge increased with academic year, educators need to place grater emphasis on cancer education and training in our university. Cancer practice implications: morbidity and mortality are likely to be reduced if students knowledge about how to prevent and to detect it at an early stage and their participation in the screening programmes would be better.

PTEN IMMUNOEXPRESSION IS DECREASED IN PRECANCEROUS LESIONS OF THE COLON

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Introduction: Tumor suppressor phosphatase and tensin homologue (PTEN) is an important negative regulator for the PIP3/Akt signaling pathway that promotes cell proliferation and inhibits apoptosis. We used immunohistochemistry to investigate the molecular role of PTEN expression in colon adenomas. **Material and methods:** We used 24 colon adenomas and polyps (A/P), and 5 colon carcinomas (CC) developed on adenomas. These were selected from the material of the Pathology Department of the Clinical County Hospital of Târgu Mureş. PTEN protein expression was classified as negative if less than 50% of tumor cells were positive for PTEN immunostaining. **Results:** PTEN expression was decreased or absent in 58% of A/Ps, and 80% of CCs, respectively. Most serrated adenomas showed preserved expression, while hyperplastic polyps were mostly PTEN negative. The majority of A/Ps located in the left colon were PTEN negative, and those from the right colon were PTEN positive. **Conclusions:** PTEN immunoexpression shows a progressive decrease in the precancerous lesions of the colon.

Keywords: PTEN, immunohistochemistry, colon, adenoma, carcinoma

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A RARELY CASE OF EPILEPTIC ENCEPHALOPATHY WITH A GOOD EVOLUTION. CASE REPORT

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Objectives: we follow a good evolution of an devastating epileptic encephalopathy, Lennox Gastaut Syndrome, wich, in most of cases continue having seizures in adult life and nearly all have severely impaired intellectual functioning and behaviour. **Material and method:** We will present a case, of 11.5 years boy, with an sever encephalopathy, Lennox Gastaut, a patient with a genetic disease, Von Recklinghausen type I and cardiac congenital malformation. Clinical manifestation starts at 2.5 years, with polymorphic seizures: tonic seizures, clonic, generalized tonic-clonic 1–2/day, myoclonic jerks of superior limbs and of the head, axo-rhizomelic seizures: 10–20/day, typical and atypical absence seizures; cognitive and behavioural abnormalities. Encephalopathy evolution: progressive aggravating of epilepsy and psychical disorders - for a 2-years; new types of seizures occur constantly; frequent SE; great number of seizures: 30–170 / day; refractory epilepsy with divers AED; psychotic agitation, confusional states, aggressiveness, ADHD. In present, he is free for seizures (for 7 years), is going at school, with an mild mental retardation, ADHD, normal motor development. The EEG: hypsarrhythmia: initial; electric seizures of PM variant + PM 3 Hz/s-, bss; periodic pseudorhythmic discharges(SW); Electric Status in Slow Sleep; in present: in sleep: multiple foci; in awake: electric seizures of short PM variant 2 Hz /s, b.s.s., without clinical correspondent. Recklinghausen disease: at 2,6-y-aged: 32 brownish spots, 18 with over 6 mm diameter; at 3,6-y-aged: over 180 spots, 18 with D over 1 cm; after 4 years it became stabilized. CT and IRM was normal. **Conclusions:** patient with a genetic disorder, Neurofibromatosis type I (the only case in his fammily), with a cardiac malformation, with a severe encephalopathy, Lennox Gastaut syndrome, with onset of seizures at 2,5 years old, initial a resistant form under several AED, but with a good evolution after 2 years, with seizures free (for 7 years). From the begining he had behavior disturbance, with confused states, agitation of psychotic intensity, manifestation of the type 'acting out', aggressiveness at minimum frustration, ADHD. In our case, evolution was good, with a total

control of seizures but with abnormal EEG, he is in school, with mild MR, ADHD and the Recklinghausen is stabilized.

Keywords: epileptic encephalopathy, Von Recklinghausen type I, Lennox Gastaut, ADHD

INFANT MORTALITY IN MUREȘ COUNTY

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Infant mortality is maintained at a high level in this period as against the developed European countries, but its level is lower than that registered in Romania. Out of the analysis of the data recorded in the death files regarding the infants below the age of 1, we can notice certain aspects that the medical–health personnel should focus on; infant mortality represents one of the main demographic aspects in appreciating the health status of a population. The level and the dynamics of infant mortality depend on economical, social, cultural and medical conditions: preterm birth, birth asphyxia (lack of breathing at birth) and infections (pneumonia or other acute respiratory infections and childhood diarrhoea-poor hygiene practices); safe childbirth and effective neonatal care are essential to prevent these deaths.

Keywords: Infant mortality, preterm birth, demography.

INTRACYSTIC ADENOMYOEPITHELIOMA OF THE BREAST: A BENIGN VARIANT OF CENTRAL PAPILLOMA

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Background: Adenomyoepithelioma of the breast is a rare mixed benign tumor composed of a combination of epithelial and myoepithelial elements. It usually forms a solid and solitary, peripheral located nodule, but its presentation as a central intracystic tumor is a very rare clinical event. **Case report:** A 55-year-old woman was referred to the Surgery Department for a palpable mass in the upper central left breast. Total mastectomy and axillary lymph nodes dissection were performed for a 55mm retroareolar mass that was described on ultrasound as solid and suspicious. Macroscopically, a 21 mm solid, sessile, lobulated, tan-white lesion was located within a dilated duct of 42 mm diameter, attached to the wall. The cystic duct had a bloody content. Microscopically, the tumor showed a biphasic differentiation of tubules lined by epithelial cells and prominent peripheral myoepithelial cells with clear cytoplasm. Areas of apocrine metaplasia, with minor degree of nuclear atypia, as well as central hyalinization and fibrosis could be observed together with areas of papillary projections at the periphery of the lesion. Immunohistochemical stain for p63 highlighted the prominent myoepithelial component and a diagnosis of intracystic adenomyoepithelioma was settled. **Conclusion:** Adenomyoepithelioma is a rare benign tumor that is considered by some authors a variant of intraductal papilloma, as foci of papillary proliferation can be seen in the lesion. However, papillary benign (central or sclerosing papilloma), atypical or malignant (in situ papillary carcinoma, encapsulated papillary carcinoma) lesions should be considered in the differential diagnosis in order to avoid unnecessary aggressive treatment, especially when imaging descriptions are very limited and inconclusive. Fine needle aspiration cytology or tru cut biopsy are very helpful in order to diagnose this lesion before extensive unnecessary surgery.

Keywords: adenomyoepithelioma, breast, myoepithelial cells, p63, intracystic tumor

EXPRESSION OF CYTOKERATIN 7 IN COLORECTAL ADENOCARCINOMAS WITH MICROSATELLITE INSTABILITY AND BRAF MUTATIONS

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Introduction: Colorectal carcinomas (CRC) and their metastases usually expressed Cytokeratin 20 (CK20) and are negative for Cytokeratin 7 (CK7). The aim of our study was to analyse both of these markers in CRC in order to identify which factors may determine changing of the CK7/CK20 immunophenotype in these tumors. **Material and methods:** In 52 randomly selected CRC we performed immunohistochemical stains with CK7 and CK20 and analyzed the microsatellite status and the BRAF mutations with Real time PCR, melting point analysis. **Results:** CK7 was negative in all microsatellite stable tumors (MSS) but all carcinomas with microsatellite instability (MSI) and BRAF mutations were diffusely positive at this marker. CK20 was diffusely expressed in 79.06% of MSS tumors. Regarding the MSI cases, decreased CK20 expression was observed in cases without BRAF mutations and no expression was revealed in the BRAF mutated adenocarcinomas. **Conclusions:** It seems that in the MSI cases located on the proximal colon, which

also present BRAF mutations, CK20/CK7 may present changing immunophenotype, which may increase the difficulty in differential diagnosis of metastatic tumors. This is first reported study about the relationship between CK20/CK7 immunophenotype, BRAF mutations and microsatellite status in CRC.

Keywords: colorectal carcinomas, Cytokeratin 7, Cytokeratin 20, BRAF mutation, microsatellite instability.

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HISTOLOGY OF BONE MARROW AND JAK2 MUTATION IN CHRONIC MYELOPROLIFERATIVE DISORDERS (CMPD)

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Introduction: The Philadelphia chromosome-negative chronic myeloproliferative disorders (CMPD), polycythemia vera (PV), essential thrombocythemia (ET) and chronic idiopathic myelofibrosis (IMF), have overlapping clinical features but exhibit different natural histories and different therapeutic requirements. The bone marrow criteria of the World Health Organization (WHO) are defined by pathologists to explicitly define the pathological criteria for the diagnostic differentiation of ET, PV, and prefibrotic and fibrotic CIMF. **Material and method:** Our study was composed from 17 bone marrow trephine biopsy diagnosed with CMPD. We used special and immunohistochemical stainings for positive and differential diagnosis. In order to complement initial diagnosis, we studied the tyrosin kinase mutation (JAK2 V617) with PCR method using peripheral blood samples from patients diagnosed with PV. **Results:** From the whole 17 patients 10 were females and 7 were males. The average age was $65,5 \pm 9,69$, and the variability of the CMPD entities was performed in 58,83% CIMF, 35,29% PV and 5,88% ET. From the clinical point of view, we observed 70,58% coincidence between the clinical and histological diagnosis. JAK2 expression we founded in 3 cases from 5 determination. **Conclusions:** The use of biological markers including JAK2 V617 PCR test and peripheral blood parameters combined with bone marrow histopathology has a high sensitivity and specificity (almost 100%) to diagnose the early and overt stages of ET, PV and CIMF in JAK2 V617F positive and negative MPDs.

HIGH GRADE SEROUS ADENOCARCINOMA OF THE ENDOMETRIUM WITH EXTRAUTERINE INVOLVEMENT: WHERE IS THE ORIGIN OF THE TUMOR?

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Serous adenocarcinoma with endometrial origin is a rare lesion that usually develops in elderly patients from a preexisting endometrial atrophic polyp and atrophic endometrium. When associated in the same patient with similar lesions in the fallopian tubes, ovaries, peritoneum and omentum, in most of the cases the primary origin of the lesion is debatable. The presence of serous tubal intraepithelial carcinoma (STIC) in the fimbria suggests that this is the primary origin. However, this is a high grade tumor with poor prognosis and the correct diagnosis allows a different surgical and oncologic treatment. We present the case of a 83 years old female patient admitted to the Department of Surgery for abdominal pain and bowel obstruction. Laparotomy revealed multiple nodules involving the peritoneum, omentum, uterine serosa, fallopian tubes and ovaries. The uterus was enlarged. Subtotal hysterectomy with bilateral salpingo-oophorectomy, omentectomy together with multiple biopsies from peritoneal nodules were performed. The uterine cavity presented two endometrial polyps; one of them being involved by areas of high grade serous adenocarcinoma on the surface that from the architectural point of view disclosed micropapillary, slit-like spaces or glandular structures. Pleomorphic nuclei and a high mitotic rate were observed. No areas of invasion were seen in the endometrium and myometrium. Microscopic foci of the same type and associated with psammoma bodies involved the uterine serosa, lumina and wall of both fallopian tubes, cortex of the ovaries, peritoneum and omentum. Areas of STIC were found in the fimbria of the fallopian tubes. Areas of endosalpingiosis were observed in the uterine serosa and inclusion cysts in the ovarian cortex. Immunohistochemically, the tumour cells show p53 overexpression (up to 90% of cells) and high Ki-67 index and are positive for p16. ER and PR were focally positive. The primary origin of this lesion is still unclear. The presence of endosalpingiosis and inclusion cysts in the peritoneum and ovaries together with the association with STIC in the fimbria and the superficial pattern of the endometrial lesion imply an origin in the fallopian tube and retrograde migration of these cells in the endometrium. However, no clinical evidences for this theory versus synchronous lesions are available. Serous adenocarcinoma of high grade is an aggressive malignant tumor that needs specific surgical and oncologic treatment and the prognosis is poor.

CARCINOSARCOMA OF THE BREAST WITH MASSIVE OSSEOUS MALIGNANT COMPONENT: A BASAL-LIKE ENTITY WITH MYOEPITHELIAL DIFFERENTIATION

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We present the case of a 77 year old patient with a primary breast carcinosarcoma composed mostly of an osteogenic sarcoma of fibroblastic type in which only immunohistochemical analysis disclosed the presence of a minor malignant epithelial component. The malignant mesenchymal component derives from dedifferentiation of myoepithelial cells since myoepithelial markers are positive. Also, like the majority of the other metaplastic carcinomas in the breast, carcinosarcoma is a basal type of tumor that will not respond to endocrine drugs or Her2/neu therapy.

SOLITARY FIBROUS TUMOUR MIMICKING INGUINAL LYMPHADENOPATHY

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Solitary fibrous tumour represents a tumour of mesenchymal origin, formerly categorized as a mesothelial tumour (since its frequency in the pleural cavity). It is now known that the neoplastic cells that make up this tumour show features of fibroblastic, myofibroblastic and possibly pericytic differentiation. It is an ubiquitous tumour that can arise anywhere in the body, however in some locations it can be found more frequently: subcutaneous tissue, deep soft tissues of extremities, head and neck region, thoracic wall, mediastinum, pericardium, retroperitoneum and abdominal cavity. We present the case of a 53-year-old female patient that presented with non-tender lymphadenopathies in the right inguinal region. 3 well-circumscribed nodular masses were surgically removed, 2 of them having the dimensions 25 × 10 × 8 mm and 25 × 15 × 10 mm, on cut surface having relatively pink-grey homogenous appearance. The third surgical specimen, also well circumscribed, had the dimension of 45 × 30 × 15 mm, on cut surface showing multinodular, whiteish and firm areas alternating with myxoid changes. Histopathology revealed that the former specimens represented lymph node with sinus histiocytosis. The latter specimen showed a neoplastic proliferation with mesenchymal structure with alternating hypercellular and hypocellular areas. Hypercellular areas consisted of round/oval to spindle shaped cells with indistinct cellular borders, dispersed chromatin with vesicular nuclei. The cells are densely packed around vascular structures having round or irregularly shaped walls, that are occasionally with hyalinization of the wall, resembling haemangiopericytoma. Hypocellular area show myxoid changes. Mitotic figures are rare. Immunophenotype: neoplastic cells are positive for CD34, CD99 and are negative for SMA, CD68 and Factor VIII. Tumour cells have a low, less than 1%, proliferating index (as visualized by Ki67 marker). Differential diagnosis includes: solitary fibrous tumour, haemangiopericytoma, giant cell angiofibroma, lipomatous haemangiopericytoma, lymph node metastasis. After carefully analyzing morphological and available clinical data we concluded that our case represents a solitary fibrous tumour.

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PRIMITIVE NEUROECTODERMAL TUMOR COMPONENT (PNET) IN EMBRYONAL (BOTRYOIDES) RHABDOMYOSARCOMA OF THE CERVIX

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The association of a uterine sarcoma botryoides of the adolescence (SBA) with primitive neuroectodermal tumor (PNET) is reported in a 12 year old patient that presented with abnormal vaginal bleeding that occurred after passing per vaginam a polypoid mass. The SBA exhibited foci of cartilage and a central area of PNET with a trabecular, adamantiform histology and prominent angiogenesis. PNET was positive for vimentin, synaptophysin, neuron specific enolase, CD99 and SOX2 and negative for both the FLI-1 fusion protein and the rearrangement of ESWR1 gene. The neoplasm exhibited a non-aggressive behaviour similar to SBA, being alive and well 3 years after its presentation. This is possibly related to its polypoid nature and the absence of invasive features at its uterine insertion level. A conservative approach without further resection and chemotherapy was indicated taking into account the patient's age.

SARCOMATOID SQUAMOUS CELL CARCINOMA OF THE UTERINE CERVIX: IMMUNOHISTOCHEMISTRY DEMONSTRATES AN HPV-RELATED TUMOR WITH EPITHELIAL ORIGIN

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Sarcomatoid squamous cell carcinoma (SSCS) is a well-documented entity elsewhere but occurs rarely in the female genital tract with only 20 reported cases in the uterine cervix. A 72 year old patient was diagnosed with a polypoid 4cm diameter cervical tumor. Microscopically, the tumor was composed of a poorly differentiated classic keratinizing squamous carcinoma which was overgrown by a well-delineated, secondary, extensive and heterogeneous sarcomatoid component. Abrupt transition between the two components was observed with no zones of gradual transition. The positivity of the sarcoma-like component for epithelial markers (CAM5.2, AE1/AE3, CK5/6) and p16 favors a common epithelial squamous origin of both components of the lesion and an association with HPV- infection. This diagnostic immunophenotype excluded other malignant cervical tumors with a true mesenchymal component that may have different treatment and prognosis.

MYELOID SARCOMA INITIALLY PRESENTING AS SKIN LESION – CASE PRESENTATION

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Myeloid sarcoma represents a tumor mass consisting of myeloid blasts with or without maturation that occurs at an anatomical site other than the bone marrow. Since myeloid sarcoma represents the tissue mass form of different subtypes of acute myeloid leukemia (AML), the diagnosis is equivalent to a diagnosis of AML. We present the case of a 78-year-old male patient with unremarkable past medical history that presented with multiple skin lesions consisting of reddish, slightly elevated nodules. An initial diagnosis of non-Hodgkin B-cell lymphoma was ensued. Specific treatment was applied (11 cycles of PCT, according to the CHOP scheme along with 8 applications of Mabthera) that caused the skin lesions to reside and disappear. After a brief period a solitary skin nodule with central ulceration developed on the left anterior chest wall. The patient otherwise was asymptomatic without evidence of any hematological disorder or disease involving the skin. Surgically a 55×28×20 mm tan mass was removed, on cut surface with a 16 mm deep central ulceration. The histopathological findings show an interstitial infiltrate of large polygonal cells with moderate amount of cytoplasm and large, irregular to folded nuclei with occasional large nucleoli. The neoplastic cells show marked positivity for LCA, MPO and CD68, focal positivity for CD56. They are negative for CD3, CD4, CD8, CD2, CD20, kappa-lambda light chains, CD38, CD30 and CDa1. Neoplastic cells are intensely positive for vimentin and have a proliferation rate (Ki67) between 60-70%. The histological and immunohistochemical findings support the diagnosis of myeloid sarcoma. The patient continued treatment according to the 2+5 scheme and presented for periodical controls for treatment and evaluation. The last visit (6 months after the diagnosis of myeloid sarcoma) revealed the presence of multiple pink-bluish, non-itching non-tender skin nodules, distributed primarily on the upper and lower extremities. As laboratory and clinical data indicate, the patient developed severe secondary granulocytopenia, secondary anemia and secondary thrombocytopenia. After specific treatment was administered, along with antibiotics, the patient was released. Just prior submitting this presentation we were announced that the patient deceased at home (3 months after last medical visit).

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EFFICACY OF BIOLOGIC AGENTS IN THE IMPROVEMENT OF CLINICAL AND BIOLOGICAL STATUS OF PATIENTS WITH RHEUMATOID ARTHRITIS

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Objectives: To evaluate the clinical efficacy of biologic agents in treatment of rheumatoid arthritis. **Material and methods:** 97 patients with rheumatoid arthritis treated with biological agents in combination with or without classical DMARDs (biological disease modifying antirheumatic drugs) were included. Number of swollen joints (NSJ), number of tender joints (NTJ), patients global assessment of disease activity on Visual Analogue Scale (VAS), Westergren's Erythrocyte Sedimentation Rate (ESR), C-reactive Protein (CRP), rheumatoid factor (RF), anti-CCP antibody (ACPA), 28-joints Disease Activity Score (DAS28) were assessed at baseline and months 3, 6, 9 and 12. Kruskal-Wallis test were used for statistical analysis of data (Graph Pad Prism 5 program). **Results:** NTJ, NSJ and VAS decreased statistically significant ($p < 0.001$) from the 3rd month of treatment. ESR's decline from the baseline to normal values

was observed at each visit, CRP concentration decreased from a baseline mean 24.46 to 9.24mg/l after one year. 26.37% of patients achieved clinical remission (DAS28 < 2.6) at 12 months and 18.68% low disease activity (LDA). RF's level declined statistically significant ($p=0.004$) after 12 months of treatment, not the same was observed related to ACPA ($p>0.05$). **Conclusions:** Biological DMARDs are efficient therapeutic options in active rheumatoid arthritis, improving the patients' clinical and biological status.

THE EVALUATION OF HYPERTENSION RELATED TO SEDENTARINESS, OVERWEIGHT AND SMOKING IN AN URBAN COMMUNITY WITHIN A SANOGEN AREA DESIGNED BY "100 METERS FOR HEALTH" PROJECT

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The purpose of this evaluation was to assess the prevalence of several cardiovascular risk factors in an urban community, during the inauguration of a sanogen area designed by the "100 meters for health" project. This original project is designed especially for community use and it provides for creation of accessible sanogen area in the middle of the urban agglomeration. These areas are developed for physical activities and for providing health related informations. Within these areas everyone can perform an adequate exercise program and also everyone can get all the informations related to health, risk factors and their prevention. Within these health areas several risk factors evaluations can be performed periodically in order to adjust the community preventive strategy. This 4 hours evaluation was performed on 173 persons living nearby the sanogen area from Dambu Pietros neighborhood in Targu Mures. 113 persons (65.31%) were women average age 52.32 and 60 (34.48%) were men average age 50.53. Sphygmomanometers were used to evaluate blood pressure. Smoking habit and exercising were evaluated by open-ended questionnaires especially designed for this purpose. Overweight was evaluated by calculating the BMI (weight (Kg)/square height (m²)). The association between hypertension and sedentariness, smoking and overweight was tested analysing data from the contingency tables, by using chi square standard test with 95% CI (confidence interval) and calculating for each association the relative risk (RR). Our assessment identified that 57 patients out of 173 (32.94%) were hypertensive (BP equal or higher than 140/90 mm Hg). We found that 46 out of 57 hypertensive patients (80.7%) were sedentary, 25 out of 57 (43.85%) were smokers and 35 out of 57 (61.4%) were overweight and obese (BMI equal or higher than 27 Kg/m²). Thus, our evaluation established that hypertension was statistically significant associated with sedentariness ($p<0.0001$, relative risk 4.97, confidence interval 2.76 – 8.94), with smoking ($p<0.0001$, relative risk 2.87, confidence interval 1.97 – 4.18) and also with overweight ($p=0.0006$, relative risk 2.17, confidence interval 1.40 – 3.38). **The results** of our evaluation showed also the high prevalence of hypertension. Furthermore, we found a statistically significant association between hypertension and other risk factor as sedentariness, smoking and overweight, even in an unselected small in number population as that participated in the assessment. This constitutes the reason for these sanogen areas designed for the community by the "100 meters for health" project to exist and to function. Applying the population communication techniques would lead to increasing population accessibility in several evaluations of risk factors and/or diseases prevalence. It would also increase cardiovascular risk awareness in the population and this would result in increasing compliance and also obtaining a better partnership doctor-patient. A complete comprehensive and adapted to the population preventive care strategy can be developed. Development of such a prevention strategy must take into account both the environment related possibilities and the direct comprehensive type of doctor-patient relationship. The prevention strategy success is closely related to the active implication of the physicians, especially family doctors, in public health issues and it is also very important involving the local authorities in this kind of community health projects.

Keywords: health project, risk, hypertension, sedentariness, smoking, overweight, prevention, community.

THE BEHAVIOR OF THE THREE MAJOR ADIPOKINES – LEPTIN, ADIPONECTIN AND RESISTIN IN RHEUMATOID ARTHRITIS

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Background: In the last decade, the adipose tissue hormones/adipokines (leptin, adiponectin and resistin), proved to be active players in the inflammatory and autoimmune conditions. However, their role in acute versus chronic inflammatory processes is still in debate; being labeled as multifaceted factors in driving the inflammatory and autoimmune processes. Rheumatoid arthritis is the spreadest inflammatory and autoimmune rheumatoid condition with unknown pathogenesis patterns and an outcome marked by a decrease quality of life and co-morbidities. **Aim:** The main objective of the study was to reveal the behavior of leptin, adiponectin and resistin in active rheumatoid arthritis. **Material and method:** Forty patients diagnosed with rheumatoid arthritis according with the new ACR/EULAR 2010 criteria with medium-high activity (DAS > 3.2) and no cardiovascular or metabolic conditions recorded were included in the study. They were divided into three groups according with their body mass index (BMI). The classical inflammatory

biomarkers – erythrocyte sedimentation rate (ESR), C-reactive protein (CRP); the synovial activity measured by a quantitative Color Doppler ultrasound score – Color Fraction (CF); anthropometric measurements such as body mass index (BMI), the waist – hip ratio (W/H) and the “novel” inflammatory biomarkers – the adipokines were assessed. The Graph Pad Prism 5, the Statistical Package for the Social Sciences (SPSS) statistical software and the statistical platform disposed by the Department of Gynecology and Obstetrics from the University of Medicine Hong Kong were used to assess the data. **Results:** The mean age of the patients included in the study was 56+/- 11.95 and the onset of the RA was of 9.661+/- 8.036. The levels of leptin were increased in all the groups studied with a maximum noted at the obese group (38.36 +/- 24.30 ng/ml) and the overweight one (23.44+/-16.32). The adiponectin was normal with the minimum value registered in the obese group (9927+/-7696 ng/ml) and the resistin was quantified and no abnormal values were founded (8.839+/-3.547). The synovial activity expressed by the CF was correlated overall with the levels of adiponectin ($p=0.01748213$) and the same correlation was observed in the overweight group ($p=0.02005058$). The adiponectin was correlated overall with the classical inflammatory biomarkers (ESR $p<0.0001$, CRP $p=0.03615562$). We found a positive correlation between the levels of leptin and the BMI ($p=0.006789493$). We couldn't find a significant statistical difference concerning the levels of leptin, adiponectin and resistin between the patients treated with DMARDs versus biologics. **Conclusions:** Each of the adipose tissue's cytokines studied proved to have a different behavior pattern, thus a pro-inflammatory or anti-inflammatory label couldn't be applied. The role of each adipose tissue's hormones is to be evaluated in the inflammatory context. More studies are to be performed in order to outline the impact of biologic therapies on the level of adipose tissue cytokines.

IMPORTANCE OF CONTRAST-ENHANCED ULTRASONOGRAPHY IN THE CHARACTERIZATION OF RENAL MASSES

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Aim: Contrast-enhanced Ultrasonography (CEUS) has become recently a major noninvasive examination for exact characterization of renal masses, first utility of it being the liver focal lesions. The proof of anarchic vascularisation and the rapid wash-out of contrast agent are the main observations in malignant tumors. In our study, we included 5 patients with renal masses, in which use of CEUS was defintory for the diagnosis and future treatment of these patients. **Method:** Five patients from Nephrology and Urology Department of UMF Tg Mures presented with complex renal masses as follows: a recurrence of renal cell carcinoma (RCC) treated with biologic therapy, a complex cystic lesion on a single kidney after nephrectomy for RCC, a complex cystic lesion suspected to be a hydatid cyst and two suspicions of RRC not being completely described by CT scan. They were examined with a SONOACE MEDISON Ultrasound device, with contrast software and 2,4ml of contrast agent SonoVue was injected iv. The arterial phase and the late phase of the contrast agent imaging were analyzed. **Results:** First patient was followed for 6 months with CEUS at the beginning and end of time; the recurrence of the RCC decreased in size after treatment, the second patient had a simple cortical cyst, with no enhancement within the cyst, the suspected hydatid cyst had a intense intracystic vascularisation like an RRC and was proposed for surgery, and the two suspicions of RCC were confirmed by CEUS and surgery was indicated. **Discussions:** Indications for CEUS in renal masses, as established by EFSUMB in 2008 are: complex cystic masses, suspicion of RRC, vascular lesions of the kidney, trauma and transplant kidney. Also, it is indicated in kidney failure patients, in whom the nephrotoxic contrast agents are contraindicated. In our patients we could visualize the intralesional vascularisation. **Conclusions:** CEUS is a relatively new method for the characterization of kidney lesions. It is a safe and reliable method for the future treatment of these patients. Its applicability will be further confirmed in renal transplant patient and in end stage renal diseases.

TREATMENT OF ACUTE MYELOID LEUKEMIA IN PATIENTS OLDER THAN 60 YEARS

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Introduction: Acute myeloid leukemia is a disease predominantly affecting patients up to 60 years of age. Treatment options for most of this patients are more restricted and treatment outcome is less favorable. The poor prognosis for elderly patients with acute myeloid leukemia (AML) raises questions regarding the benefit of treating them with intensive chemotherapy. **Aims:** The aim of this report is to establish an adequate chemotherapy regimens in elderly patients diagnosed with AML. **Materials and methods:** We including in this report all patients older than 60 years diagnosed with AML (de novo or secondary LAM) in our clinic between January 2007 and October 2011 were treated according to their performance status and associated diseases. We followed the distribution according to the FAB classification, phenotype, major associated co morbidities, leukocyte and platelet count, hemoglobin level, serum creatinine, ASAT, ALAT. Induction chemotherapy consist in administration of combination chemotherapy (farmarubicine and cytarabine),

monotherapy (low dose cytarabine) and supportive care. **Results:** We observed that intensive combination chemotherapy can be given to patients with AML under the age of 70 with good general status and no severe associated diseases; the treatment with low dose cytarabine in patients older than 70 with co morbidities seem to be much better tolerated but no prolonged the overall survival. **Conclusions:** Outcome of older patients with AML remains unsatisfactory with low remission rate and poor overall survival and the treatment must be individualized according to their characteristic. Patients with AML aged 70 years or less with good PS and without severe associated diseases should be intensively treated due to the high probability of achieving CR and an acceptable median-term survival.

HEMATOPOIETIC STEM CELL MOBILISATION AND RESULTS OF AUTOLOGOUS STEM CELL TRANSPLANTATION AT PATIENTS WITH ACUTE MYELOID LEUKEMIA

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Introduction: The autologous hematopoietic stem cell transplantation (SCT) is an important treatment modality for patients with acute myeloid leukemia with low and intermediate risk disease. Autologous SCT is associated with better outcome if it is performed with good indication and after the 2nd or 3rd courses of chemotherapy. It has several advantages over allogeneic transplantation because it does not need a matched donor, there is no graft versus host disease, less complication and faster immune reconstruction than in allogeneic transplantation. The disadvantage is the lack of the graft versus leukemia effect. **Aims:** The aim of this paper is to show the importance of SCT in patients with acute myeloid leukemia with low and intermediate risk disease. **Materials and methods:** In the Bone Marrow Transplantation Unit Tg-Mures 13 patients with acute myeloid leukemia received an autologous SCT. Mobilization of the stem cells was performed using chemotherapy and granulocytic colony stimulating factor. In 5 patients of them we had double mobilization of stem cells the second mobilization only with growth factor. The majority of patients have already been heavily pretreated with cytostatic drugs. The conditioning regimen for SCT consists with monotherapy with busulfan (Bu) 16 mg/kg or BuCy: busulfan in combination with Cyclophosphamide (CY) 200 mg/kg. **Results:** The median patient age was 36 years (range 26-50), 9(69%) were males and 4 (31) were females and the median time interval from diagnosis to autologous SCT was 9 months (range 3-25). All the patients were transplanted successfully, all of them achieved a sustained neutrophil count (>0.5 G/L), median time 12 days (11-14) and platelet count (> 20 G/L) median time 14 days (10-15) after transplantation. In the period of aplasia each case necessitated supportive care with platelet and blood transfusion and complex high spectrum antibiotic, antimicrobial and antiviral treatment. **Conclusion:** We conclude that the autologous stem cell transplantation is an effective treatment in acute myeloid leukemia with possibility of long survivorship, particularly in patients with standard risk disease.

THE ROLE OF IMMUNOPHENOTYPING IN BLASTIC PHASE OF CHRONIC MYELOID LEUKEMIA

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Introduction: Chronic myeloid leukemia (CML) is considered to be a triphasic disorder with a long chronic phase progressing to an accelerated phase and terminating in acute blast crisis. The duration of the chronic phase appears to depend on part on the aggressiveness of the disease in a given patient. "Accelerated phase" refers to patients under therapy who develop evidence of disease progression but who don't meet the criteria for a blast crisis. The most reliable evidence of an accelerated phase is the presence of additional cytogenetic abnormalities. Since CML is a disorder of pluripotent stem cells, the blast crisis can be of any lineage differentiation. Blastic phase of CML is defined by $\geq 20\%$ blasts of peripheral blood white blood cells or of nucleated bone marrow cells. The flow cytometry (FCM) immunophenotyping of blasts are very useful to identify their antigenic profile. **Aims. The aim** of this report is to show the importance of identification of lineage differentiation in blastic phase of CML and the impact of this in therapeutic strategy of the patients. **Materials and methods:** We performed FCM immunophenotyping of bone marrow samples of 23 patients with CML in blastic phase. Sample preparation and flow cytometric data acquisition were performed in day of collection. Three or four-color immunofluorescence staining were used. The panel used was similar for acute leukemia panel. Data acquisition was performed with FacsCalibur flow cytometer and data analysis with Paint-a-gate and Cellquest software. **Results:** The immunophenotyping identified the following type of blasts: myeloid in 11 cases, myelomonocytoid in 5 cases, monocytoid in 2 cases and erythroid in 1 case but we also identified lymphoblastic transformation of CML (T-ALL) in 1 case and multilineage transformation (B-cell lymphoblastic + myeloblastic) in 3 cases. 6 patients treated with tyrosine-kinase inhibitor (imatinib) developed blastic transformation of CML. The treatment approach was predicated on the phenotype of the blast cells and biological status of the patients. In patients with myeloid phenotype the treatment approach was similar to that used for acute myelogenous leukemia and in patients with lymphoid phenotypes

the treatment was similar to lymphoblastic leukemia treatment. **Conclusions:** In blastic phase of CML the flowcytometric analysis is useful for identification of lineage differentiation of the blasts. This information is impacting the management of the patient with CML in terms of therapeutic decisions, individualized treatment and prognostic stratifications.

Keywords: Chronic myeloid leukemia (CML), blastic phase of CML, immunophenotyping

THE ROLE OF ERYTHROPOETIN IN TREATMENT OF ANEMIA IN PATIENTS WITH MALIGNANT LYMPHOMA

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Introduction: Anemia is a common complication of malignant lymphomas which could be direct consequence of the disease or secondary of myelosuppressive chemotherapy. This may be due to the reduction of erythropoiesis manifested by reduction in erythrocyte half-life, poor iron reutilization by the bone marrow and inadequate response to erythropoietin with reduced endogenous erythropoietin levels. **Aims:** The aim of this study is to show the beneficial therapeutic effects of erythropoietin in patients with malignant lymphomas who present anemia. **Material and methods:** A retrospective study was performed on patients with malignant lymphomas, diagnosed and treated in Clinical Hematology and BMT Unit Târgu Mureş between January 2007–October 2011. In these cases we followed hematological and biochemical parameters as: haemoglobin (g/dl), hematocrit (%), mean cell haemoglobin (pg), mean cell volume(fl), serum ferritin, serum transferrin, serum iron. **Results:** The obtained results show that erythropoietin treatment increases haemoglobin levels and reduces transfusions. We found a correlation between response of erythropoietin treatment and the functional iron deficiency. The results suggest that the functional iron deficiency is an important limiting factor in response of erythropoietin treatment. **Conclusion:** Erythropoietin treatment is effective in improving anaemia and appears to have a positive effect on quality of life.

Keywords: erythropoietin, anemia, malignant lymphoma, haemoglobin, ferritin.

CLINICAL FEATURES IN WALDENSTRÖM MACROGLOBULINEMIA

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Introduction: Waldenström macroglobulinemia (WM) is a B-cell disorder resulting from the accumulation, predominantly in the bone marrow, of monoclonal IgM secreting lymphoplasmacytic cells. It corresponds to lymphoplasmacytic lymphoma (LPL) from WHO classification, most cases being with IgM secretion. Less than 5% of cases are IgG, IgA or nonsecreting LPL. Patients can have no or few symptoms. Lymph node enlargement and splenomegaly are present only in 15% even in symptomatic patients. The disease is underdiagnosed, because in the absence of clinical suspicion, the appropriate diagnostic tests (seric IgM and bone marrow examination) are not done. The clinical features, elevated ESR and cytopenia are considered due to old age or other more frequent causes than WM. **Material and method:** A retrospective study was performed, analyzing the patients admitted in the Hematology Department of the Internal Medicine Clinic 1 from the last 11 years, from October 2000 to October 2011. After interrogating the electronic archive for “Waldenström macroglobulinemia” a number of 7 patients were identified. **Results:** In one patient WM was excluded as a possible cause for bleeding diathesis and was excluded from the study. In the remaining 6 patients WM was confirmed in 2 patients and the follow up period was 46 and 42 months respectively. In one patient a follicular lymphoma was diagnosed, in another one a splenic lymphoma, one with T cell lymphoma and the fourth one had liver cirrhosis associated with elevated ESR, hypergammaglobulinemia, pancytopenia and hypersplenism (the last three patients were lost from follow up). The WM patients were 72 and 82 years old. ESR was above 100 mm at one hour and both had anemia (bicytopenia). Serum IgM was highly elevated with low IgG and IgA. The bone marrow morphologic analysis showed typical lymphoplasmacytic cell infiltrate in one case and only lymphocytes in the other case, but with triple negativity for CD5, CD10 and CD23 by immunophenotyping. The clinical onset was insidious in all cases, except for the older patient with WM, in whom the diagnosis was made during an hospitalisation for cardiac failure. In patients over 70 years, non eligible for auto stem cell transplantation, consists in combination immunochemotherapy: rituximab with flurabine or cyclophosphamide, the second one also associated with prednisone or dexamethasone. The two patients were treated with chlorambucil with blood transfusions as needed, without any improvement of leucopenia or thrombocytopenia. **Conclusions:** WM is probably underdiagnosed and certainly undertreated. With the above mentioned treatment options the overall response rate is 70 to 80%, with 10% complete remissions. Progression free survival is between 3 and 4 years. With bortezomib, dexamethasone and rituximab combination the result are even better, with 96% overall response rate and 22% complete remissions.

CHANGE IN THE PATERNS OF SEVERE ESOPHAGITIS –SINGLE CENTER EXPERIENCE

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Aim: The incidence of adenocarcinoma of the esophagus has dramatically increased during the last 2 decades. A major risk factor for adenocarcinoma of the esophagus is gastro-oesophageal reflux disease. The risk of esophageal adenocarcinoma increases with both the frequency and duration of reflux symptoms. The aim of this study was to determine the correlation between hiatal hernia and *Helicobacter pylori* infection with severe esophagitis. **Material and method:** We studied retrospectively a series of patients who were investigated by upper endoscopy in the Endoscopy Unit of Targu Mures County Clinical Emergency Hospital between 1 January 2006 and 31 December 2006 and we compare with patients who were investigated in 2010. Endoscopic signs of esophagitis were recorded and graded according to the Los Angeles classification. Barrett's esophagus was endoscopically suspected when a reddish epithelium was seen above the gastroesophageal junction. Four esophageal biopsies were obtained from this area. Barrett's esophagus was defined as the presence of specialized columnar epithelium with goblet cells in the esophagus. In addition, four biopsy specimens were obtained using a biopsy forceps from the antrum and corpus to detect *Helicobacter Pylori* using the histological methods. The gastritis parameters - *H. pylori* presence, activity, and chronicity, were graded in biopsy specimens of antrum and corpus. **Results:** In 2006 in 19 patients a diagnosis of esophagitis C or D was established and 10 patients with Barrett's esophagus compare with 28 patients with esophagitis in 2010 and 24 with Barrett's esophagus with a increase of more severe forms in 2010. There was a strong predominance of males, similar for the two periods. Hiatal hernia was found in 19 patients (67.85%) in 2010 and in 7 (36.84%) patients in 2006 ($p < 0.05$) in esophagitis group. *Helicobacter pylori* was found in similar proportion (21.05% in 2006 compare with 25% in 2010) between these two years in the esophagitis group. **Conclusions:** In the last years we found an increase of more severe forms of esofagitis and its association with hiatal hernia. Although the incidence of *Helicobacter pylori* infection in general population is lower in the last years, in this particular type of patients we didn't found of decrease between the two periods.

Keywords: *Helicobacter pylori*, esophagitis

EFFECT OF RAMIPRIL ON AMBULATORY BLOOD PRESSURE IN ESSENTIAL HYPERTENSION- CIRCADIAN TIME OF TREATEMENT

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Aim of the study: Our goal was to assess the circadian profile of patients with essential hypertension grad 2 according to the timing of an ACE inhibitor, morning vs bedtime administration, using the principles of chronotherapy- administratio of the drugs according to the biorhythm of the patient, so that the efficiency is maximum, and the side effects minimum. **Material and methods:** 20 randomized patients were included in our study, 4 men and 16 women, years of age 59.70 ± 12.50 hospitalized in in the Clinic of Internal Medicine IV Tg-Mures in July-October 2011. The circadian profile of the patients was assessed with ABPM monitoring at the inclusion and after 4 weeks of treatment, using a validated device (Medtronic 05). We measured SBP, DBP, HR every 20 minutes at day from 6 to 22 hours and every 30 minutes at night 22-6 hours. At the inclusion, the patients were treated with the ACE inhibitor Ramipril, given at morning. After ABPM monitoring, the drug was given at bedtime for 4 weeks, then we repeated the assesement. Data were entered in an Excel table, and statistical analysis were performed with the Graph Pad Prism version 5.01 program. **Results:** After 4 weeks of bedtime administration of an ACE inhibitor we observed a statistically significant decrease in clinical BP ($p=0.006$) and heart rate ($p=0.003$) and number of dipper patients increased from 10 to 15. **Conclusions:** Bedtime administration of ACE inhibitors has a favorable blood pressure lowering effect. The principle of chronotherapy could be wery helpful in the treatment of essential hypertension, but requires further studys.

PREVALENCE OF HYPERTENSION AND ASSOCIATED CARDIOVASCULAR RISC PROFILES IN YOUNG ADULTS

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Hypertension is a growing health problem worldwide. While most studies describe hypertension in older adults and the elderly there is a paucity of data on hypertension in young adults, as they are deemed to be at lower risk of developing the disease. With a growing problem of hypertension worldwide, there is a concern that hypertension in young adults may also be on the rise and that cases are not detected because of inadequate screening at this age group. We aimed to determine the prevalence of hypertension and the

cardiovascular risk factors associated with it in young adults. We studied 73 medical students. Subjects completed a detailed questionnaire and underwent physical examination, and blood samples were drawn after a 12-hour fast. Hypertension was defined based on ESH 2007/2009 guidelines. We calculated the age- and sex-specific prevalence of hypertension and other cardiovascular risk factors associated with this condition. We also evaluate the ankle-brachial pressure index, carotid intima media thickness and brachial artery diameters, during reactive hyperemia and after sublingual nitroglycerin administration. Hypertension was observed among 61.8% of men and 38.1% of women. The hypertensive group had higher levels of blood glucose, total cholesterol and triglycerides, higher body mass index than did the normotensive group. Multivariate logistic regression analysis showed that body mass index was the strongest predictor of hypertension among both males and females. In the ankle-brachial pressure, the intima media thickness values and flow mediated dilation values there were no statistically significant differences in the normotensive and hypertensive groups. We would like to point out that all persons included in this group considered themselves healthy. Therefore the adequate screen of this age group regarding hypertension and cardiovascular risk profile is strongly recommended. Our findings support the recommendation of lifestyle modification for hypertensive young adults. Further prospective studies are required to determine the role of lifestyle modification and pharmacotherapy in this populational group.

ACCELERATED ATHEROSCLEROSIS AT PATIENTS WITH RHEUMATOID ARTHRITIS - WHAT IS NEW?

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Introduction: The cardiovascular morbidity and mortality in rheumatoid arthritis (RA), is enhance with 50% in comparison with general population, cardiovascular disease is considering the principal risk. The risk of this events constituted a real important clinical issue, which emphasizez a same time an importance of immunomodulatory events in atherogenesis. **Objectives:** This high rates of mortality is not fully explained by the presence of traditional cardiovascular risk factors, that why the aim of my study was identification of other cardiovascular atherogenic risk factors. **Material and methods:** In order to mark/highlight the specific biological features in evaluating the atherogenic risks in patients diagnosed with RA a crossover, observational study was performed. The classical Framingham factors were assessed (age, sex, smoke, hypertension, cholesterol and high density cholesterol) as well as the inflammatory markers (erythrocytes sedimentation rate ESR, C-reactive protein CRP, the level of monocytes), the antibodies (the rheumatoid factor RF, the anti cyclic citrullinated peptide antibodies anti – CCP antibodies, the nuclear antibodies and anticardiolipin antibodies) and also the infectious ones such as: the Helicobacter Pylori, cytomegalovirus antibodies, respiratory, urinary and periodontal infections. The intima media thickness of the carotid artery was measured in B mode high-resolution ultrasound, at 20 mm from the forked in order to show/highlight the subclinical atherosclerotic lesions. **Results and discussions:** The statistical results - the correlations between the classic cardiovascular risk factors and the specific RA markers, were assessed using the SSPS software. Thus, a predictive role in the onset of the atherogenic changes is due to both factors – the classical Framingham factors (forty five percent of the cases) and the RA specific ones (inflammations, autoimmunity and infections). **Conclusions:** Traditional cardiovascular risk factors and markers of RA severity both contribute to models predicting accelerated atherosclerosis and cardiovascular events at this patients. Increasing numbers of both types of factors are associated with greater risk.

STUDY OF ACUTE RENAL FAILURE IN MULTIPLE MYELOMA PATIENTS

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Introduction: Renal failure represents the most important factor which influences survival in patients diagnosed with multiple myeloma. Acute renal failure is present in multiple myeloma in more than 10% of patients. Precipitating factors of acute renal failure in patients having multiple myeloma are hypercalcemia, dehydration, infectious complications, hyperuricemia, nonsteroidal anti-inflammatory agents, angiotensin-converting enzyme inhibitors and radiocontrast dye. **Material and method:** The study analyses the incidence of acute renal failure, precipitating factors and survival in 18 patients diagnosed and treated between February 1999 and October 2011. **Results:** A number of 18 from 117 patients (15.38%) diagnosed and treated with multiple myeloma presented acute renal failure (11 women and 7 men), having average age 60. A stage III according to the System Salmon and Durie was found in of 77.77% of patients. Acute renal failure was present in 9 patients at disease onset. Precipitating factors were hyperuricemia (72.22%), hypercalcemia (61.11%), infectious complications (50%), dehydration (33.33%), nonsteroidal anti-inflammatory agents (5.55%). Hyperviscosity syndrome was present in 2 patients. After the dialysis, chemotherapy and treatment of precipitating factors only 6 patients had re-established the normal renal functions. A half of patients died due to acute renal failure. Median survival of patients without acute renal failure was 26 months. The survival of patients who did not respond to dialysis, chemotherapy and treatment of precipitating factors was between less than one month and 3 months but in case of responding patients it was more than 20 months. **Conclusions:** Precipitating factors of acute renal failure were hypercalcemia, dehydration, infectious complications, hyperuricemia,

nonsteroidal anti-inflammatory agents. The patients having multiple myeloma and acute renal failure who did not respond to specific treatment had a high mortality rate. Acute renal failure is a rare but a severe complication in patients with multiple myeloma.

Keywords: multiple myeloma, acute failure renal, survival.

CARDIOMYOPATHY INDUCED BY FREQUENT PREMATURE VENTRICULAR BEATS - CASE PRESENTATION

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Cardiomyopathy induced by ventricular tachycardia is a well known entity. Less well studied is the relationship between frequent ventricular extrasystoles and secondary cardiac disorder. For long time premature ventricular beats observed in healthy patients without any structural heart disease have been considered benign and without any importance. There are only a few studies which demonstrated that they can lead to dilating cardiomyopathy and heart failure. We present the case of a 51 year old male patient, known with essential hypertension for 3 years, who has presented with palpitations and fatigue. Resting ECG showed frequent polymorph ventricular extrasystoles. Complete cardiovascular investigations-cardiac ultrasound, coronary angiogram, cardiac magnetic resonance excluded a structural heart disease. On Holter monitoring frequent ventricular extrasystoles -12000/minute- persisted and in 3 years led to left ventricle dilatation and mildly impaired ejection fraction. Treatment with amiodarone was not effective, and radiofrequency ablation could not be performed. Ultimately, under combined treatment with beta-blocker and propafenone number of extrasystoles decreased, ejection fraction increased and left ventricle diameter decreased. **Conclusions:** frequent premature ventricular beats in a patient without any structural heart disease are not always harmless, they can lead to dilating cardiomyopathy. Although optimal therapy to be considered is radiofrequency ablation, medical treatment can be effective in reversing this disorder, which does not have a clarified pathogenesis yet.

THE IMPORTANCE OF KINETOTHERAPY IN LOW BACK PAIN

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Introduction: Low back pain is one of the most frequent reasons for rehabilitation. It is induced by tissue damages as well as vertebral structure osteoarthritis. **Material and Methods:** 40 patients were included in the study, diagnosed with lumbar hernia at the level L4-L5, L5-S1, subacute or chronic stage, phase III, stage I, who presented at the specialized outpatient clinic and Department of Rheumatology and Rehabilitation Târgu Mureș. The study was performed during March-August 2010. The patients were divided into two groups: group A included 20 patients treated by medication therapy, electrotherapy and sedative massage; group B comprised 20 patients treated in combination with medication therapy, electrotherapy, massage and kinetotherapy. The objectives of the kinetotherapy stage were: relaxation of hardness muscles, stretching of the lower trunk, lumbar stretching, increasing the tone of the muscles of the trunk, of the abdominal and lumbar extensor muscles. Neuro-proprioceptive facilitation techniques were performed along with the William program, the Kabat program and exercises for increasing muscle tone. During the remission of symptoms the "school back" program was applied which has three major objectives: the maintenance of a proper position of the vertebral column and of the basin, blocking the lumbar spine and maintenance of muscle strength. These objectives were recommended to be continued at home. The evaluation of the patients was performed at the beginning, after 3 weeks and after 6 months from the diagnoses using the VAS (analog visual scale for the pain) scale. **Results:** In the patients from the first group, who underwent kinetotherapy for three weeks, as well as at home, keeping to the secondary kineto-prophylaxis rules, a significant decreasing of lumbar pain was noticed as opposed to the patients from group B. **Conclusion:** The complex treatment consisting of a combination between medication therapy, electrotherapy, sedative massage with kinetotherapy was superior to the treatment without kinetotherapy. It is very important to continue kinetotherapy at home and to keep to the kinetotherapy secondary rules for a good evolution of the disease.

Keywords: low back pain, kinetotherapy, secondary kineto-prophylaxis

THE ROLE OF MONITORING THE BCR-ABL TRANSCRIPT LEVELS IN THE MANAGEMENT OF CHRONIC MYELOID LEUKEMIA PATIENTS

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Introduction: Chronic myeloid leukemia (CML) is a clonal myeloproliferative disorder that arises in the stem cell compartment. The molecular hallmark of the disease is the *BCR-ABL* gene rearrangement, which usually occurs as the result of a reciprocal translocation between chromosomes 9 and 22. Thanks to earlier diagnosis, better supportive care, and more effective therapies, disease free survival rates for patients with CML (chronic myeloid leukemia) have increased. The introduction of signal transduction inhibitors revolutionized management of patients with chronic myeloid leukemia. Because disease free survival rates have increased, managed care is a critical issue for patients and for physicians treating CML. The goals in managing the treatment of CML are twofold. First, the aim is to normalize peripheral blood counts down to normal levels (the hematologic response), and second, to eliminate or reduce the degree of the Ph chromosome (known as the cytogenetic and molecular response). Real-time quantitative polymerase chain reaction (RQ-PCR) provides an accurate measure of the total leukemia cell mass and the degree to which *BCR-ABL* transcripts are reduced by therapy correlates with progression-free survival. **Material and methods:** At the Clinical Hematology Unit Tg-Mures between 2005- 2011 we had 16 patients diagnosed with chronic myeloid leukemia. Regular RQ-PCR monitoring and cytogenetic analysis was performed. **Results:** Most of the patients were in first chronic phase (9 patients), two patients presented blast crisis at diagnosis. Most of the patients received Hydroxyurea and continued with Imatinib. The *BCR-ABL* transcript levels were measured every three month. Eleven patients are in major molecular response under imatinib treatment. Two patients presented increasing transcript level and received escalated dose of imatinib. Three patients presented resistance to first and second generation of tyrosine kinase inhibitors and died from evolution of the disease. **Conclusions:** Because a rising level of *BCR-ABL* is an early indication of loss of response and thus the need to reassess therapeutic strategy, regular molecular monitoring of individual patients is clearly desirable.

CARDIOLOGY

IMPACT OF ORGANIZATIONAL EFFORTS IN BUILDING NETWORKS FOR PRIMARY PCI ON REDUCTION OF AMI RELATED MORTALITY

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Introduction: The aim of this study is to follow the impact of organizational work in building a network and a team dedicated to primary PCI on the increase of number of STEMI patients sent in time for primary PCI, correlated with a decrease of mortality rates in AMI. **Methods:** The registry included 13 hospitals, having the closest interventional center at a maximum distance of 200 km. Data regarding clinical presentation, risk factors, therapy and evolution were collected, centralised and processed in Clinic of Cardiology from Târgu Mureş. **Results:** The registry included a total number of 3,764 patients with ACS - 1.615 Acute Myocardial Infarction and 2.149 Unstable Angina. The percentage of reperfusion therapy (primary PCI + thrombolysis) in gr.1 was 9.15% in 2004, increasing up to 17.16% in 2008. In gr. 2, reperfusion therapy was possible in 99.39% of cases, consisting in primary PCI in 76.96% cases, facilitated PCI in 15.75% cases and thrombolysis in 6.6% cases. Mortality rates in gr.1 showed a continuous decrease, from 20.77% in 2004 to 14.2% in 2008, correlated with the increase of reperfusion therapy ($p=0.001$). In group 2 global mortality was 6.6% for patients arrived in time for PCI, compared with 17.65% for patients with late arrival (>12 hours) ($p<0.001$). **Conclusions:** We succeeded in decreasing mortality rates in AMI in a territory of 1 million inhabitants from 20.77% to 14.2%, representing a 31.6% reduction in mortality for AMI patients presented in territorial hospitals without PCI facilities. This was mainly due to a complex educational and organizational activity which resulted in double rates of patients receiving reperfusion therapy and 18 times higher percentage sent to interventional center in 2008 compared with 2004. In a period of 5 years, a number of 3,990 Acute Coronary Syndrome patients were enrolled. Data recorded in our regional registry in 2010 shows a reperfusion strategy applied in 58,% of cases, mostly represented by primary PCI. Analysis of data evolution during time shows that the territorial hospitals showed a high percentage (90,4%) of conservative treatment in 2004, but during this registry period this percentage decreased in 2010 to 41.6%. We recorded global mortality rates similar with the national data. However, subanalysis of mortality data in the 3 different counties indicates significantly lower rates in interventional center than in surrounding cities and counties. The adherence to european guidelines is significantly higher in the territory of the regional registry compared with the national situation. This is mainly due to an intense educational and organizational work performed during several years in the territory of the regional registry and is reflected in lower mortality rates especially in those locations which record a high number of primary PCI in STEMI.

COMPLEX ASSESSMENT OF CORONARY LESIONS, WITH LATEST NON-INVASIVE IMAGING TECHNIQUES

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Introduction: 64 multislice CT angiography is a newly introduced imaging technique that manages the three-dimensional visualization of coronary arteries. One of the advantages of this method is that is able to estimate the degree of calcification of atheroma plaques in the coronary calcium score calculation, which correlates with the severity score of atheromatous systemic burden. **Methods:** The purpose of the study is to evaluate the role of noninvasive imaging in the assessment of vascular lesions and planning of revascularization therapy. The study includes 125 patients with rest angina symptoms and ECG modifications (at rest or during exercises) who underwent angio CT and revascularization by PTCA, and 38 patients who underwent CT examination. **Results:** Based on the angio CT examination calcium score was determined in all patients. In 45 patients the calcium score was below 400 in 54 patients it was between 400 and 600, and in 26 patients it was over 600. Correlating these data with coronary angiography issues, it was observed that the patients with calcium score between 400, had a higher percentage uni-vascular presence of coronary disease (65% of cases), while those with calcium score more than 600 most patients had sever diffuse coronary disease. Technical success was recorded in 97.91% of cases. No complication were registered. **Conclusions:** Angio CT examination is an imaging method that allows noninvasive assessment of coronary lesions, and their complexity, in outpatients, accurately assessing the indication for revascularization and optimal methods for this. Angio CT examination results have had a very good correlation with data obtained by angiography and IVUS, OCT, bringing additional data on arteries calcifications by calculating calcium score. Full examination of the structure and position of atherosclerotic plaque has led to a choose of having the appropriate interventional strategy and as a result reduce periprocedural complications.

COMPLEX ASSESMENT OF CORONARY PLAQUES USING CARDIO CT MULTISLICE 64 AND INTRAVASCULAR ULTRASOUND

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Introduction: Atherosclerotic plaque composition play an important role in the natural progression of the disease towards development of an acute coronary syndrome. The aim of our study was to assess the instability degree of coronary plaques based on complex analysis of plaque composition using multislice 64 computed tomography coronarography (MSCT) and intravascular ultrasound with virtual histology. **Material and methods:** Lot A - 14 patients with acute coronary syndromes, Lot B – 10 patients with stable angina. All patients presented coronary artery stenoses with >75% luminal narrowing. In all cases we performed coronarography, MSCT and intravascular ultrasound with virtual histology. We determined: plaque volume, plaque burden, stenosis % and calcium scoring. **Results:** Plaque volume was 148.6 mm³ in lot A respective 183.4 mm³ in lot B. Intravascular ultrasound clearly differentiated the unstable plaque versus non-unstable plaque based on determination of the exact content of soft atheroma and necrotic core. In gr.A analysis of plaque composition with IVUS showed a content of 68% of unstable, cholesterol reach atheroma, 21% of fibrous plaque and 11% calcification, while in group B we recorded a content of 25% cholesterol reach plaque, 38% fibrous plaque and 37% calcification (p=0.02). MSCT analysis of intraplaque densities showed a 65% content of low density atheroma in gr.A and 22% in gr.B (p=0.02). Clasification of coronary plaques with MSCT based on the plaque density and calcification was also correlated to the development of acute coronary syndrome – 14% calcified plaques, 32% mixed plaques and 54% non-calcified plaques in groupA, while in group B 78% calcified plaques, 12% mixed plaques and 10% non-calcified plaques (p=0.2). **Conclusion:** Analysis of plaque morphology using IVUS with virtual histology and MSCT, showed that the content of low density atheroma within the plaque correlates with the evolution to development of an acute coronay syndrome. Both methods seem reliable in determining the content of low density atheroma, but IVUS is superior to MSCT in detecting vulnerable plaques, as differentiation of lipid-rich content from fibrous content in a low density plaque remains challenging with MSCT.

THREE-DIMENSIONAL ASSESMENT OF LEFT VENTRICULAR REMODELLING AND ISCHEMIA IN ISCHAEMIC DILATED CARDIOMYOPATHY USING 3D ECHOCARDIOGRAPHY AND ANGIO CT MULTISLICE 64

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Introduction: The aim of the study was to asses the role and efficacy of two threedimensional imagistic methods in providing a complex analysis of myocardial contractility disorders: multislice 64 computem tomography coronarography (MSCT) and computerised 3D echocardiography. **Material and methods:** 42 patients with angina, ECG changes suggestive of ischaemia and significant coronary lesions (>75% stenoses) at coronarography, in whom we performed: (1) computerised 3D echocardiography (C3DE) for 3D analysis of contractility disorders, using as indicator of contractility the amplitude of endocardial border movement after tracing the endocardial broder and obtaining a contraction curve for each segment; (2) MSCT 64 for complex assesment of coronary lesions and for computerised evaluation of segmentar ischaemia and contractility disorder, using as indicator of contractility the amplitude of wall thickening after tracing the endocardial and epicardial borders and obtaining polar maps of contractility. **Results:** C3DE precisely identified the location and extent of contractility disorder identified as an average decrease of 56,4% of maximum contraction amplitude in ischaemic segments compared with non-ischaemic segments. Angio CT multislice 64 succeeded not only to identify ischaemic segments using a more reliable parameter – wall thickening, which was 25.4% for ischaemic segments compared with 42.3% for non-ischaemic segments, but also to correlate the location of contractility disorder with the distribution of coronary lesions, using CT coronarangiography performed in the same session. We identified significant coronary lesions in 82.4% of the coronary arteries supplying those segements classified as ischaemec using echo 3D and in 95.3% of the coronary arteries supplying segments classified as ischaemic using MSCT 64. (p=0.005). **Conclusions:** Both C3DE and MSCT 64 could represent 3D imagistic methods extremely useful for complex and objective assesment of myocardial ischaemia and contractility. The advantage of MSCT is the possibility for noninvasive evaluation of coronary circulation in the same session and a higher dergree of accuracy, which derives from a more objective assesment using not only endocardial border movement, but also wall thickening as indicators of segmentar contractility. In our study, the location of ischaemic segments identified with MSCT presented a higher correlation with distribution of coronary lesions than location of those identified with C3DE, which supports the superiority of MSCT 64 for complex 3D imagistic assesment of myocardial ischaemia.

CORRELATIONS BETWEEN THE TRANSPORT LOGISTICS AND THE OUTCOME OF PRIMARY PCI IN ACUTE MYOCARDIAL INFARCTION

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Introduction: the incidence of acute myocardial infarction shows growing tendency, and has a mortality rate which can achieve 30%, more than half of all case prehospital mortality. Although the in hospital mortality rate of acute myocardial infarction decreased in the PCI era, still the outcome of the disease and the complications remains high due to the late presentation of the patient. **Material and methods:** we performed a retrospective study from the casuistry of the Emergency County Hospital of Mures, Clinic of Cardiology, from august 2010-august 2011, which included 303 cases of acute myocardial infarction. We noted the average age, sex, number of stents deployed, culprit lesions location, outcome of primary PCI, the time of first medical contact, pain to balloon time, first medical contact-cathlab time and mortality. **Results:** we enrolled 303 patients in the study, the mean age of the patients was 61 ± 9 years, 31% were female and 69% male. The culprit lesion location was LAD in 46% of cases, followed by RCA, 37%, CX, 12%, and multivessel disease 5%. For the majority of a patients, 137 cases, the first medical contact (FMC) was within 2 hours after the chest pain debut, 95 patients presented between 2 and 4 hours, in 35 caese the FMC was in 4-6 hours, in 18 patients above 6 hours. We noted a 2.27 hour mean FMC time. The transport time was under 2 hours for 118 patients, majority of patients, 148 cases, arriving within 2-4 hours to the cathlab after the first medical contact. The mortality in the cathlab was 4.65%. Mortality was higher if patients arrived in cardiogenic shock. The 30 day mortality was 8,27%. **Conclusions:** although the transportation times are improving, the bottleneck of treatment of acute myocardial infarction is late presentation in primary emergency units. Optimal outcome can be achieved by early presentation and short transport times. The acute coronary syndrome network needs to focus on reducing these time intervals. Training courses and well organised emergency logistics are necessary.

PARTICULAR ASPECTS REGARDING INTRAARTERIAL FIBRINOLYSIS IN CRITICAL LIMB ISCHEMIA

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Introduction: it is well known that in certain heart diseases thromboembolic complications are not uncommon. The treatment of choice of critical ischaemia was surgical, but in some circumstances not everyone is eligible for surgery. Conservative treatment rarely gives good results. An alternative method may be the thrombolytic therapy, but systemic administration of a high dose streptokinase may result in thromboembolic accidents or serious bleedings. Intraarterial drug administration in small doses can eliminate the risks above. **Materials and methods:** in this study were included a total of 56 patients with acute critical peripheral ischemia, a follow-up period of 4 years. We performed intrarterial thrombolysis with streptokinase, associated with percutaneous transluminal angioplasty. In 26 cases, intraarterial thrombolysis was performed for arterial obstruction caused by embolism of cardiac origin, and in 30 cases for other source of embolism (bypass obstructions, PTA complications, other unknown sources). The mean dose of the streptokinase was 800 000 IU. **Results:** Immediately postprocedural we recorded a 79% of primary repermeabilisation and partial lysis of the thrombus in the remaining cases (21%, demonstrated angiographically). At 24 hours after the intervention, in all cases complete revascularization was present. Four year limb salvage occurred in 87% of the cases. **Conclusions:** Selective intraarterial thrombolysis associated with balloon angioplasty and stent implantation improves short and long term results. Reducing the rate of amputations can be achieved by prompt diagnosis and optimal interventional therapy. In most cases the correct treatment of the peripheral critical ischemia may increase the Doppler index and improve the quality of life.

CORRELATION BETWEEN POSTINFARCTION REMODELLING PROCESS AND DEVELOPMENT OF VENTRICULAR ARRHYTHMIA IN ISCHAEMIC DILATED CARDIOMYOPATHY

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Introduction: The aim of our study was to analyse the extent of remodelling proces following an acute myocardial infarction as a possible predictor for development of ventricular arrhythmia in postinfarction period and the impact of early invasive opening of coronary arteries in reducing the incidence of ventricular arrhythmia via attenuation of the remodelling process. **Material and methods:** We enrolled 63 patients with acute myocardial infarction and low ejection fraction (<45%), divided into 2 groups: Gr. 1 -35 patients with primary PCI, gr.2 – AMI treated conservative for late presentation (>12 hours) in whom we performed PCI 6 weeks after infarction. In all cases computerised 3D echocardiography (C3DE) was performed for complex assesment of remodelling process at one week

after infarction and after 6 months, and a regional remodelling index (RRI) was calculated as a sum of segmentar remodelling indexes divided by number of segments with remodelling, segmentar remodelling index being represented by the ratio between segmentar and ventricular volume in diastole + the same ration in systole divided by 2. These determinations were repeated at 6 months after intervention during follow-up. **Results:** Ejection fraction increased from 42.3% to 45.4% in group 1 and from 41.2% to 42.3% in group 2 at 6 months. One week after infarction, in gr.1 RRI was 9,42 in infarcted segments and 5,42 in the rest of the cavity, while in group 2 RRI was 10,72 in infarcted segments compared to 7,93 in the rest of the cavity ($p=0.002$). At 6 months RRI regressed in group 1 with 31.75% in infarcted segments and with 16.32% in the rest of the cavity, while in group 2 with 17.32% in infarcted segments compared with a regression of 11.15% in noninfarcted segments ($p=0.005$). Ventricular arrhythmia were present in 43% of patients in gr.1 and 35% of patients in gr.2 immediately after infarction. The follow-up performed at 6 months showed persistence of ventricular arrhythmia in only 5.7% of patients in gr.1 compared with 14.28% in gr.2 ($p=0.05$). **Conclusion:** our data show that the extent of remodelling process was correlated with a higher incidence of ventricular arrhythmia. Late revascularisation in AMI is associated with a more pronounced remodelling process and increase in incidence of ventricular arrhythmia. As these arrhythmia persisted despite the re-establishment of coronary flow, the possible cause for them could be represented by the more expressed remodelling process and development of fibrous tissue in these patients.

THREE-DIMENSIONAL ASSESMENT OF LEFT ATRIAL MECHANICAL AND STRUCTURAL REMODELLING IN PATIENTS WITH HEART FAILURE AND ATRIAL FIBRILLATION

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Introduction: Atrial fibrillation (AF) is a condition associated with complex electrical, structural and mechanical remodelling. The aim of our study was to use the Computerized 3D Echocardiography (C3DE) for complex and objective assesment of left atrial (LA) structural and mechanical remodelling extension and identify predictors for recurrence of AF after cardioversion. **Methods:** We enroled 40 patients with heart failure and atrial fibrillation shorter than 6 months, in whom we performed C3DE immediately after cardioversion and at 1 month. In all cases we performed a computerized analysis of LA shape, geometry and volumes, using an adapted Qlab software in which reference points were identified at pulmonary vein insertions and mitral annulus, followed by manual adjustment of LA tracing borders. Contraction amplitude of left atrium myocardial fibers was determined based on the amplitude of endocardial border movement and displayed as graphical representation and bulls-eye chart. The following parameters were determined: left atrial contraction amplitude, left ventricular ejection fraction, left atrial volume and diameter. Follow-up was performed at 1 month and 3 months to analyse the recurrence of AF. **Results:** 25 patients converted to sinus rhythm maintained the sinus rhythm at 3 months (group 1) and 15 presented AF recurrence (group 2). Both mechanical and structural remodelling were more pronounced in patients who presented AF recurrence. Parameters characterising structural remodelling at 1 month were: LA maximum volumes - 53,2 ml in gr.1 and 62.3 ml in gr 2 ($p=0.005$), LA maximum diameters - 43 mm in gr.1 compared with 52 mm in gr.2 ($p=0.002$). Analysis of mechanical remodelling parameters showed a superior contraction amplitude in the rhythm control group - 2.0 mm, compared with recurrence group - 1.7 mm ($p=0.01$). Ventricular function was superior in the rhythm control group -LVEF 46.5%, compared with the recurrence group - LVEF 45.3% ($p=0.02$). **Conclusions:** C3DE analysis identified several predictors for rhythm ouctome, like parameters charaterising left atrial structural (increase of LA diameters and volumes) or mechanical remodelling process (LA contraction amplitude), while ventricular function was more depressed in patients with AF recurrence. However, extension of structural remodelling showed a higher correlation with AF recurrence than contractile remodelling.

AN UNUSUAL CAUSE OF DIFFUSE ST-SEGMENT ELEVATION ASSOCIATED WITH BRUGADA-LIKE ECG PATTERN

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This is a case presentation of a 62 years old male patient, with right lung carcinoma, who presented suddenly a cardiovascular collaps associated with left chest pain and significant ECG changes consisted of atrial fibrillation, diffuse ST-segment elevation and Brugada-like ECG pattern. The ECG changes resolved completely by the emergency treatment of the underlying cause - left sided tension pneumothorax, a relatively rare condition in nontraumatic setting. In the discussion of the case we present a brief review of the main causes of Brugada-like ECG pattern.

ECHOCARDIOGRAPHIC EVALUATION OF DIASTOLIC DYSFUNCTION IN DIABETIC PATIENTS WITH ANGIOGRAPHICALLY NORMAL CORONARY ARTERIES

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Introduction: Diabetic patients have a significantly increased risk of developing heart failure independent of the coexistence of coronary disease. Diabetic cardiomyopathy is a disease which affects the myocardium in diabetic patients causing both functional and structural abnormalities. These changes in the diabetic myocardium lead to diastolic and systolic dysfunction or a combination of these. Systolic dysfunction occurs late, often when patients have already developed significant diastolic dysfunction. **Purpose:** The purpose of the present study was to assess the diastolic function in diabetic patients with angiographically normal coronary arteries. **Material and method:** Diabetic patients with normal coronary findings were examined by echocardiography. We determined transmitral E and A wave velocity, E/A ratio, E wave deceleration time, isovolumetric relaxation time (IVRT), the deceleration time of early mitral inflow (TDE). We determined the diastolic velocities (E' and A') of the mitral annulus and the E/E' ratio by using pulsed wave Doppler. **Conclusions:** Impairment of the LV diastolic function was frequently observed in our patients even with intact systolic function. We found various abnormalities in diastolic function: prolonged isovolumic relaxation time, impairment in rapid diastolic filling, increased atrial contribution of left ventricular filling (reduced E/A mitral ratio), etc.

NONINVASIVE ASSESSMENT OF CORONARY STENTS USING ANGIO CT MULTISLICE 64

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Introduction: One of the key problems in the differential diagnosis of chest pain in patients with coronary stents may be due to either an in-stent restenosis or to development of new coronary lesions. The present study aims to assess the utility of a new imaging method – Angio CT multislice 64 – in the complex evaluation, through a noninvasive way, of the coronary circulation in patients with coronary stents. **Material and method:** 21 angio CTs were performed on patients who presented chest pains after coronary stent implantation. In all cases a complex 3D analysis of the coronary circulation, coronary lesions and intraluminal stent area was performed. **Results:** Of the 21 cases, only 1 presented stent occlusion while 20 had the stent permeable with no signs of restenosis. In 60% of the cases the symptoms were due to development of new coronary lesions, which were located as follows: LAD: 30%, ACX: 25%, RCA: 5%, while in 40% no significant stenosis was found on any of the coronary segment. From the cases with significant stenosis, in 33% of cases the lesions occurred in the same artery where the stent was implanted and in 67% in a different artery. **Conclusions:** Angio CT multislice 64 is a new and elegant imaging method which provides the possibility of a complex 3D analysis of the coronary circulation in a noninvasive way, and can be used as a noninvasive follow-up procedure of patients with coronary stents.

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RESULTS OF INTERVENTIONAL REVASCULARISATION IN POPLITEAL AND TIBIAL LESIONS IN CRITICAL LIMB ISCHEMIA

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Introduction: High percentage of patients suffered in Peripheral Artery Disease are admitted in hospital in emergency conditions in the critical stage of the disease with high risk for amputation and mortality. The short and long term prognosis of critical limb ischaemia is extremely preserved with a 25% 1 year amputation rate and a 25% 1 year mortality rate. In this study we followed the efficiency and results of complex interventional treatment (balloon angioplasty, stent implantation, excimer laser angioplasty), amputation rate and survival in patients with lesions located at popliteo-tibial level. **Material and method:** There were collected and processed data of patients with 174 lesions located at popliteo-tibial level. Mean age was 65 years. 81% of patients were male and 19% female. All lesions were eligible for angioplasty, 99 lesions benefit from balloon angioplasty alone (group 1) in 7 lesions stent implantation (group 2), in 24 lesions excimer laser angioplasty was associated (group 3). The mean value of ankle-brachial index before the intervention in group 1 was 0,74±0,24, 0,38±0,18 in group 2 and 0.43±0.2 in group 3. **Results:** technical success was 95.33%. Using the laser angioplasty in case of failed balloon procedure the success rate increased from 89,34% to 94,14% (p=0.15). The global permeability rate was 96.91% at 6 month follow-up, 93,06% at 1 year, 89.98% at 18 month and 88.34% at 2 year which was mentioned until the 5 years follow-up. The primary permeability rate was higher in PTA group compared with stenting group. (90.89% versus 82.69%) (p=0.24). After 30 month follow-up the survival rate was 93.29% and 91.51% in group 2 and 3. At 9 month 98.8% of patients were amputation free, this percentage decreased to 83% during the 4 year follow. **Conclusions:** interventional treatment in the last period

became the first line choice in the treatment of critical limb ischaemia. The success rate is increased when excimer laser angioplasty and stent implantation is associated. Primary and secondary patency is maintained in high percentage during the 4 year follow-up.

PRIMARY PERCUTAN CORONARY INTERVENTION FOR SEPTAL PERFORATOR ARTERY REVASCLARISATION IN A YOUNG PATIENT - CASE PRESENTATION

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Introduction: Obstructive disease of large SP arteries may cause angina, ischemia or infarction of the IVS, conduction abnormalities or arrhythmias. Atherosclerotic disease of the SP arteries often accompanies disease in the LAD, but a discrete lesion in a large SP may create clinical symptomatology itself and deserve revascularization. **Case report:** The 27 years old, smoker male patient was admitted in our hospital at 5 hours after he presented in a territorial hospital with 90 minute long chest pain episode. The first medical contact ECG showed a 3 mm ST segment elevation in V1-V2 leads. Troponin I was positive at the arrival time. Coronary angiography showed severe stenoses in the proximal segment of the septal perforator artery with antegrade TIMI I/II flow. There were no other lesions visualised on the LAD, Cx and RCA. We performed primary PCI using right transradial approach, JL 3,5 guiding catheter, BMW guide. After predilatation with 1,5x15 mm angioplasty balloon, we implanted a 2,5x19 mm BMS in the proximal segment of the septal artery. During the procedure the patient presented chest pain and III degree AV block. After the procedure the patient presented optimal evolution, without chest pain, the maximum total CK value was 479 IU, without conduction abnormalities or arrhythmias. **Discussion:** The major point of concern in SP stenting is the ostial location of the lesion and the risk of jeopardizing a disease-free and patent LAD while trying to revascularize the SP. In the literature there are only a few cases reported with septal artery stenting. The particularity of this case it was that we performed a primary PCI procedure in a young patient with potential risk for complications.

STABLE CORONARY DISEASE – THERAPEUTIC APPROACHES FOR HIGH-RISK PATIENTS

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Introduction: Contemporary guidelines on myocardial revascularization are based primarily on studies conducted before the widespread use of optimal medical therapy (OMT). As a result, the relative benefits for survival and angina observed with revascularization therapy several decades ago might no longer be observed these days. In addition, the concurrent administration of OMT may substantially improve long-term outcomes in patients invasively treated. In this study we wanted to assess the value of different approaches (medical, surgical, interventional) in the management of patients with stable coronary disease and definite indication - according to current guidelines - for myocardial revascularization. **Material and Method:** Study included 115 patients with stable coronary disease and high-risk criteria for major adverse cardiac events (MACEs) – left main or proximal left anterior descending artery stenosis > 50%, 2 or 3-vessel disease with impaired left ventricular function. Of these, 39 underwent percutaneous coronary intervention (PCI), 44 underwent coronary artery bypass grafting (CABG), both subgroups with OMT, and 32 received OMT alone. Primary outcomes were cardiac death and non-fatal myocardial infarction, and secondary outcomes were persistent disabling angina (quality of life) and the need for repeat revascularization. The follow-up period was 4.5 years. **Results:** The primary outcome was 25.00% in the OMT group, 10.26% in the PCI group and 4.54% in the CABG group. There was no statistically significant difference between OMT and PCI group ($p=0.12$) and between PCI and CABG group ($p=0.41$), but the primary events were significantly higher in the OMT group vs CABG group ($p=0.014$). Angina persists in 43.75% of patients in OMT group versus 30.77% in the PCI group ($p=0.32$) and 9.09% in the CABG group ($p=0.0008$). Between the last two groups, there is a difference in favor of CABG ($p=0.02$). In addition there was a tendency for increased repeat target vessel revascularization in the interventional group (12.82% vs 2.27%, $p=0.09$). Drug eluting stents were used in 56.41% of cases. **Conclusion:** Revascularization techniques and medical therapy have improved substantially during the last years. Therefore further studies are needed to provide contemporary data on the optimal management strategy of patients with stable coronary disease.

Keywords: stable coronary artery disease, percutaneous coronary intervention, coronary artery bypass grafting

VON WILLEBRAND FACTOR – MARKER OF THE PARALLEL PROGRESSION OF ENDOTHELIAL DYSFUNCTION AND ATRIAL FIBRILLATION

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Objectives: A growing body of evidence show that endothelial dysfunction plays a pivotal role in the thromboembolic risk of patients with atrial fibrillation (AF). Several prothrombotic markers, including von Willebrand factor (vWF), have already been documented as elevated in patients with AF. Still, vWFs origin is far from clear. We hypothesised that making multiple dosages at different levels of the circulatory tree would allow identifying the origin of vWF in these patients. **Materials and methods:** Using a case-control study, 69 patients with paroxysmal (Px) and 40 with persistent (Ps) AF were compared to 10 control (Ct) subjects (left-sided accessory pathway WPW syndrome). Peripheral (Pp), coronary sinus (CS) and left atrial (LA) blood samples were obtained during routine catheterization, prior to catheter ablation procedures for AF or accessory pathway. Serum levels of vWF were measured by immunoturbidimetry. **Results:** Patients with Px AF had higher LA blood levels of vWF (115.1 ± 50.8 UI/dL vs 84.6 ± 29.7 UI/dL, $p=0.02$), but similar Pp and CS blood levels of vWF ($p>0.1$) compared to Ct. Patients with Ps AF had significantly higher levels of vWF in all of the three samples (Pp: 124.2 ± 54.1 UI/dL vs 91.7 ± 36.3 UI/dL, $p=0.03$; LA: 137.2 ± 51.2 UI/dL vs 84.6 ± 29.7 UI/dL, $p<0.01$; CS: 127.8 ± 48.7 UI/dL vs 83.0 ± 19.3 UI/dL, $p<0.01$) compared to Ct. Compared to patients with Px AF, patients with Ps AF had higher LA levels of vWF (137.2 ± 51.2 UI/dL vs 115.1 ± 50.8 UI/dL, $p=0.03$). **Conclusions:** Our results confirm the presence of a prothrombotic state in patients with AF. This study is the first to report that in patients with Px AF the secretion of vWF is limited to the atrial endocardium. In patients with Ps AF a widespread process involving endocardium and vascular endothelium are at the origin of vWF, showing the progressive nature of the process. High LA vWF levels in both Px and Ps AF patients could explain their similar risk of stroke. Similarly, the high levels of von Willebrand factor observed in patients with AF and adequate INR could explain the occurrence of stroke in patients with apparently efficient anticoagulation.

CLINIC AND CORONAROGRAPHIC FEATURES OF INTRASTENT RESTENOSIS

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Aim: analysis of incidence, clinical and coronarographic aspects of intrastent coronary restenosis. **Materials and methods:** 515 patients with coronary lesions were analyzed having undergone coronary angioplasty and stent implantation, 25% females and 75% males, aged between 25 and 87. Within 30 months after angioplasty with stent implantation, the stent restenosis occurred in 4% of patients. **Results and discussion:** Mathematical statistic significance was found for the following features of stent restenosis: it is 3.12 times more common in women than in men; there is no predilection for a particular age group; it is more common in hypertensive and diabetic patients; it is 4.32 times more common in smokers than in nonsmokers; stent restenosis is clinically manifested as angina in 95% of cases (70% unstable angina and 25% stable angina) and only 5% as acute myocardial infarction; it occurs most commonly in the anterior descending coronary artery (52%), followed by right coronary artery (36%) and circumflex artery (8%); focal restenosis (60%) is more common than diffuse restenosis (40%); stent restenosis is 3.16 times common in patients with *bare metal stent* than in patients with *drug eluting stent*; in 60% of cases it represents severe restenosis (50–90% of the stent lumen) or very severe (90%), light restenosis occurring only in 40% of cases; restenosis occurs 15 times more common in stents implanted in the first segment of coronary artery than in segments II-III. **Conclusions:** Due to the risk of restenosis, stent patients are a special category of cardiac patients, careful clinical, coronary angiography and therapeutic follow-up imposing them.

EARLY AND LATE RESULTS OF CORONARY ANGIOPLASTY

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Aim: analysis of early and late results (expressed as readmissions) of coronary angioplasty. **Materials and methods:** 515 patients with coronary lesions who have undergone coronary angioplasty and stent implantation were analyzed, 25% women and 75% men, aged between 25 and 87. **Results and discussion:** Results of coronary angioplasty were excellent: the opening of the vessel was successful in all cases (100%) and restoration of normal coronary flow over TIMI III was obtained in 90% of patients. Complications have been reported only in 4.3% of patients. Within 30 months after angioplasty with stent implantation, 111 (21.5%) patients required readmission for: coronary diseases 63.9% (32.4% unstable angina, 23.4% stable angina, 8.1% acute myocardial infarction), heart failure 28.9%, atrial fibrillation 3.6% and cardiac dilation 3.6%. Readmissions were influenced by associated diseases: hypertension (among readmitted patients, 67.5% had hypertension), diabetes (23.42%), peripheral arterial disease (8.1%), chronic renal failure (3.6%),

stroke (2%). Risk factors also influenced readmission: dyslipidemia (51.5% of readmitted patients had dyslipidemia after angioplasty), smoking (28% of readmitted patients continued to smoke after angioplasty) and obesity (24% of patients remained obese after angioplasty). **Conclusions:** Successful angioplasty does not guarantee stability for the patient. Because of associated diseases: hypertension, diabetes mellitus, peripheral arterial disease, renal failure and stroke or because the persistence of risk factors: dyslipidemia, smoking, obesity, 30 months after angioplasty 21.5% of patients suffering recurrence of coronary heart failure, arrhythmias or cardiac dilation, required rehospitalization. However, due to the excellent early results, angioplasty should be the main therapeutic method of coronary heart disease.

CORONARY ARTERY MALFORMATIONS AND MYOCARDIAL BRIDGES, AS IMAGED WITH CARDIAC COMPUTED TOMOGRAPHY – CAZUISTRY OF CARDIOLOGY CLINIC

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Introduction: Coronary artery malformations are rare, but can lead to various cardiovascular events. The severity of clinical manifestation depends on the degree of the malformation. Approximately 20–30% of patients with cardiac chest pain have a normal coronary angiogram. About 5% of these patients, a myocardial bridge can be identified. Muscular bridge may alter the hemodynamics of the coronary circulation in susceptible individuals. Cardiac computed tomography (CCT) has proven to be a good non-invasive diagnostic tool in the detection of coronary artery malformations and myocardial bridges. **Material and methods:** In a retrospective study, we included 225 patients with symptoms of angina and ECG modifications (at rest or during exercise). Diagnostic confirmation was made non-invasively using multislice cardiac computed tomography. CT angiography was performed for all patients, and the data was analyzed concerning coronary malformations and myocardial bridges to. **Results:** We have found 8 patients, who presented various symptoms in relation to the coronary artery malformations (variations in origin or course of the coronaries, coronary artery fistula, coronary hypoplasia, coronary artery aneurism); and 35 patients with angina in relation to myocardial bridges. **Conclusions:** Coronary artery malformations are a rare congenital disease which can produce symptoms of varying severity depending on the size of the malformations, but the muscle bridges are more common. The clinical significance of myocardial bridges varies, and most patients are asymptomatic. However angina, ventricular fibrillation, cardiac arrhythmias and sudden cardiac death have been reported in association with myocardial bridges. CCT angiography can help in the non-invasive diagnosis of the malformation along with revealing the anatomic details, which can be used for surgical planning, or for better medical management of the patients.

COMPARATIVE STUDY OF THE VALUE OF ECHOCARDIOGRAPHY AND IMPEDANCE CARDIOGRAPHY IN THE HEMODYNAMIC EVALUATION OF PATIENTS WITH ACUTE HEART FAILURE

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Aim: Comparing the value of echocardiography and impedance cardiography in the longitudinal hemodynamic monitoring of acute heart failure (AHF) patients. **Methods:** 16 patients (13 men, 3 women, mean age 69 years) with acute decompensation of chronic systolic heart failure were included in the study. We measured the stroke volume and cardiac output at the beginning and at the end of hospitalization (the day of discharge), using doppler echocardiography and impedance cardiography. **Results:** Although all the patients presented a clear clinical improvement at discharge, this was not reflected in the improvement of stroke volume (43.4 ml vs. 42.6 ml, $p=0.72$ by echocardiography and 54 ml vs. 60 ml, $p=0.076$ by impedance cardiography) and cardiac output (3.8 l vs. 3.3 l, $p=0.037$ by echocardiography and 4.7 l vs. 4.6 l, $p=0.808$ by impedance cardiography). There were no correlations or equivalence between the two basic hemodynamic parameters measured with echocardiography and impedance cardiography ($r=0.245$ for stroke volume and $r=0.3$ for cardiac output). **Conclusions:** Our findings don't support the routine use of echo- and impedance cardiography in the longitudinal (during hospitalization) monitoring of clinical course in AHF patients. The basic hemodynamic data obtained using the two methods differ significantly and are not interchangeable.

THE ROLE OF T LYMPHOCYTES IN MULTIPLE SCLEROSIS PATHOLOGY

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Multiple sclerosis (MS) is considered a CD4⁺ T-cell-mediated autoimmune disease of the central nervous system (CNS), in genetically susceptible individuals that require additional environmental triggers. The most important immunological events during MS are: 1) activation of autoreactive CD4⁺ T cells in the periphery; 2) migration through the blood-brain barrier (BBB) and formation

of the inflammatory lesions; 3) events involved in CNS tissue damage. Activated myelin-reactive CD4 T cells are present in the blood and cerebrospinal fluid of MS patients. There is an emerging role for CD8 T cells in human MS; these cells are the most numerous inflammatory infiltrate in MS lesions, are capable of damaging neurons and axons, clear CD8 T-cell activity both in MS lesions and in peripheral blood. Regulatory T cells (Th3) have the capacity to regulate both Th1 and Th2 and maintain homeostasis in the immune system; defects in the effector function have been demonstrated in MS patients. The role of Th17 lymphocytes in immunopathogenic processes in MS have recently been established; destructive tissue pathology in neuroinflammation through IL-17 that produces an inflammatory cascade. IL-17 mediates the migration and activation of inflammatory cells, BBB breakdown, attraction of macrophages and monocytes, activation of matrix metalloproteinases. The presence of high titers of IL-17 in severe cases of MS, non-responsiveness to interferon β increases the role of IL-17 in pathogenesis of MS. The success of several T cell-targeted therapies (interferons, glatiramer acetate, mitoxantrone, natalizumab, laquinimod, fingolimod, etc) in MS reinforces the importance of T cell in MS pathogenesis.

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THE USE OF ULTRASOUND IN EARLY DIAGNOSIS OF DEVELOPMENTAL DYSPLASIA OF THE HIP (DDH)

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Introduction: Sonography permits to investigate the infant hip without hazard of radiation and for routine purposes as often as required. Since the interpretation of sonographic pictures may present some difficulty the method must be studied thoroughly. The optimal time for sonographic examination does not seem to be immediately after birth when only “high risk” hips (clinical instability, positive family history, breech delivery) should undergo hip sonography, but at an age between 4 and 6 weeks when the hip has already shown its true nature. Most European centers use the morphologic on Graf method, and many American institutions have adopted the dynamic technique described by Harcke. **Material and methods:** The standard examination includes key parts of each method: a single coronal image in the standard plane as described by Graf, and transverse flexion views with and without stress as proposed by Harcke. In testing the usefulness of a sonogram it is mandatory to identify the lower limb of the os ilium, the precise middle plain of the acetabulum roof and the labrum (lower limb – plain - labrum); errors of tilting must be excluded. The Graf method is based on a single coronal image. The position of the femoral head, appearance of the bony acetabulum, and configuration of the cartilaginous acetabular rim, position of the cartilaginous labrum, and shape and echogenicity of the cartilaginous roof are all assessed, and the hip is assessed visually. Graf developed a morphologic and geometric hip classification scheme (types I to IV) using an α angle, which measures the osseous acetabular roof angle, and a β angle, which defines the position of the echogenic fibrocartilaginous acetabular labrum. **Material and Methods:** We present our findings at 32 examined newborns and infants. We used the morphologic Graf method. **Results:** At 2 patients we found II a type hip. They were treated with abduction-diaper. The ultrasound control after 1 month showed no abnormalities. **Conclusions:** Ultrasound is very useful for early detection of even mild hip dysplasias permitting reducing of treatment period. The exposure to radiation could be reduced considerably for the infants. X-rays will be needed further, however, perhaps only in special cases.

IDENTIFICATION DEZADAPTATIVE SCHEMAS TO FORENSIC INSTITUTE EMPLOYEES

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Introduction: The investigation of dezadaptative cognitive schemes, in terms of personality disorders finds that this showed a real interest for therapists, who have investigated over time these disorders. The present research was conducted in the context of increasing openness of the Romanian society to greater psychological counseling and psychotherapy, but also because of increased interest for the preparation of intervention programs which contain specific counseling techniques and methods / psychotherapy, and have an effective and immediate application in the organizational environment. **Objectives:** In the present research we sought to identify cognitive dezadaptative schemes to employees from the Institute of Legal Medicine of the Centre Region. **Material and methods:** In the first phase the subjects were asked to sign a consent form. This research was conducted on a number of 31 persons employed in the position of autopsy at the Institute of Forensic Medicine of the Centre Region. In the present study there were used to investigate cognitive dezadaptative modality, psychological evaluation platform Cognitrom CAS Assessment System assessment tool coordinated by Miclea, Maize, Szentgorgy, Maize, Cotârlea (2006). **Results and discussions:** After statistical processing of data above, it results in an average of around 29.39 years of age, with a standard deviation of 5.96. In terms of distribution studies are as follows: 22 of the subjects completed a vocational school (percentage of 71.0%) and 9 of the subjects had completed high school (percentage of 29.0%). **Conclusions:** Research has shown that subjects have paradoxical behavior, fluctuating due dezadaptative cognitive schemes. Thanks to modern assessment tools used (battery CAS and WHOQOL-BREF questionnaire developed by WHO, version 1997, Bonomi AE

et al. we might conclude that the data we collected will contribute to more relevant scientific knowledge, psychic phenomena and mechanisms involved in activation schemes treated in the paper.

Keywords: dezadaptative cognitive schemes, behavior, quality of life.

THE IMPACT OF HIV AND HEPATITIS B VIRUS CO-INFECTION

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Introduction: Human immunodeficiency virus (HIV) and hepatitis B virus (HBV) co-infections are frequently observed due to similar routes of transmission. HIV infection impacts on the natural progression of HBV infection, increasing the levels of HBV replication and the risk of liver-associated mortality. Liver diseases associated with HBV may be influenced by the antiviral drugs used for HIV infection (toxic side effects), by improvements in the immune system brought about by control of the HIV infection, and by the development of resistance to the antiviral agents used for the treatment of both hepatitis B and HIV infection. Co-infection with HBV increases the risk for hepatotoxicity in those individuals receiving highly active antiretroviral therapy (HAART) for their HIV infection. **Objectives:** The aim of the study is to investigate chronic hepatitis B and its impact on the progression of liver disease in HIV-infected persons receiving HAART. **Methods:** We have performed a retrospective study in order to assess the frequency of HBV chronic infection in HIV-infected patients monitored in the Clinic of Infectious Diseases I Tg-Mures, between January 2010-September 2011, the alterations of liver function reflected by the levels of alanin-aminotransferase (ALT) / aspartate-aminotransferase (AST), DNA-VHB viral load determined by polymerase chain reaction technique-PCR, correlated to the immune status, RNA-HIV viral load, HAART therapy. **Results:** 55% of HIV-infected patients are co-infected with HBV (positive AgHBs). The average age is 21 years, 68% patients have advanced-stage HIV infection (C2-C3), with a mean CD4 T-cells level of 260/mm³ and a mean RNA-HIV viral load of 70000 c/ml. Flairs of serum ALT/AST were registered in 26% patients. 25 co-infected patients have undergone DNA-HBV determination – 7 had undetectable DNA-HBV, 9 had DNA-HBV < 1000 UI/ml, 6 had DNA-HBV 10000-50000 UI/ml and 3 patients, who had developed liver cirrhosis had DNA-HBV>400000 UI/ml. Undetectable levels of DNA-HBV are correlated with low or undetectable HIV viral load (<10000 c/ml). All patients are under HAART therapy, including lamivudine. An important reduction in DNA-HBV viral load (< 1000 UI/ml) was registered after the initiation of tenofovir. **Conclusions:** Patients with HIV and chronic HBV coinfection included in our study had moderate levels of HBV-DNA. Data have not found HBV coinfection to have a substantial impact on immunologic or HIV virologic responses to ART or on the development of AIDS-defining illness or HIV-related death.

EFFECTS OF ADHERENCE ON THE OUTCOME OF HIV INFECTED PATIENTS

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Introduction: adherence is a key element in the management and outcome of the HIV infected patients. Those with a degree of adherence below 80% are considered non-adherent, their CD4 positive T cell count drops progressively, and as a consequence their disease evolves towards a progressive aggravation, and eventually death. The aim of this study was to evaluate the influence of adherence on distinct parameters such as body mass index, total cholesterol and triglyceride values, CD4 positive T cell count, HIV viral load. We studied the effects of different factors on adherence, such as age, duration of antiretroviral therapy, number of antiretroviral regimens and pill burden. **Material and methods:** a retrospective chart review was performed using the data of the HIV positive patients monitored in the 1st Infectious Diseases Clinic of Tg. Mureș during a period of 5 years. The adherence was calculated by noting the months when the patients took their medication from the pharmacy. The Mann-Whitney test and unpaired T-test were used for statistical analysis. **Results:** No differences between the age, duration of antiretroviral therapy, duration of HIV infection, number of antiretroviral regimens, pill burden, total cholesterol or triglyceride levels were noted between the group of patients with adherence above 80% and those with the degree of adherence below 80% were noted (p above 0.05). Significant differences were noted between the adherent and non-adherent groups regarding the value of body mass index, the initial and actual CD4 positive T cell count (p < 0.05). The percentage of patients with undetectable viral load was higher in the adherent group at the initial and at the final evaluation also. **Conclusions:** In our study adherence to antiretroviral therapy did not seem to be influenced by age, length HIV infection, treatment duration, number of regimens or pill burden. The lack of adherence did not influence the total cholesterol and triglyceride levels, but had a negative impact on the T CD4 positive lymphocyte count, HIV viral load, and body mass index, thus influencing the morbidity and mortality of the patients. We emphasize the importance of managing adherence problems, in order to control the evolution of HIV infection, provide a good quality of life and reduce mortality in HIV positive patients.

HYPERCOAGULABLE STATES IN CEREBRAL VENOUS THROMBOSIS

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Introduction: Hypercoagulable states are abnormalities of the hemostasis system, hereditary or acquired, that predispose to an increased risk of venous thrombosis, arterial thrombosis or both. **Objectives:** We present the case of a 52 year-old patient, without any known risk factors, with no history of cardiovascular disease, who presented 2 generalized tonic-clonic seizures, followed by a motor deficit of the left limbs. **Methods:** The patient presented the following neurological exam: subtle left central facial palsy, left hemiparesis, predominantly brachial (grade 0 upper limb, grade 4 lower limb), tendon reflexes more vivid on the left, positive Babinski sign on the left, awake, oriented. On general exam: BP: 140/80 mmHg, HR: 75 beats/minute, rhythmic. Emergency brain CT scan was without visible intracranial injuries at the time of the examination. Emergency brain MRI examination indicated a lack of filling in the upper sagittal sinus, located parietal-occipital, the image pleading for a luminal thrombus. Inhomogenous, gyrally, right parietal, contrast enhancement was located up to the mark of the venous infarction. Similar lesions were located parasagittal frontal bilateral, respectively right subcortical fronto-parietal. Routine laboratory tests performed were within normal limits. Anti-infective serology revealed no pathological changes. Coagulogram and protein C, S and antithrombin III activity revealed an antithrombin III deficiency (AT III=60%, C protein=48%, S protein=normal). The treatment given consisted of: anticoagulant therapy, brain depletion therapy, antiepileptic drugs, electrolyte rebalancing, gastroprotective agents, corticosteroids, antibiotics. Evolution was favorable, motor deficit being regressive, at discharge from hospital with a left brachial monoparesis grade 4+. **Conclusions:** The presented case reveals the complex etiology of cerebral venous thrombosis and the need for a more comprehensive investigation of these patients in order to detect a hereditary or acquired thrombophilic status and the need of an effective primary and secondary prophylaxis. A better understanding of genetic factors involved in the etiology of cerebral venous thrombosis will allow elucidation of the factors that influence its evolution, and will provide new paths for the prevention of cerebral venous thrombosis and new therapeutic means.

BENIGN BREAST LESIONS WITH IMAGISTIC FEATURES SUSPICIOUS FOR MALIGNANCY

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Introduction: The purpose is to emphasize the importance of imaging in detection and diagnosis of suspicious breast lesions. **Methods:** We present 2 cases of young patients aged 42 and 45 years old with clinical occult breast lesions but with suspicious malignant features on both mammography and sonography, classified as BI-RADS (Breast Imaging Reporting and Data System) categories 4 and 5. Multiple lesions were seen in one case. Mammography, sonography, clinical and pathology reports were reviewed. **Results:** Mammography and sonography both identified spiculated lesions ≤10 mm. In both reported cases radial scars were diagnosed: one histologically benign and the other with associated tubular carcinoma histologic grade 1. **Conclusions:** Some of benign breast lesions such as radial scar can present malignant imagistic features and may have a high risk of developing breast cancer. Preoperative localization and complete surgical excision is the best option in order to establish the correct diagnosis.

Keywords: breast tumor, imaging, pathology

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GENDER DIFFERENCES IN DEPRESSION AT PRIMARY CARE SERVICES

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According to the statistics of World Health Organization annually 100 million people develop depression. Among the patients in primary care an estimated of 10 per cent is affected. In 1990 depression was the fourth on the list of illnesses causing lack of work and different problems for society. It seems that after 2020 it will be the first one. These surveys have proved that a considerable proportion of the depressed persons don't visit a doctor because they do not consider their state an illness and attribute the disorders to mere exhaustion or outer negative experiences. The aim of our research is to study the hidden depression of patients in primary care system. The investigation was made between 1 September–31 December 2010 in the family medicine consulting room in Chibed village,

Mures county. Using Beck's scale with 24 items for people who have been clinically diagnosed, scores from 0 to 9 represent minimal depressive symptoms, scores of 10 to 16 indicate mild depression, scores of 17 to 29 indicate moderate depression and scores of 30 to 63 indicate severe depression. The total number of the sample was 386 patients. It was shown that 6.99 per cent of these patients suffered in major depression, 51.76 per cent of them were women. It was concluded a significant difference of the intensity of depression after gender distribution. In our study we underline the importance of primary and secondary prevention, the early diagnosis already at the level of the primary health care system.

HELICOBACTER PYLORI INFECTION IN PATIENTS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS

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Introduction: Helicobacter pylori infection affects over 50% of the world's population and its presence is associated, according to various studies, to several digestive diseases, such as acute or chronic gastritis, peptic ulcer – gastric or duodenal and even gastric adenocarcinoma. Data from literature suggest that the frequency of this infection is lower among patients infected with human immunodeficiency virus (HIV) than in the general population, given the larger use of antibiotic by HIV-infected patients for extradigestive indications. Purpose: to compare the frequency of Helicobacter pylori infection among HIV-infected patients versus general population.

Material and method: We have performed a retrospective, analytical, case-control study, over a 3-year period (2009-2011), on a group of 1022 patients investigated in the Laboratory of Infectious Diseases from Clinical District Hospital Mures, regarding the presence of Helicobacter pylori infection, by detecting anti-Helicobacter pylori IgG serum antibodies or Helicobacter pylori stool antigen. Group A was composed by 63 HIV-infected patients and group B by 959 non-HIV infected patients. Data were analyzed by performing a Chi2 test and calculating the Odds Ratio (OR) with the help of GraphPad statistical program. **Results:** The two groups were comparable from the point of view of gender and environment distribution, with differences regarding the age – the HIV infected patients had an average age of 21 years, with a median of 20 years, compared to the group of non-HIV infected patients, who had an average age of 43 years and a median of 45 years, differences which can be explained by the particularities of HIV infection in our country. The average number of CD4 T-cells in group A was 353/μl, with a median of 297/μl, and the average HIV serum viral load was 85405 c/ml, with a median of 7440 c/ml. Helicobacter pylori infection was encountered in 57.14% of HIV-infected patients and in 69.03% of those not infected with HIV, which resulted in a statistically significant negative association between Helicobacter pylori and HIV infections, with $p=0.0585 < \alpha=0.05$ and $OR=0.5928$. **Conclusions:** The frequency of Helicobacter pylori infection in our study was lower among the HIV-infected patients than in the general population, a result which is concordant with data from literature.

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CATHETER RELATED SEPSIS – CLINICAL, ETIOLOGICAL AND THERAPEUTIC FEATURES

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Introduction: Using peripheral and central venous catheter represents the main source for the development of the catheter related bloodstream infections, especially in clinical, immune suppressed patients. **Objectives:** The evaluation of the etiological, clinical, therapeutically and evolutionary parameters in the patients diagnosed with catheter related sepsis. **Material and methods:** We have conducted a retrospective study that involved 72 patients hospitalized in the Infectious Diseases Clinic I and the Cardiovascular Diseases and Transplant Center, over a period of 2 years (01.01.2009-31.12.2010). The incidence of severe sepsis, the risk factors, etiological agents and their chemosensitivity have been closely examined. Sepsis diagnosis was certified by identifying etiological agents with the help of BACKTALERT and VITEK automatic systems. Another method used for the identification of the responsible microorganism was the quantitative culture from the central catheter. **Results:** The age of patients ranged from 2 months to 72. It was noted a predominance of males, 62%, compared to females, 38%. Regarding the risk factors, the following were involved: newborns surgically treated for congenital heart malformations and chronic patients (cirrhosis, cancer, diabetes, etc.). The etiological agents identified from blood cultures, central venous catheter (CVC) and peripheral venous catheter (PVC) were the following: Staphylococcus epidermidis – 30 patients (42%), Staphylococcus coagulase-negative – 13 patients (18%), Staphylococcus aureus – 12 patients (17%), Pseudomonas aeruginosa – 5 patients (7%), Enterococcus spp, Acinetobacter baumannii, Serattia spp and Candida spp, each of them 3 patients (4%). **Conclusions:** The incidence of the catheter related sepsis was higher at extreme ages, children (25%), elderly persons (62.5%). The gram positive bacteria had higher incidence compared to gram negative bacteria and respectively fungi. Central venous catheters placed into jugular vein were the most involved in the colonization and in the developing of systemic infection.

Unfavourable evolution of sepsis, respectively the incidence of death was 12.5% of cases, significantly higher in the elder population compared to the rest of the patients.

THE OCCURRENCE OF RASMUSSEN'S ENCEPHALITIS IN A DIAGNOSED CASE OF MULTIPLE SCLEROSIS

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A small number of reports have documented coexisting cerebral pathologic entities in patients with Rasmussen's encephalitis. We present the case of an adult patient with multiple sclerosis (diagnosed since 24 years old) who had at the age of 37 her first refractory seizures followed by right hemiparesis and development of focal status epilepticus 3 weeks after onset. The neurovascular examination was negative at that time. Repeated magnetic resonance brain imaging revealed beside typical MS lesions, signal changes within the entire left hemisphere followed by progressive asymmetric atrophy of the cerebral hemispheres, most notably within the left occipital and parietal lobes. Even Rasmussen's encephalitis is a diagnosis of exclusion the information obtained from neuroimaging studies in combination with the clinical course should suggest this disorder. We hope that the addition of this patient to the small but growing literature on dual pathology in Rasmussen's encephalitis may help shed some light on the etiology of this disease. Both these entities could have a common etiology of viral- or autoimmune-mediated process, but no definite conclusion can be formulated with all the literature available at the moment.

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OPPORTUNISTIC INFECTIONS OF THE CENTRAL NERVOUS SYSTEM IN HIV-INFECTED PATIENTS

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Purpose: to study the clinical, biological and evolutive features of the opportunistic infections of the central nervous system (OI-CNS) in immunosuppressed patients infected with human immunodeficiency virus (HIV). **Material and method:** We performed a descriptive, cross-sectional, retrospective study on a group of 40 HIV-infected patients, with an average age of 20 years, 58% males, admitted to the Infectious Diseases Clinic I from Tg-Mureş, during 2006–2010, with the diagnosis of cryptococcal / tuberculous meningoencephalitis, cerebral toxoplasmosis. We evaluated the following aspects: demographic data, clinical and biological features, the degree of immune suppression, the evolution under the available etiologic therapy. **Results:** 40 cases, 11% of all patients monitored in Mureş Regional Center, have developed OI-CNS, with an average value of HIV viral load 554376 c/µl, 95% patients had a number of CD4 T-cells (LTCD4) < 200/µl, with an average value of LTCD4 of 63/µl (4-332/µl). The etiology of OI-CNS was cryptococcal – 24 cases, tuberculosis – 6 cases, mixed – tuberculous and fungal in 3 cases, cerebral toxoplasmosis – 7 cases. In 7 cases, OI-CNS was the first manifestation of HIV infection. Out of 33 patients, 26 were not under antiretroviral (ARV) therapy. The most frequent symptoms were: fever, headache, vomiting, focal neurological signs. In 35% cases, the examination of the cerebro-spinal fluid (CSF) did not reveal biochemical or cellular alterations. Computed Tomography / Magnetic Resonance Imaging examinations were quasi-normal in 96.29% cryptococcal meningitis and in 77.77% tuberculous meningitis and revealed space-occupying lesions in 100% cases of cerebral toxoplasmosis. The certitude diagnosis was established based on the detection of germs by microscopical examination, cultures, serological and imaging examinations. 13 deaths were registered, out of which 5 with Cryptococcus neoformans-Mycobacterium tuberculosis co-infection. **Conclusions.** 11% of all HIV-infected patients monitored in our clinic developed OI-CNS of well-documented etiology. In 7 cases, OI-CNS was the first manifestation of HIV infection. The demographic data of the studied group are concordant to the general data of the Romanian cohort. Cryptococcal etiology was dominant. 95% patients were severely immunosuppressed. Out of the 33 patients previously diagnosed with HIV, 26 were not under ARV therapy. Clinical findings were usually poor, CSF alterations lacked in more than 1/3 cases. Imaging investigations were useful in 100% cases of cerebral toxoplasmosis. Poor outcome was reflected by 33% mortality, under the available therapy. The lack of other etiologies of OI-CNS was due to the lack of diagnostic possibilities.

MCCUNE-ALBRIGHT SYNDROME

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McCune-Albright syndrome (MAS) is a rare, sporadic disease caused by a post-zygotic mutation of the gene *GNAS*, which is involved in G-protein signaling. This mutation, often a mosaicism, prevents down-regulation of cAMP signaling. The predominant features of MAS occur in 3 areas: the skeleton, the skin and the endocrine system. The phenotypic expression is highly variable. The syndrome was initially defined by the triad of precocious puberty, café-au-lait skin spots and polyostotic fibrous dysplasia. This pathological condition may also be associated with autonomous hyperfunction of other endocrine tissues, involvement of non-endocrine tissues and renal phosphate wasting. Diagnosis of MAS is usually established on clinical grounds. We are presenting the case of a 34 years old woman, addressed to our department in January 2011 for weight loss, dyspnea, knee pains, shoulder pains, headache. Her personal pathological history started early. At 3 years old she had her first atraumatic tibial fracture. During her childhood she suffered multiple fractures of long bones viciously consolidated. She was diagnosed with precocious puberty at the age of five, but no treatment was initiated at that time. During the clinical examination we found a short stature woman (147 cm, 47 Kg, BMI- 21,75 Kg/m²) with many bones deformities, left leg with 10 cm shorter than the right one, scoliosis, multiple postsurgical skin scars but no “café-au-lait” spots could be found. During hospitalization in our department she was diagnosed with polynodular goiter and a toxic thyroid adenoma on Tc 99 pertechnetate scintigraphy. The evaluation of phospho-calcic metabolism showed normocalcemia, normal PTH with hypophosphatemia and hyperphosphaturia. Regarding the bone abnormalities: the bones X-rays and bone scintigraphy results were suggestive for *polyostotic fibrous dysplasia*. A Methimazol treatment was initiated, with favorable evolution during the next months. She was also treated with alendronic acid for the polyostotic fibrous dysplasia. On cranio-cerebral CT a 3 mm pituitary microadenoma was described, with no clinical or biological signs of hormonal excess. Follow-up for other endocrinopathies is required. MAS is rarely associated with bone and thyroidian malignancies. Malignant transformation of fibrous dysplasia lesions occurs in probably less than 1% MAS patients.

BIOLOGICAL MONITORING AS PROFICIENT ASSESSMENT METHOD IN CHRONIC EXPOSURE TO IRRITATING GASES AND VAPORS

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Air pollution and its adverse health effect represent a global issue. Long term or permanent exposure at low doses of toxic material may increase the number of new appeared severe respiratory diseases and may aggravate most of the existing chronic cases. In the present study, the main toxic aerosols released by the greatest chemical factory in Transylvania were analyzed and their health impacts were measured. We have used in our trial biologic monitoring in 1800 employees from a chemical factory. In the same time, we have noticed environmental determination of air quality and also, we have checked the health status of general population around the studied factory: a 100 cases, through the GP's surgeries and other 100 cases from a nonchemical factory. In this factory there are also pneumotrop harms. The results of our study give useful informations regarding pollution-medical condition correlation.

SURGERY I, II, CARDIOVASCULAR SURGERY, INTENSIVE THERAPY

THE USE OF TRUEVIEW VIDEOLARYNGOSCOPY IN OPERATING ROOM: FIRST RESULTS

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Background: A difficult airway is defined as the clinical situation in which the anesthesiologist experiences difficulty with face mask ventilation of the upper airway, difficulty with tracheal intubations, or both. The videolaryngoscopy technique is successfully used worldwide by the Emergency and Anesthesia Intensive Therapy Departments especially for potentially difficult airways. **Objectives:** To familiarize with the use and evaluate the success rate of TrueView videolaryngoscopy technique for orotracheal intubation in the operating room. **Materials and methods:** We ran a large scale study including all patients submitted to surgery (general and plastic surgery), during two weeks in October and November of 2011. In this period we evaluated 49 intubations with videolaryngoscopy aged between 4 weeks and 87 years old. During the study we included 3 patients transferred from other hospitals due to unsuccessful orotracheal intubation. We filled out a data sheet, which include age, respiratory and cardiac pathologies, body mass index (BMI). Each patient underwent a thoughtful assessment of the upper airways as to predict the difficult intubation such as Mallampati score, Cormack grade, thyromental distance, cervical pathologies. We measured the required intubations time, variations in oxygen saturation value, blood pressure and pulse before and after the intubations. **Results:** The rate of successful first-attempt intubations was 95,91%. We had 6 patients with Mallampati and Cormack score of 4, which we considered as difficult airway with a first-attempt intubation rate of 83,33%. The statistical analysis of Mallampati and Cormack score showed a significant correlation between these two scores ($p < 0,0001$), still we could not identify any correlation with the BMI or thyromental distance. The mean intubation time was 31.76 seconds with minimum of 11 and maximum of 81 seconds. One patient exhibited significant desaturation of 74% after intubation. **Discussions:** The primary aim of using the True View Video Laryngoscope is to manage the difficult airway. This fact was proved by our study, we successfully intubate using videolaryngoscopy 3 patients considered impossible to manage by direct laryngoscopy in other departments. Other studies emphasize the importance of videolaryngoscopy in the emergency department, with higher rate of the successful first-attempts for this technique. We didn't compare yet the videolaryngoscopy with direct laryngoscopy, this study being in progress. Some authors consider that videolaryngoscopy is more than useful also for nasotracheal intubation. They conclude that this method facilitates more than direct laryngoscopy the nasotracheal intubation of the adult with normal airways. **Conclusions:** The TrueView videolaryngoscopy is a modern alternative technique for the management of difficult airways. It appears to be needed in any university hospital in order to ensure a safe outcome of the difficult to be intubated patients.

DOES GENERAL ANESTHESIA CAUSE COGNITIVE DYSFUNCTION?

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Introductions: After general anesthesia, patients frequently complain memory loss and lack of concentrations. These symptoms are generally reported as "postoperative cognitive decline" (POCD) and may affect patient's daily activities. The aim of our study was to evaluate the incidence and risk factors for postoperative cognitive dysfunction after general anesthesia for non-cardiac surgery. **Material and Methods:** We studied 30 patients scheduled for general anesthesia in surgical and gynecological wards. Patients with focal neurological impairments were excluded. Cognitive function was evaluated in all patients before and 4-6 days after surgery, using the "Mini Mental State Examination" protocol, elaborated by Folstein et al., and adapted to our conditions. We noted also patients age, sex, type and length of surgical procedure, associated diseases, anesthetic drugs used, intraoperative and postoperative variables such as: blood pressure, body temperature, blood loss, fluid and electrolyte balance, metabolic alterations, respiratory variables. **Results:** The mean age of patients included in our study was 59±12 years, 16 were men, 14 women, 28 patients had balanced general anesthesia, 2 total intravenous anesthesia. None of them had postoperative neurological dysfunction. We observed alteration of concentration capacity in 27% of patients, associated with alteration in short term memory function in 6 patients and fine motor skills in 12 cases. These alterations were more frequently in elder patients, in those with renal or hepatic dysfunction and electrolyte imbalances. There were no relationship between different type of general anesthesia and cognitive decline in the studied patients. **Conclusions:** General anesthesia could affect the cognitive function, especially short term memory and concentration capacity in the first postoperative days, but this decline usually not affect the patients daily activity. Further studies are necessary to determine the length of this postoperative cognitive decline, with at least six month follow up of the patients.

BLOOD GAS ANALYSIS: A RAPID METHOD FOR INTRA-OPERATIVE ASSESSMENT OF GRAFT PERMEABILITY

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Introduction: Arterial revascularization procedures with surgical grafting have the role of reestablishing or supplementing the blood flow in the ischemic limbs or parts of the body. The objective of this study is to evaluate the graft permeability by determining blood gas values and ionic balance before and after peripheral revascularization. **Material and methods:** The study included a number of 60 patients with stage III-IV Fontaine chronic arterial peripheral disease. The patients were admitted to the Surgical Clinic No. I from the Targu Mures Emergency County Hospital during 1st of October 2007 and 1st of August 2011. These patients were submitted to peripheral surgical revascularization procedures. We have determined the intra-operative PaO₂, PaCO₂, K⁺, Na⁺ and Ca²⁺ values before and after revascularization, by directly drawing blood from the artery and vein adjacent to the ischemic territory. **Results:** The statistical analysis of the obtained results was done with SPSS version 19, Graph Pad Demo and Graph Pad Prism. For mono-variant analysis we used T test and for independent variables the Mann-Whitney test and ANOVA test. **Results:** The results are statistically significant with a p value below 0.05. Arterial PaO₂ and PaCO₂ values before and after revascularization were not considered statistically significant. PvO₂ and PvCO₂ as well as venous K⁺ values from the vein adjacent to the grafted artery showed significant changes immediately after surgical revascularization. Variations in Ca²⁺ and lactate values were not considered statistically significant after analysis. **Conclusions:** Intra-operative venous blood gas analysis drawn from the grafted limb is both fast and efficient for evaluation of the graft permeability. The variations in intra-operative serum K⁺ can be used as an indirect appreciation method for the assessment of the blood flow after grafting.

INTRAOPERATIVE RISK FACTORS FOR POSTOPERATIVE RENAL DYSFUNCTION IN CARDIAC SURGERY

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Introduction: Renal dysfunction is a relatively common complication of cardiac surgery, its development significantly increases postoperative morbidity and mortality. **Material and methods:** We conducted a prospective study at Cardiovascular Surgery Târgu Mureş, from 01.10.2010 to 15.12.2010, to determine the intraoperative risk factors for postoperative renal dysfunction. **Results:** During this period 89 patients underwent cardiac surgery, of which 28 (31%) developed renal injury. Renal dysfunction developed more frequently in patients with complex surgery with prolonged cardiopulmonary bypass ($p < 0.05$), in emergencies, in patients with intraoperative hemodynamic instability. Other intraoperative factors, such as body temperature lower than 33 °C ($p = 0.0199$) and hemoglobin lower than 7 g/dl ($p = 0.0260$), significantly influenced the development of renal dysfunction. **Conclusions:** Cardiac surgery is associated with a relatively high incidence of renal dysfunction. Risk factors for this syndrome are varied and involve hemodynamic and inflammatory changes, but factors such as the body temperature and hemoglobin level during extracorporeal circulation could have a significant contribution.

LAPAROSCOPIC GASTRIC PLICATION FOR MORBID OBESITY TREATMENT. CASE REPORT

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Introduction: In the treatment of morbid obesity surgical procedures are indicated in patients with body mass index above 40 and associated comorbidities. Miniinvasive techniques have significantly changed the surgical treatment of morbid obesity. The gastric plication by laparoscopic approach is a restrictive procedure and involves invagination of greater curvature in its lumen, thus greatly reducing the reservoir function. **Material and methods:** diabetic and hypertensive patient with body mass index greater than 60. The laparoscopic longitudinally gastric plication was made biplane from Hiss angle until to the pilor. Postoperativ in the first day was performed an esogastric passage radiologic control and on the third day the patient was discharged. **Results:** Weight loss in two months was 60 kg, significantly improving the quality of life, symptoms and comorbidities therapeutic needs. **Conclusions:** gastric plication is an alternative treatment of morbid obesity by laparoscopic approach, having the advantage that it leaves no foreign bodies intraperitoneally with reduced costs and complications rates.

Keywords: morbid obesity, gastric plication

EMERGENCY TREATMENT OF INCISIONAL HERNIAS

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Introduction: Incisional hernia are an important complication after abdominal surgical procedures, with an occurring incidence of 11-23% after laparotomies. Out of approximately two million laparotomies performed in the USA, a percentage of 2-11% develop incisional hernias as a complication. Neglecting to treat these translates in to growth in volume, enlargement of the abdominal wall defect, complications including occlusions and perforations. These situations need emergency surgical interventions. **Aim:** This study follows the occurring incidence of emergency surgical procedures needed for abdominal wall defect correction, the type of procedure and the incidence of immediate complications. **Material and methods:** It is a retrospective cohort study conducted on a lot of 106 patients who had emergency surgical procedures for complicated incisional hernias. The patients were admitted to the Surgical Clinic No. 1 during 1st of January 2006 and 31st of December 2010, (5 years). The study data was obtained from the analysis of the admission forms by extracting the necessary parameters: age, sex, admission period, type of surgical procedure, size of the incisional hernias, associated surgical procedures and complications. **Results:** 31 out of the 106 patients (29.24%) needed abdominal wall repair with polypropylene mesh for consolidation or substitution, 75 patients (70.5%) had monoplane or Sapiejko Piccoli abdominal correction, 15 patients (14.15%) were submitted to intestinal resection. **Conclusions:** The results of the study show that emergency abdominal wall repairs of incisional hernias are a challenge for the surgical team. The procedures involve the opening of the digestive system, the presence of infection, thus limiting the usage of prosthetic material and increasing the risk of immediate post-operative complications.

THE RELATIONSHIP BETWEEN BREAST CANCER AND FIBROCYSTIC MASTOPATHY AND THE EXPRESSION OF THE HORMONAL RECEPTORS

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Breast cancer is the most widely spread type of malign tumours among female patients. Fibrocystic breast conditions could be viewed as a precursor for future *breast cancer*. The difficult diagnosis in differentiating between *benign proliferative breast lesions* and breast carcinoma led to the idea that there could be a multi-stage process: the cancer does not develop on the mammary epithelium and there are a number of stages required for the development of cancer. The study is based on a *histopathological analysis* of a group of 187 patients experiencing breast carcinoma and fibrocystic breast condition. Subsequently, a subset of 66 women experiencing breast carcinoma and having subcutaneous fibrocystic mastopathy has been identified and closely analyzed for the most common histopathological types. The cases (*sectorectomy* or *mastectomy* with *axillary exploration*) were classified under the World Health Organization's norms (*Scarff-Bloom-Richardson* histological grading system- *SBR*). The *immunohistochemical* technique using monoclonal antibodies estrogen receptors and progesterone receptors (Novocastra), with a DAKO LSAB.2 kit. An immunohistochemical reaction has been used to identify hormonal receptors based on the positive response of incipient carcinoma to hormone therapy. Ductal carcinoma was the histological type most commonly associated with fibrocystic mastopathy (in 75% of the cases). Ductal carcinoma in situ was present in 24% of the cases and the invasive ductal carcinoma in 51% of the cases. Lobular carcinoma in situ and invasive lobular carcinoma was found only in 20% of the cases. Hormone receptors level in the most aggressive form of carcinoma (invasive ductal carcinoma SBR III grade) is very low. It is inversely proportional with aggressive level with a weak or absent expression in 80% of the cases. The ratio of tumour aggressiveness to hormone receptor was reversed in the case of invasive ductal carcinoma SBR I grade. Only in 27% of the cases, hormone receptors are absent or have weak expression in invasive ductal carcinoma SBR I grade. There is no significant difference among the existence of the three grades of SBR, with SBR grade I present in 18% of the cases, SBR II grade present in 18% and SBR III grade in 15%. The present data, similar to those in the literature shows a weak expression of the hormonal receptors in the invasive ductal carcinoma which makes the endocrine adjuvant therapy inefficient in invasive ductal carcinoma with increased aggressiveness level. We cannot conclude that there is a relationship between tumour aggressiveness and the presence or absence of fibrocystic mastopathy

Keywords: ductal and lobular carcinoma, immunohistochemical technique, hormone receptors.

COMPLEX SURGICAL MANAGEMENT IN FALLOT TETRALOGY

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The Tetralogy of Fallot is a congenital heart defect which classically presents four anatomical components: ventricular septal defect (VSD), pulmonary stenosis, overriding septal aorta and right ventricular hypertrophy. It is the most common cyanotic heart defect and the most common cause of “blue baby” syndrome. Tetralogy of Fallot occurs in approximately 3 to 6 per 10,000 births and represents 5–7% of congenital heart defects. Some babies have a severe degree of obstruction to blood flow to the lung, while others have less narrowing and therefore only mild obstruction. The degree of obstruction generally becomes worse with time. The thesis presents the experience of “Clinica Chirurgie Cardiovasculara Adulti si Copii “ Târgu Mureş from 2004 to 2011, while there were 147 cases with tetralogy of Fallot: 105(71%) cases were primary complete repair and in 42(28%) cases we made two stage complete repair. The uniqueness of the technical surgery is in the correction of the pulmonary stenosis with a pericardium patch and monocusp valve of Gore-Tex. Surgery is now often carried out in infants under 1 year of age or younger with a <5% perioperative mortality. Actual survival for untreated tetralogy of Fallot is approximately 75% after the first year of life, 60% by four years, 30% by ten years, and 5% by 40 years. Patients with repaired tetralogy of Fallot have the potential to lead normal lives with continued excellent cardiac function.

ARTERIAL SWITCH PROCEDURE IN TÂRGU MUREŞ PEDIATRIC CARDIOVASCULAR CENTER

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Represents 1% from total cardiac congenital disease. TGA means that pulmonary and systemic circulation is in parallel; in the pulmonary circulation, the O₂ saturated blood circulates through the lung; in the body, the blood is de-saturated. To increase the supply of O₂ in the brain and organs, a shunt must be placed, which leads to the mixing of blood. It is therefore important to assess the shunt flow of the ductus arteriosus, the atria and at the level of the ventricles. Initially the newborn must be complex monitored and resuscitated hydro-electrically, cardi-respiratory, metabolic, infectious through maneuvers called the newborn resuscitation. The ideal operative moment is at 7 and 21 days from birth. The scientific paper presents the experience of “Clinica Chirurgie Cardiovasculara Adulti si Copii Târgu Mureş” from 2005 to 2011, while there were 104 cases diagnosed with transposition of great vessels; in 77(74%) cases the surgical treatment was represented by arterial switch. The arterial switch procedure has recently become the preferred method of repair for patients with transposition of the great arteries in the majority of congenital heart centers. Concern regarding the late results in those patients undergoing atrial repairs has stimulated this major change in operative treatment. Although initially high, the current operative mortality has been reduced substantially. The precise methods of coronary artery transfer, as well as aortic and pulmonary artery reconstruction have been refined to allow the routine performance of direct arterial repair within the first few weeks of life with low risk and excellent late survival.

PEDIATRIC HEART TRANSPLANTATION- CASE PRESENTATION OF THE NATIONAL FIRST PROCEDURE

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A heart transplant is an operation performed to replace a diseased heart with a healthy one from another person. Children with certain types of cardiomyopathy and end-stage or inoperable congenital heart disease may require pediatric heart transplantation. The challenge of organ transplantation is to maximize survival and improve the child's quality of life. **We present our clinical experience in pediatric heart transplantation; is about the first pediatric heart transplantation from Romania, in February 2011. In “Clinica Chirurgie Cardiovasculara Adulti si Copii “ Târgu Mureş, our technique in heart transplantation is the orthotopic bicaval technique with the primary anastomosis of aorta, an original procedure.** Heart transplantation in infants and children is now accepted therapy. Remains an important problem the low number of donors and the short period of survival until the transplantation procedure. Berlin Heart, ECMO and IABP represents “bridge to transplantation” and these devices changed the rate of survival. Most programs now report that more than 70% of their recipients survive at least 5 years. Survival in excess of 20 years after pediatric heart transplantation has been achieved. However, although an additional 5 years of life is important for all, the goal of pediatric heart transplantation is to provide as much of a normal life span for these children as possible.

OCCLUSIVE RIGHT COLON METASTASIS FROM BREAST CANCER: A CLINICAL CASE REPORT

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Breast cancer remains a significant cause of morbidity and mortality in the female population. Metastatic involvement of the extrahepatic digestive system is rare. Autopsycases related in literature showed that 16% of patients with breast cancer have gastrointestinal metastases. We report the case of a 56-years old woman, who presented a right bowel obstruction due to a metastasis from breast cancer. The primary tumor was detected in the same presentation (intestinal occlusion in emergency). That's why we performed a right hemicolectomy and left radical modified mastectomy (Madden's operation) at same time. Postoperative evolution was favorable, chemotherapy completed the treatment. A multicentric mixt carcinoma (infiltrative and ductal) was the hystopatological type of the primary mamary neoplasia.

Keywords: colon metastasis, breast cancer.

REMOTE ENDARTERECTOMY USING A RING-DISSECTOR

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Introduction: Endarterectomy is a vascular surgical procedure used to remove the atheromatous plaque, carried out by separating the plaque from the arterial wall. Newer endarterectomy methods have been developed, involving the use of the endoRe devices. **Material and methods:** We present 5 recent cases from our clinic, on which we performed endarterectomy using a ring-dissector device (the LeMaitre Vollmar Ring-Dissector) to remove long segment occlusions (type B and C femoral popliteal lesions in TASC II classification) **Results:** patients benefit from this procedure, especially regarding the decreased incisions, faster healing and the preservation of both the native arteries for as long as possible, as well as of the side collaterals upon removal of atheroma case.

TOTAL AND SUBTOTAL COLECTOMY INDICATIONS AND POSTOPERATIVE RESULTS

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Introduction: Favorable postoperative results have adjusted the indications for total or subtotal colectomy to more than primary colic disease. **Material and methods:** In our series we have made a retrospective study of 136 patients who had undergone total or subtotal colectomy during their admission, between 1.01.1968–31.12.2010. **Results:** In 107 cases (78.67%) we performed subtotal colectomy and ileo-sigmoid anastomosis (for colonic cancer, intestinal infarction, severe acute pancreatitis, plastic peritonitis, and retroperitoneal tumour). In 23 cases (16.91%) we undertook total colectomy and ileo-rectal anastomosis (for megadolicolon, polyposis, colo-rectal cancer and colonic diverticulosis). Total proctocolectomy with ileo-anal anastomosis has been undertaken in 6 patients (4.41%) with ulcerative colitis, the main indication for total colectomy. **Conclusions:** Total and subtotal colectomy are not only indicated in benign and malignant colic disorders (ulcerative colitis, colic polyposis, colonic and colorectal cancer) but also in some other extra colonic diseases such as severe acute pancreatitis, retroperitoneal tumors, intestinal infarction. As they have better postoperative results than other operations (serial procedures), total and subtotal colectomies have some advantages: diminished leak complications, lower vital and operative risk.

Keywords: total colectomy, subtotal colectomy

EMERGENCY SURGICAL PROCEDURES IN GASTRODUODENAL PATHOLOGY

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Introduction: Although gastroduodenal diseases benefit of a wide range of early diagnostic, monitoring and conservative treatment possibilities, and most surgical procedures in this domain are elective, there is a number of patients who need immediate emergency surgical treatment. This pathology targets especially perforations, stenoses and hemorrhagic complications of a neglected gastroduodenal disease. **Aim:** This study analyses gastroduodenal diseases by following their occurring incidence, pathogenesis, type of surgical treatment needed and immediate postoperative outcome with complications and mortality. **Material and methods:** We conducted a retrospective cohort study on a lot of 228 patients who benefited of surgical interventions for gastroduodenal disease. The patients were admitted to the Surgical Clinic No. 1 during 1st of January 2006 and 31st of December 2010, (5 years). The study data was obtained from the analysis of the admission forms by extracting the necessary parameters: age, sex, admission period, type of surgical procedure, associated surgical procedures, preoperative status, blood type and transfused units of blood, preoperative haemostatic measures, ulcer location, preoperative digestive endoscopy, the presence of pneumoperitoneum in relation to perforation and immediate postoperative complications. **Results:** 112 patients (49.12%) out of the study lot presented with perforation and generalized peritonitis and benefited of classic or laparoscopic ulcer sutures and epiploonoplasty. 52 patients (22.8%) had gastric resections due to stenosis, perforations, tumors or hemorrhagic complications. 28 patients (12.28%) suffered 2/3 gastric resection, 10 patients (4.38%) underwent bulbantrectomy, while 12 patients (5.26%) were operated on with total gastrectomy. 60 patients suffered a gastrotomy, vascular fistula sutures, gastroraphy, vagotomy and pyloroplasty. The global death rate was 10%. **Conclusions:** The main pathogenesis of gastroduodenal disease in emergency surgery continues to be complications given by perforated ulcers. Although hemorrhagic complications show a significant decrease in occurring incidence, in some cases conservative and endoscopic therapy can not control the bleeding.

INJURIES OF HOLLOW ORGANS

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Injuries of hollow organs (stomach, duodenum, small intestine and rectum) still represents a diagnostic problem in a politraumatized patients, in conditions of lack of clinical and paraclinical signs suggestive for this type of injury. We retrospectively analyzed a group of 890 patients with abdominal trauma admitted and treated during 2000–2010 in the Surgical Clinic I Targu Mures. Of all injuries, 37 cases (4.16%) were registered with hollow organ injuries mainly of small bowel lesions (37.84%) and lesions of the colon (32, 43%) followed by stomach (13.51%) and equally the duodenum and rectum (8.11%). Hollow organs lesions were not single, all associated injuries of other organs with a higher ISS obviously in lesions of the rectum (ISS = 26.6) and duodenum (ISS = 25). The difficulty of diagnosis, the complex mechanism of production, with consecutive increased mortality (5.41% of 37 cases) and morbidity (wound suppuration of 8.11%) requires a careful analysis in front of politraumatized patient. Intra-abdominal injuries of hollow organs are difficult to diagnose in emergency, represents a challenge for surgical teams in terms of establishing a diagnosis and appropriate treatment.

TYPES OF ESOPHAGOPLASTY IN ESOPHAGEAL NEOPLASIA

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The paper represents a retrospective study about the immediate post surgery results depending on the various esophageal resection and plasties procedures. The precocious post surgery evolution is followed for the hospitalised and surgical treated patients for esophageal neoplasm, in the Surgical Clinic I, Targu Mures, between January the 1st 1992 and December the 31st 2010, using the clinical observation papers, the surgical protocols and the histopathological bulletins. Out of the 399 cases of patients with esophageal injuries with surgical indications, 345 (86.5%) cases were malignant. The localization of the neoplasm was mostly in the medium third and the eso-cardial junction (70%). The most common histological type was the keratinized or unkeratinized epiderma carcinoma. Orringer-Akiyama operation was preferred, and the stomach plasties was used in most cases. The post-operative complications led to a hospitalised mortality in according with literature data. Stripping esophagectomy and esophagoplasty with gastric tube are preferred lately in the well selected surgical cases.

Keywords: esophagoplasty, esophageal neoplasia, esophagectomy

ADRENALECTOMY – THE TG. MUREȘ 1ST SURGICAL CLINIC EXPERIENCE

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Background: Modern trends of minimally invasive surgery manifests also in the adrenal gland surgery. Laparoscopic approach of adrenal gland makes its place in recent years along with classical surgical procedures as an expression of modern technical progress. Therefore, classical adrenalectomy involving large incisions, with extensive periglandulare dissection and control of vascular times can be successfully replaced by laparoscopic approach, with all the advantages of minimally invasive procedures, even if addressed to an organ hard to reach due to its retroperitoneal location. **Material and methods:** We conducted a retrospective study, between 2000 - 2011 using the database provided by the County Emergency Hospital's Ist Surgical Clinic in Tg. Mures, including patient's medical forms, operatory protocols, imagistic protocol, laboratory and histopathological results of patients with the adrenal gland pathology. The following parameters were analyzed: sex, age, indication of surgical treatment, histopathological diagnosis, mortality, morbidity, the period of hospitalization. **Results:** Adrenalectomy was performed on 31 patients between 2000–2011. Three of them underwent laparoscopic adrenalectomy. We found another 3 adrenal inoperable tumors (local extension, with major vessels invasion, lung or liver metastases). The studied group included 19 men and 12 women, aged between 20 and 71, with a mean age of 51.74 years. In 28 cases was performed a classical adrenalectomy: 14 addressed to the right gland, 13 to the left one and 1 bilateral adrenalectomy. All laparoscopic adrenalectomy were performed for left adrenal gland tumors. The average postoperative hospital care was 8.07 days for classical procedures and 4 days for the minimally invasive procedures. There have been two deaths in the studied group: one patient with a giant right adrenal tumor penetrating the IVC, with virus C cirrhosis, who underwent a classical right adrenalectomy and a lateral resection of IVC and a patient who underwent laparoscopic left suprarenalectomy for adrenal metastasis of lung adenocarcinoma associated with the left upper lobe resection. **Conclusions:** We conclude that laparoscopic adrenalectomy, although its higher learning curve is a viable alternative to the classical approach, showing clear advantages by easy approach of the adrenal gland, accurate dissection, the lack of large incisions resulting reduced hospital care time and rapid social reinsertion.

PREVALENCE OF CAROTID DOLICHOARTERIOPATHIES AND THEIR ASSOCIATION WITH CAROTID STENOSIS

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Aim: To evaluate the prevalence of dolichoarterial disease, their characteristics and the possible association with carotid stenosis. **Material and methods:** Between January 1, 2009 and December 31, 2009, they were evaluated the subjects submitted to angiographic examination of carotid arteries. Patient were examined at the Interventional Department of Cardiology I of the County Hospital of Tirgu Mures. In the study were enrolled 43 patients, 35 males and 8 females, aged between 42 and 79 years old. Angiography was performed on extracranial carotid and the reference was made to Weibel and Field's classification for kinking, coiling and tortuosity for the classification of dolichoarterial disease. **Results:** Of 43 patients examined, 25 (58.13%) presented dolichoarterial disease, 20 males (80 %) and 5 females (20%) with a male/female ratio of 4:1. There were 11 patients with bilateral and 13 with unilateral dolichoarteriopathies. Patients with dolichoarteriopathies were older then those without dolichoarteriopathies (64.29 years versus 62.13 years). Tortuosity was present in 12 arteries (33.33%), kinking in 17 arteries (47.22%) and coiling in 7 arteries (19.44%). Carotid stenosis was found in 36 patients (83.72%). Among patients with internal carotid stenosis, dolichoarteriopathies were found in 24 patients (66.66%). 19 dolichoarteriopathies (79.16%) were proximal to the carotid bifurcation, and 5(20.83%) were distal. **Conclusions:** Carotid dolichoarteriopaties are not a rare condition and they can easily be mistaken clinically for an aneurism, a tumor or an abscess. Also, they should be taken into the consideration on the diagnostic procedures for ischemic transitory attacks and/or stroke.

SURGERY III, UROLOGY

THE MULTIMODAL TREATMENT OF STAGHORN STONES

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Introduction: Percutaneous surgery is a safe and effective method in the treatment of coralliform lithiasis. **Objectives:** the analysis of our experience in percutaneous treatment of coralliform lithiasis over a period of 22 years (1988–2010), the percutaneous nephrolithotomy (PCNL), extracorporeal lithotripsy (ESWL) and retrograde rigid ureteroscopy and antegrade rigid ureteroscopy have almost completely replaced open surgery. **Material and method:** From a series of 7215 patients with urolithiasis, 1087 (15.06%) had coralliform lithiasis (7 were children), and of these 17/ 1087 patients had stones bilateral coralliform lithiasis. **Results:** operating time was 115 minutes. The average duration of hospitalisation was 18.1 days. Stone free rate at the end of the intervention was 900/ 1087 (82.79%). We had postoperative complications in 142/1087 patients (13.06%), with 3/ 1087 (0.27%) deaths from haemorrhage (1) and toxic-septic shock (2). **Conclusions:** In order for a successful resolution of coralliform lithiasis by minimally invasive methods it is necessary to have a good knowledge of three-dimensional anatomy of the kidney, well chosen and fairly conducted tracts of the percutaneous nephrostomy (PN), training, experience and good techniques in endoscopy of the kidney and the ureter.

Keywords: coralliform lithiasis, PCNL, ESWL

COMPLICATIONS OF TRANSRECTAL ULTRASOUND-GUIDED PROSTATE BIOPSY (TRUS) – A RETROSPECTIVE STUDY IN 254 CASES IN TG MURES COUNTY HOSPITAL

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Introduction: Transrectal ultrasound-guided prostate biopsy (TRUS) is a screening procedure, easy to perform and widely used in the diagnosis of prostate cancer. It is usually considered a low-risk procedure, although it may be accompanied by different complications, such as disuria, pain/discomfort after biopsy, fever, hematuria, hematospermia, prostatitis, rectal bleeding, urinary retention, urosepsis. **Objectives:** To establish the rate of complications derived from the use of TRUS at our institution. **Methods:** We retrospectively analysed the medical records of 254 patients who underwent six-core TRUS performed in 2010. Indications were elevated serum PSA and/or suspicious digital rectal examination. **Results:** Mean age was 67.7 years; mean prostate volume 42.5 cc; mean total PSA 34.5 ng/ml; In the majority of TRUS (68.22%) we did not find postoperative complications. The predominant complications were minor without sequelae: mild hematuria (12.19%), rectal bleeding (4.77%); urinary retention (3.09%). 9.32% of the patients developed fever and needed antibiotics, prolonged hospitalization. 2.43% of patients developed urosepsis. **Conclusions:** Our rate of complications was similar to that described in the literature. Most of them were minor and did not require immediate intervention, rarely occurred major complications. TRUS is generally a safe, well tolerated diagnostic method.

THE URODYNAMIC CONSEQUENCES OF SURGICAL PROCEDURES FOR STRESS URINARY INCONTINENCE IN WOMEN

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Objectives: To evaluate the obstructive effect of different surgical procedures for stress urinary incontinence by measuring their impact on urinary flow rate (Q_{max}), maximum bladder pressure (P_{vesmax}) and bladder pressure at Q_{max} during micturition. **Material and methods:** We retrospectively analyzed the urodynamic investigations of patients for which we had available preoperative and postoperative data at intervals of 6-12 months. The analyzed procedures were: Burch colposuspension (11 cases), TVT (26 cases), TVT-O (41 cases), and myoblast periurethral injection (4 cases). Significant changes in urine flow were recorded for surgical procedures, except for myoblast injection. Followed variables were postmictional volume (PVR), Q_{max}, P_{ves}, P_{ves} / Q_{max}. Urethral profilometry data obtained were inconsistent with the standard urodynamic evaluation protocol. **Results:** Q_{max} decreased for TVT with an average of 4.9 ml/s (2-7 mL/s at urodynamic control) and a consequent increase in P_{ves} / Q_{max} of 1.8 cm H₂O. For TVT-O we found lower average Q_{max} of 4.1 mL/s and P_{det} / Q_{max} increase was 1.5 cm H₂O. For the group of patients with type Burch colposuspension we recorded an average decrease in Q_{max} of 7.7 mL/s and P_{det} / Q_{max} increase of 8.6 cm H₂O. For patients with myoblasts implant,

changes in Pdet Qmax / Qmax were minimal and statistically insignificant in the context of inclusion criteria, but noticed a trend of minimal change in the urodynamic characteristics, namely, decrease of Qmax with 2.1 mL/s and increase by 0.6 cm H₂O of Pves / Qmax. In terms of clinical impact of these urodynamic described changes, only two patients needed intermittent catheterization for a period of two months, one case of TVT and one Burch colposuspension, the remaining cases are either without PVR or below 100 mL. **Conclusions:** In terms of urodynamic findings observed after surgical procedures for stress urinary incontinence, decrease of Qmax, increase of Pves, and Pves / Qmax, are most strikingly after Burch colposuspension (7.7 mL/s), and less for TVT and TVT-O, otherwise we observed only an adjustment of Qmax and Pves values according to the anatomical principle of the anti incontinence procedure – the creation of BOO, most of them being, unfortunately, non-physiological. It seems that the development of myoblasts implant, (if they will pass the time-proof test) could represent an advance in treating this condition.

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THE ULTIMATE AND GOLD-STANDARD TREATMENT FOR SEVERE URINARY STRESS INCONTINENCE IN MALE PATIENT– THE ARTIFICIAL URINARY SPHINCTER

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Objectives: To describe the artificial urinary sphincter (AUS), their function, technique of implantation, indications, results and complications, and to analyze the utility of the prosthesis in the treatment of stress incontinence in male patients with intrinsic sphincter deficiency. **Methods:** We are stretching out that features presenting the clinical case of 65 years old male patient who became incontinent after open radical prostatectomy. After 6 months of surveillance clinically and urodynamically diagnosis was confirmed and patient was proposed for an AUS implantation. The AMS-800 device with single cuff was used to be implanted by perineal approach. The operation and recovery was uneventful. The assessment of the results and satisfaction was done using an analog visual scale and ICIQ-SF questionnaire. **Discussions & results:** The AMS-800 is the first model available. For over 30 years, physicians worldwide have implanted the device in more than 94,000 men. The results achieved are excellent if the indication is correct and perioperative management is careful and exact. The ideal candidate is one with genuine stress urinary incontinence and normal bladder function, although hyper or hyporeflexia is not an absolute contraindication if corrected before, during or after insertion of the prosthesis. The surgical technique is relatively simple and the only difficulty consists in the choice of the appropriate cuff and reservoir. The complications include urethral atrophy, erosion, infection and bladder instability, are less frequent in men incontinent after prostate surgery, and more frequent in patients with incontinence following pelvic trauma, incontinence due to congenital malformation and those with a neurogenic bladder. The mechanical failures of the prosthesis have diminished with its improved design. **Conclusions:** Today, patients with stress urinary incontinence have more possibilities to recover continence. If incontinence persists after all the available medical and surgical options have been attempted, one possibility still remains: the artificial urinary sphincter.

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NEW METHOD TO PREDICT POSTOPERATIVE COMPLICATIONS: PROTEIN ELECTROPHORESIS BY GEOMETRICAL ELECTROFOCUSING

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Purpose: to evaluate drainage liquid protein electrophoresis as a predictive marker for postoperative complications. Assumption: postoperative drainage liquid has variable protein concentrations which decrease progressively in absence of local complications, therefore the rising of protein fractions postoperative could be a signal for a future complication. **Material and method:** drainage liquid samples at 24 h, 72 h and 5 days obtained from patients operated in 1st Surgery Clinic, Mures Clinic County Hospital, where subject to asses' protein concentration against a sample human serum provided by I.C. Cantacuzino, Bucuresti. Quantitative variations in protein concentrations was asses by 280 nm spectrophotometry and qualitative variations was provided by colorimetric comparison of the protein fractions obtained at electrophoresis by geometrical electro focusing. Results where computer analyzed and graphical transpose. **Results:** electrophoresis identified, in all cases, protein fractions similar with those from reference serum. All protein fractions tempt to decrease in samples obtained from operated patients with normal, uncomplicated postoperative evolution. In case of a complicated evolution (local peritonitis after splenopancreatectomy) protein levels are constantly elevated in all three samples (at 24 h, 72 h and 5 days). **Conclusions:** geometrical electro focusing of serum protein proved to be qualitative efficient, low cost and very

sensible (it detects protein concentrations over 10 mg/dl; normal serum protein concentration is over 7000 mg/dl). This method could be a predictive factor for a local postoperative complication and also a trigger for protein replacements in cases with large amount of drainage liquid losses.

Keywords: postoperative complications, protein electrophoresis, geometrical electro focusing.

LAPAROSCOPIC APPROACH OF RETROPERITONEAL DISEASES IN SURGERY CLINIC I, MURES COUNTY CLINICAL HOSPITAL EXPERIENCE

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Introduction: The retroperitoneum is the source of several surgical conditions which raise issues in early diagnosis and the choice between classical or laparoscopic approach. **Material and method:** We have conducted a retrospective study over a period of two years, during which in our clinic were hospitalized and operated 28 patients with various retroperitoneal diseases. In these patients we followed the type and complexity level of the surgeries, especially postoperative evolution according to classic or laparoscopic surgical approach. **Results:** Of the 28 patients, 18 had different types of primitive retroperitoneal tumors (P.R.T.), 14 malignant tumors and 4 benign tumors. There were 10 patients admitted and operated with non-tumoral retroperitoneal diseases (6 with inflammatory lesions, 2 with uroretroperitoneum and 2 with hemoretroperitoneum). In 5 of the patients, the surgical approach was laparoscopic, 2 of them with tumors and 3 in non-tumoral diseases, both emergencies and scheduled interventions. **Conclusions:** There are many cases in which transperitoneal laparoscopic approach is possible as well for retroperitoneal diseases. Retroperitoneal tumors can be laparoscopically approached especially if they are not large and do not have anatomical relationships with the large retroperitoneal vessels. The postoperative evolution of the patients who suffered laparoscopic surgeries is much better and the healing process is faster in comparison to those who suffered classical surgeries.

PROGNOSTIC FACTORS IN BREAST CANCER

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Introduction: survival in breast cancer is determined by many factors, their influence is different. The aim of the study is to assess the impact on survival of various prognostic factors. **Materials and methods:** We studied a total of 198 cases of histologically confirmed breast cancer patients, and we evaluated the impact of prognostic factors on survival. **Results:** the most important factor influencing survival is the presence of axillary metastasis (p: 0.0001). Other important prognostic factors are: tumor size (p: 0.003), tumor grading (p: 0.0025), N stage (p: 0.0001), lymphovascular invasion (p: 0.0005) and Nottingham Prognostic Index (p: 0.0109). The factors with no impact on survival were: histological type (p: 0.82), number of lymph nodes affected (p: 0.23), tumor necrosis (p: 0.49) and inflammatory infiltration (p: 0.2). **Conclusions:** The most important prognostic factors are: axillary metastasis followed by tumor grading, NPI and lymphovascular invasion.

Keywords: Breast cancer, prognostic factors, survival.

POSTOPERATIVE PERITONEAL ECHINOCOCCOSIS. CASE REPORT

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We review a male patient, L.P., 55 years old, admitted in emergency in our clinic with symptoms of an intestinal obstruction. The medical history reveals an abdominal intervention for hydatid cyst in the right hepatic lobe. Investigations performed certify: a hydatid cyst in the left hepatic lobe, gallbladder lithiasis and a tumor like mass of unknown origin in the right upper abdominal quadrant. Intraoperative we found disseminated peritoneal Echinococcosis from diaphragm to pelvic floor, infected hydatid cyst in left hepatic lobe, gallbladder stones, extensive peritoneal adhesions and an incisional hernia. We performed hepatic total cystopericystectomy, intact endocystectomy without preliminary aspiration for more than 40 peritoneal cysts, cholecystectomy with trans cystic drainage, adhesiolysis, primary tissue approximation for incisional hernia and multiple peritoneal drainage. Postoperatively outcome was impaired by several serious complications: fungal angiocholitis, exudative pericardial effusion in 7th postoperative day and, finally, patient deceased in the 19th day postoperatively.

THE CONTRIBUTION OF ULTRASONOGRAPHY IN RENAL CELL CARCINOMA INCIDENTAL DIAGNOSIS

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Introduction: The ultrasonography represent an imaging way of evaluation highly used in urological patients. Being a simple method, it was used in every patients presented or hospitalized in our Urological Department, during 2005-2010. The aim of this study is to evaluate the importance of this investigation in diagnosis of RCC. **Material&Methods:** We analyzed retrospectively all the patients who underwent an ultrasonography during the presentation or hospitalization in our department. We considered as incidental diagnosis for RCC the patients who presented with symptoms for other urological disease or for urological check-up. **Results:** During 2005–2010 we had a total number of presented and hospitalized patients of 53012, all of them underwent an abdominal ultrasonography. Among these patients, in 101 cases was rose the suspicion of incidental RCC. All of them were examined by computer tomography. 72 patients were diagnosed with incidental RCC, 18 patients with Bertin column hypertrophy and 11 patients with benign tumor. **Discussions:** Out of 53012 patients examined by ultrasonography we had the opportunity to diagnose incidentally about 72 RCC, that is representing 0.13%, which were also confirmed by anatomy-histological examen. **Conclusions:** The ultrasonography represent a save, simple imaging method, being non-invasive, repeatable, non-irradiate, with a relatively low cost, it can be use for an evaluation a patients with symptoms, but also for healthy subjects as screening.

THE ROLE OF URODYNAMICAL FINDINGS IN THE MANAGEMENT OF CHILDREN'S OVERACTIVE BLADDER

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Introduction and objectives: Overactive bladder (OAB) this filling phase dysfunction shows an increasing incidence. The aim of this retrospective study is to present, based on urodynamical findings, our experience concerning management possibilities and difficulties in children with OAB. **Materials and methods:** In a two year period (between 2008–2010) in the Urodynamic Unit of the Clinic of Urology Tg-Mures there were 107 flowmetries performed in 48 cases of children presenting OAB, 28 (58,33%) girls and 20 (41,66%) boys, aged 6,5 years (3,2–14 years). Besides urodynamics the diagnosis of OAB was based on: history taking (questionnaire), voiding diary clinical examination, urine analysis and urine culture, ultrasound. In cases resistant to initial treatment we performed invasive urodynamics also. **Results:** Our findings showed increased micturition frequency in 4 (over 20 micturition), and 5 cases (between 15-20) reduced bladder capacity in a total of 29 cases (volume less than 100 ml), 6 patients (100-150 ml), post void residual urine in 7 cases, urge incontinence in 22 cases (15 girls), nocturnal enuresis 5 patients (4 girls), urogenital congenital disorders in 5 cases (congenital hydronephrosis, low grade VUR). Regarding the values there were differences caused by age, but we found real high values of Qmax (30 ml/sec.) in cases of 8 girls, in 10 cases the Qmax was on limit (values age and gender specific after Abrams). As of the shape of the curve our results revealed normal shape in 7 cases, interrupted and irregular curves in 3 cases. The above presented findings helped us in establishing the proper management: urotherapy in all of the cases, 9 cases alfa blocking agents, 36 cases treated with anticholinergics (18 children-Oxybutinin, 10-Tropium chloride, 10 caes-Solifenacin Succinate; depending on age) and 3 children having a combined therapy: alfa blockers and anticholinergics. **Conclusions:** Urodynamics are very useful in defining lower urinary tract conditions in children, and also in the proper management of these conditions especially OAB. Although different anticholinergics, alfa blocker agents are used because of the fact that the level of evidence is low new drugs and even randomized controlled trials (mainly for children under the age of 8) are needed.

SURGICAL TREATMENT OF PENILE WARTS WITH ELECTRICAL LOOP

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Introduction and objectives: Penile warts treatment can be both medical and surgical. Using the electric knife is sufficient in most classical cases. This paper aims is to evaluate the usefulness of electrical loop attached to the electric scalpel in the giant warts treatment. **Materials and methods:** Patient M.R., 52 years old was admitted in our service for a giant tumor at the level of the penile glans and occupying also approximately 3-4 cm below the glans, circumferential. The clinical diagnosis was penile cancer, and a penile biopsy was indicated for a diagnosis of certainty. Histopathological result was penile warts. The patient was recalled to our service for excision of penile tumor formation. Total excision of the penile warts was performed in spinal anesthesia using electric loop and applying the principles of endoscopic resection for bladder tumors. **Results:** Excision of penile tumor formation was complete, with minimal bleeding, rapid due to the use of electric loop. Discharge of

patients was performed 3 days after surgery. Erectile function was preserved at the 3 weeks control visit. **Conclusions:** The treatment of penile warts can be performed much easier by using electric loop in place of traditional electrical scalpel blade.

BREAST RECONSTRUCTION AFTER MASTECTOMY USING AN IMPLANT. CASE REPORT

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Breast reconstruction is the biggest reward after mastectomy for patients with breast cancer who have to deal with its prognosis and face the infirmity following breast amputation. The authors present a woman of 44 years who underwent a mastectomy with right axillary dissection who underwent breast reconstruction with implant just 10 months after mastectomy. Mention that the patient received adjuvant chemotherapy preop and chemotherapy, radiotherapy and hormone therapy after surgery. The results are presented through images pre-, intra- and postoperative early and late, it will still require complex reconstruction of areola and a plasty of symmetrisation of the opposite breast possible with implant.

1ST SURGERY CLINIC EXPERIENCE USE PROGRIP PARIETENE MESH IN SURGICAL TREATMENT FOR INGUINAL HERNIA

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Purpose: Evaluation of new prosthetic materials in the surgical treatment of inguinal hernias. Assumption: From 2011 we started using Progrid Parietene Mesh in the surgical treatment of inguinal hernias. **Materials and methods:** We used for surgical treatment of inguinal hernia in a total of 5 patients Progrid Parietene Mesh. Immediate postoperative evolution was evaluated at 1 month compared with traditional surgery patients or other prosthetic materials. **Results:** The postoperative evolution was favorable with no complications, with a median duration of hospitalization of two days, with rapid socio-professional reintegration. **Conclusions:** The use of Progrid Parietene Mesh is easy, quick with good results and can be used for day hospital treatment of inguinal hernias.

Keywords: prosthetic materials, hernia, surgical procedure

PENILE CANCER IN CASUISTRY OF UROLOGY CLINIC OF TARGU MURES

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Introduction/Objectives: Penile cancer is a relatively rare disease, the incidence of this disease in Europe is estimated between 0.1 to 0.9 illnesses per 100,000 men. Our presentation is a retrospective one, which object is to analyze and show incidence of penile tumors, their histopathology and surgical treatment types used in casuistry of Urology Clinic Targu Mures, a 9-year period, between 2002 and 2010. **Materials and Methods:** During 2002–2010, the Urology Clinic of Targu Mures, we performed 40 penis biopsies for suspected penile cancer. In 35 cases (87.5%) histopathological examination confirmed the existence of a malignant lesion. **Results:** The 40 patients studied had an average age of 64 years (30–82 years). In the listed cases as contributing factor in penile cancer we can enumerate phimosis (14.29%), poor hygiene of the region and chronic irritation. In 35 patients with penile cancer, histopathologic diagnosis was epidermoid carcinoma (100%) with grade 1 in 9 cases (26%), grade 2 in 11 cases (31%) and grade 3–4 in 15 cases (43%). In terms of staging, we had 4 cases in stage I (11%), 10 cases with stage II (29%), 13 cases in stage III (37%), and 8 cases in stage IV (23%). Radical surgical treatment depends on stage of disease. In our cases as surgical treatment, the most advanced surgical procedure was amputation penile (40%), which followed emasculation (28.57%), partial penile amputation (20%) and circumcision (11.43%) for preputial localization. **Conclusions:** Early diagnosis and proper treatment of penile cancer predisposing factors, fail to decrease their number and need for radical surgical procedures.

TRANSPERITONEAL APPROACH IN SURGICAL TREATMENT OF GIANT RENAL TUMORS. CASE REPORT

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Introduction and objectives: The incidence of renal tumors increase in the last 10 years. Also increased number of cases at young people with this pathology and also with tumors presented in advanced stages. The aims of this paper is to evaluate the result of a case of giant right renal tumor and left ureteral stone by transperitoneal approach. **Material and method:** Patient M.S., 48 years old was admitted in our service for macroscopic hematuria and left back pain. The patient was investigated in other medical services for left ureteral stone. Further testing (ultrasound, IVU, CT) showed the presence of a right renal tumor 18X27 cm (T2bN0M0). At this patient we performed right nephrectomy, left ureterolithotomy with left ureteral stent insertion. The incision was median laparotomy and right subcostal. **Results:** Transperitoneal approach allowed easy access to the right kidney and left ureter which made the operating time to be 3h 20min. The tumor weighed 6.9 kg. Bleeding was approximately 750–1000 ml. Patient received 2 units of blood intraoperatively. Drainage tubes were removed within 48 hours. Postoperative evolution was dragged, wound requiring about 20 days of postoperative care. Histopathological result was clear cell renal carcinoma, Fuhrmann grade 3. Left ureteral stent left was extracted 3 weeks postoperatively. **Conclusions:** Combined transperitoneal approach (median incision and subcostal) allowed treatment of the giant kidney tumor and ureteral calculus during the same surgical intervention.

THE PLACE OF ECHOGUIDED PROSTATE BIOPSY IN THE DIAGNOSIS OF ASAP (ATYPICAL SMALL ACINAR PROLIFERATION)

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Introduction: ASAP is a histopathological diagnosis what induce diagnostic dilemma in therapeutic conduct of urologist. From the existing data about 5% of all prostate puncture shows this histopathological changes. With this paper we try to launch some questions to which achieved by further follow up to find answers in the management of patients with ASAP. **Material and methods:** The study retrospectively analyzed data on 535 patients with PBP, on suspicion of ADKP performed in Urology Clinic of Urology Târgu Mureş, from April 2009–June 2011. The ultrasound guided punctures were performed, in a number of 6-12 in local or rahi anesthesia. The mean age of patients is 69 years (35-86 years). **Results:** The mean value of PSA performed prebiopsy was 25.6 ng /ml (0.78 to 312 ng / ml). Ultrasound measured prostate volume is between 30-120 mm³. In 31% of patients (165) digital rectal examination revealed normal relations. Echo guided biopsies were practiced in a ratio of 77,5% (415), and in 57,9% (310) cases histopathological diagnosis was ADKP. ASAP is showed in 6,35% (34) of the cases. At 4 (11.64%) patients was performed the rebiopsy, from which 1 (2.94%) patient showed ADKP. **Conclusions:** One of the biggest dilemmas in the interpretation of prostate puncture is the diagnosis of ASAP. This diagnosis does not justify starting the oncological treatment by specialist. These patients should be followed up rigorously, and the rebiopsy will be carried out obligatory. It is necessary to continue to study their rebiopsy, to confirm or disprove the benefit of 5 α -reductase inhibitor therapy.

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SURGERY IV, PNEUMOLOGY

PURE PLEURAL TUBERCULOSIS

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Introduction: Current specialized treaties share pleural tuberculosis damage in four categories: 1. Pure tuberculosis 2. Pure pleural tuberculosis with mixed infection (specific and nonspecific) 3. TB empyema. 4. Pleuro-parenchymatous lesions. **Material and method:** We present a patient, aged 29 years, who was referred to our clinic with left hemithorax pain, severe dyspnea, fatigue, fever = 38C, about 5 kg weight loss in a month, secondary to an empyema with no response to prolonged medical treatment. In laboratory tests are only notable: = 76% neutrophilia, lymphopenia = 14.2%, glucose = 161mg/dl, AST = 225 U / l, GPT = 171u / l. Bronchoscopy highlights: minimum left congestion (LIS), chronic bronchitis. Respiratory tests: CV = 63.1%, FEV1 = 71.3%. CXR and CT scan show a loculated effusion. Bacteriological examination of pleural fluid reveals four BAAR, with repeated negative cultures for non-specific microorganisms. A Fraser-Gourd decortication was performed, with multiple samples for pathological and bacteriological examination. **Results:** Postoperative course was favourable, with full reexpansion of the lung and resolution of complaints. Pathological examination showed active TB lesions, with negative cultures for non-specific germs, thus confirming the pure TB pleural lesion. **Conclusions:** The case is interesting due to the rarity of pure TB pleural lesions requiring major surgery.

BILATERAL THORACIC TRAUMA THROUGH FALLING WITH COMPLEX IATROGENIC LESIONS (PLEURO-PULMONARY BILATERAL AND ONE POST-INTUBATION TRACHEAL STENOSIS) SOLVED THROUGH ONE-STAGE SUCCESSIVE BILATERAL THORACOTOMY

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Introduction: Although 85% of the thoracic trauma can be solved by minor procedures, there are cases with complex lesions that require an atypical and highly specialised approach. **Material and method:** We present two cases of bilateral thoracic trauma referred to our unit for major surgery after bilateral pleural drainage. The common element was represented by the existence of complex iatrogenic lesions (pleuro-pulmonary bilateral, and in one case a tracheal post-intubation stenosis). In both cases we performed one-stage successive bilateral thoracotomy, with solving of the pulmonary, pleural (post-traumatic empyema) and chest wall lesions. In one case, emergency tracheostomy was also required due to respiratory failure secondary to a post-intubation tracheal stenosis, which was solved during the same hospitalisation through tracheal resection with T-T anastomosis. **Results:** Postoperative course was favourable in both cases. At postoperative follow-up both patients are without significant sequelae, able of medium physical effort and with respiratory tests over 70%. **Conclusions:** These cases show that severe thoracic trauma need an emergency access to anesthesia and surgery teams with training in thoracic surgery and specific endowment. An apparently minor gesture such as tube thoracostomy may have extremely severe consequences on the evolution of a thoracic trauma patient.

TUMORAL RECURENCE AFTER THORACOMEDIASTINAL PPLICATION AND MUSCULAR PLOMBAGE

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We report a 58 years old male who underwent a left pneumonectomy for a stage IIIA lung cancer (epidermoid carcinoma). The post-operative course was complicated by the development of a post-pneumonectomy empyema which was solved by a thoracomediastinal plication and muscular plombage (serratus anterior, latissimus dorsi, intercostal flaps). The bronchial stump was re-resected and closed-reinforced using an intercostal flap (plug technique). The immediate postoperative course was innitially favourable, the patient being discharged after 34 days. After 8 months, the patient presented a soft tissue suppuration developed on a tumoral recurrence that invaded the remaining chest wall. A palliative local resection was performed, equivalent to a modified open-thoracic window, allowing a 3 months survival. The case is interesting due to the rarity and the imagistic aspect of the tumoral recurrence in the particular anatomic conditions after thoracomyoplasty.

PARTICULAR TECHNICAL SOLUTION IN CASE OF CHOLECYSTO-DUODENAL FISTULA AND LITHIASIC OBSTRUCTIVE JAUNDICE WITH CHOLANGITIS

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Introduction: Surgical procedures for biliary lithiasis complicated with bilio-digestive fistulas are not standardized and are extremely difficult due to the anatomic changes. **Material and method:** We report a 60 years old female, known with biliary lithiasis, who underwent a “conservative treatment” of an obstructive jaundice for 6 months (ampiciline + No-spa); she was admitted in emergency with obstructive jaundice (T Bi 8.2 mg%, D Bi 6.1 mg%) and signs of cholangitis. Ultrasound revealed aerobilia and CBD lithiasis and the CT examination raised the suspicion of cholecysto-duodenal fistula. Intraoperative we found vesicular lithiasis with cholecysto-duodenal fistula, CBD lithiasis with stone impacted in the terminal choledocus and 2,5 diameter CBD. Surgery consisted in cholecystectomy with opening of the cholecysto-duodenal fistula, sectioning of the CBD, transduodenal sphincteropylotomy through the enlarged cholecysto-duodenal fistulous traject, closure of the distal biliary stump and of the duodenotomy, followed by Roux en Y hepatico-jejunosomy. **Results:** The postoperative course was favourable, excepting a biliary fistula that has closed spontaneously after the reparation of the intestinal transit, with resolution of the complaints and normalization of the laboratory values. The patient was discharged on postoperative day 14; at follow-up at 6 months after surgery she was symptom-free, with no enlarged biliary ducts and normal laboratory values. **Conclusions:** Surgery of bilio-digestive fistulas remains a difficult one, requiring often particular technical solutions, adapted to the local anatomic lesion. The case is also illustrative for the complications of the so-called „conservative treatment” of the biliary lithiasis.

ROLE OF MUSCLE FLAPS IN THE TREATMENT OF UNRESECTABLE PULMONARY ABSCESSSES

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Introduction: The treatment pulmonary abscesses still remains a challenge for actual thoracic surgery. We report our experience in using muscle flaps for the filling of unresectable pulmonary abscesses. **Material and method:** During the last 9 years we have used different muscle flaps (intercostal, serratus anterior and latissimus dorsi) in 14 patients with unresectable primary pulmonary abscesses. Muscle transposition was used alone (3 cases) or during thoracomyoplasties for lung abscesses complicated with empyema (11 cases). The objective of the procedure was complete obliteration of the diseases space and closure-reinforcement of the bronchial fistula; the choice of the flap was made according to the local anatomy. Preoperative preparation was made by daily lavages with antibiotics and disinfectants, including transparietal puncture using ultrasound guidance. **Results:** We have encountered no mortality and no major complications. Hospitalisation ranged between 25 and 46 days. At late follow-up (6 month – 9 years) we encountered no recurrence and no major sequelae. **Conclusions:** The use of muscle flaps is a valuable solution for unresectable pulmonary abscesses if the preoperative preparation is an adequate one. Compared to the classic techniques, the extensive mobilization of the flaps offers a good-quality biological material with considerable volume.

PSEUDOANEURISMS IN LOWER LIMB VASCULAR SURGERY

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Objectives: To determine the causes of apparition and the best ways of surgical solutions. **Materials:** 6 patients in the last 4 years. **Results:** all the patients was operated with final good results and “restitution ad integrum”. Complications were present: intraoperative haemorrhage, postoperative ischemia and infections. **Conclusions:** good surgical results with restitution ad integrum; long terms of interment; a lot of possible complications; care in making the anastomosis.

HEPATIC HYDATID CYST COMPLICATED INTRATHORACIC

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Purpose: The purpose of this paper is to present intrathoracic complications of hepatic hydatid cyst. Who is justified by the existence of common factors: clinical and radiological echinococcosis of liver and lung, as well as tactical and surgical technique which are com-

mon with suppurated pulmonary hydatid cyst. **Methods:** We present a group of 10 patients with a hepatic hydatid cyst complicated intrathoracic, we note that: the first 9 cases showed initial intervention in other surgical services. Surgical intervention followed the next steps: Right thoracophrenotomy, the liver lesion, abdominal drainage, closure of diaphragm, pulmonary decortication and chest drainage. **Results:** In our 10 patients we have; one case of secondary echinococcosis recurred at 4 years distance with lumbar hydatid cyst, two patients were reoperated (one with an abscess and other with thoracopleuroplasty). The last patient was operated endoscopic with sfincteropapylotomy. The late postoperative outcome was favorable in all the cases. **Conclusion:** In this study we want to emphasis development thoracic complications of hepatic hydatid disease, and once again to prove the value of right thoracophrenotomy.

Keywords: hydatid cyst, thoracophrenotomy, thoracic

TUBERCULOMA PROBLEMS OF DIAGNOSIS WITH HYDATID CYST

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Purpose: Tuberculomas of the lung is one of manifestations in tuberculosis and usually presents as a solitary pulmonary nodule. Pulmonary tuberculoma, lung carcinoma and inflammatory pseudotumor can present radiological character as hydatid cyst. **Methods:** We analysed 68 patients with solitary pulmonary nodule and describe here: clinical, radiologic, pathologic correlation and surgical treatment. In 29 patients, lung cancer was suspected preoperatively, based on radiographic findings of an ill-defined malign, pleural indentation and spicular radiation. In 12 patients, tuberculoma was suspected because of radiographic finding calcification and satellite nodules. Some of them were also described in hydatid disease of the lung. **Results:** In most cases the diagnosis was established by biopsy or based on macroscopic images. **Conclusions:** However, diagnosis of tuberculoma is very difficult, because of its nonspecific radiographic appearances and the difficulty of bacteriological confirmation of disease. In our country in many cases thoracotomy remains the most valuable method to establish the diagnosis and in the same time to solve the lesions.

Keywords: tuberculoma, hydatid cyst, solitary pulmonary nodule.

FIVE-YEAR EXPERIENCE OF INGUINAL HERNIA TREATMENT WITH THE LICHTENSTEIN TECHNIQUE - SHORT TERM RESULTS

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Objectives: Short-term results of inguinal hernia repair using Lichtenstein technique in our clinic in a five year period (between 2006 and 2011) were retrospectively analysed. **Methods:** Two hundreds and thirty three patients (258 inguinal hernias) treated with the Lichtenstein technique were traced and included. Patients were invited to visit the outpatient clinic for a brief history and physical examination. A quality of life questionnaire was completed by all patients. The primary endpoint was recurrence rate. Chronic pain, hypoesthesia and testis atrophy were secondary endpoints. **Results:** The mean age of the population was 62.2 years (range 22–92), with a male:female ratio of 15:1. The median follow-up was 2.8 years. One-hundred and forty-five patients visited the outpatient clinic, while 13 patients were included by telephone interview. Twenty-one patients died during follow-up and fifty four others were lost to follow-up. The resulting follow-up rate was 67% (158/233). In our follow up we found three recurrences (1,8%) and 10 patients with persisting pain (6.3%). Two patients (1.2%) were diagnosed with testicular atrophy, while eight patients (5%) experienced hypoesthesia. **Conclusions:** The recurrence rate and short-term complications of patients treated for inguinal hernia using Lichtenstein technique are acceptable.

Keywords: inguinal hernia, Lichtenstein technique, recurrence, short-term complications.

TRANSTHORACIC VERSUS ABDOMINAL APPROACH IN THE TREATMENT OF HIATAL HERNIA

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Surgical management of hiatal hernias and complex gastroesophageal reflux disease requires a tension-free repair with reliable reflux control which is performed either by an abdominal approach or a transthoracic one. The aim of this observation was to evaluate the advantages and disadvantages of transthoracic versus the abdominal approach. From a total of 12 patients the authors emphasize their

own technique through an abdominal approach (10 cases), which uses the same 4 stitches for the recalibration of the diaphragmatic orifice and for the reconstruction of the His angle, fixing the whole ensemble under the diaphragm. The advantages of the procedure consist in the simplicity and the rapidity of the execution. Those who apply the same principles regardless of approach—transthoracic or abdominal—such as good mobilization, hiatal reconstruction with buttressing, and tension free wraps with appropriate use of gastropasty, have excellent results. For a general and thoracic surgeon which is used to thoracotomies, the transthoracic approach offers optimal exposure.

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TRANSTHORACIC AND INTRATHORACIC APPROACH OF THE GALLBLADER AND BILIARY TRACT

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The authors present three cases of hepato-biliary approach through left thoracophrenotomy. These cases are very rare and present interest due to the surgical way of approach that is chosen primarily for the associated pathology. The left thoracophrenotomy offers an excellent exposure of the lesions situated on the superior aspect of the liver. Case no. 1 – patient B.M, 21 years, completely asymptomatic, whose premarital chest radiograph showed a pulmonary hydatid cyst of the left lower lobe and the abdominal ecography discovered first 2, then 4 hepatic hydatid cysts. Surgery was performed through a left lower antero-lateral thoracotomy with a Perez-Fontana-Bakulev ideal cystectomy for the pulmonary cyst, followed by a left paracardiac phrenotomy which allowed the approach and treatment of the hydatid cysts of the liver finalized with a tactical cholecistectomy and a Halsted transcystic drainage of the main biliary duct. Case no. 2- patient C.E., 31 years-old, with a hydatid cyst of the lingula and a hydatid cyst of the left lobe of the liver, solved by Finochietto cystectomy, and maximal cystopericystectomy, Traian Stoica procedure, through left thoracophrenotomy and Beclere underwater subhepatic drainage. Case no. 3 - Pacient came in emergency with a postraumatic hepatothorax after right-sided diaphragmatic rupture accompanied by cholesterolosis of the gallbladder. Surgery was performed through a left lower thoracotomy with a complete intrathoracic cholecistectomy. We did not encounter this surgical approach of the liver and bile ducts in the available Romanian and especially foreign literature literature (including internet).

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A RARE CAUSE INSIDE THE SOLITARY PULMONARY NODULES

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Aim of the study: the importance of the histopathological confirmation of the solitary pulmonary nodule (case report). **Results:** we present the case of a 52 years old men with a solitary pulmonary nodule initially considered as a tuberculoma. The patient had in his youth a close tuberculous contact with his mother (who had at that time contagious tuberculosis). At the hospital admission the patient presented consumption and chronic cough. Chest XRay and CT scan revealed a solitary pulmonary nodule (without adenopathy) wich was initially appreciated as a tuberculoma and the patient started an antituberculous treatment. Since the patient was a male, over the average age, smoker, with negative bacteriological examination for Koch bacillus (including at the bronchoscopical aspiration) we insisted for a precise histopathological exam to confirm the aetiology. Surgical resection was recommended as diagnostic and therapeutic measure. Histopathology revealed a hamartoma. The postoperative evolution was favourable and the patient did not need any additional treatment. Approximately 40% of the solitary pulmonary nodules are potentially malignant and therefore they have to be correctly investigated by biopsy (through transbronchial needle aspiration, thoracoscopy or open thoracotomy). The precise confirmation of the aetiology is crucial for the correct and early treatment. The deep location of the nodule in our case recommended thoracotomy. Despite the invasive type of the procedure, surgery permitted the differential diagnosis with several possible aetiology, the etiological confirmation and discontinuation of the antituberculous treatment.

THE CONTRIBUTION OF THE BRONCHOALVEOLAR LAVAGE IN THE ETIOLOGICAL DIAGNOSTIC OF A COLLAGEN DISEASE

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Method: Case report. We present the case of a 50 year old man, smoker, admitted in the hospital with severe symptoms: dyspnoea, orthopnoea, dry cough, anxiety, fever, cyanosis, oliguria, bilateral edema, high blood pressure and nephrotic syndrome. CT scan showed diffuse interstitial fibrosis and highlighted a picture of „ground glass” lung, bilateral pleural effusion, pericarditis. Spirometry revealed a severe restrictive disfunction. Laboratory examinations: anemia, uremia, proteinuria, negative serological immuno-assay (antiDNA antibodies, rheumatoid factor, immune complexes), urine culture sterile, HIV negative, negative antiHCV antibodies. The anti-glomerular basal membrane antibodies were negative and so we excluded a Goodpasture’s syndrome. The bronchoscopy revealed an exacerbated chronic bronchitis and bronchiectasis. Bronchoalveolar lavage ruled out alveolar proteinosis; examinations for Koch bacillus, were negative, but anti-DNA antibodies were positive. We established the diagnosis of systemic erythematosus lupus upon the American College of Rheumatology criteria: pleural effusion, pericarditis, anemia, nephropathy with proteinuria, anti-DNA antibodies. We recommended reumatological monitoring, systemic corticoids and associated bronchodilator therapy, diuretics, antihypertensive drug therapy. The patient has ongoing therapy with combined inhaled corticoids therapy and long-acting beta-agonists, oral CS and antihypertensive drugs. The lung function improved near normal, the renal function is now normal. Immunological exams performed from the broncho-alveolar lavage fluid allowed the diagnosis of a major collagen disease (with negative serology) and the subsequent appropriate treatment.

ECTOPIC THYOMAS WITH LATERAL – PARACARDIAC DEVELOPMENT

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Thymomas with atypical development remain a challenge, both as diagnostic and treatment. During the last 15 years we had 4 cases referred to our unit with the diagnosis of mediastinal / pulmonary tumor, in whom the preoperative imagistics showed mediastinal tumor, with lateral – paracardiac development. Intraoperative we found tumors in closed contact with the diaphragm, developed posterior to the phrenic nerve. In all the cases we performed complete excision of the tumors using a lateral approach. Frozen section examination was unconvincing in all the cases, the diagnosis being established by the definitive pathologic examination. The access on the lesion was excellent in all the cases. All the 4 patients had a good immediate and late postoperative evolution. We encountered no recurrence. In cases of intrathoracic tumors with paracardiac location the possibility of a thymoma should be taken into consideration.

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THE DIFFERENTIAL DIAGNOSIS:IMAGISTIC, CLINIC – PATHOLOGICAL AND SURGICAL CONSIDERATIONS BETWEEN LUNG CANCER AND TUBERCULOSIS

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The differential diagnosis between lung cancer and pulmonary tuberculosis preoperatively remains a challenge requiring a medical practitioner experienced in this regard. Tuberculomas of the lung are one of the more common lesions presenting as a solitary pulmonary nodule. We analysed 68 patients that presented a lesion such as a nodule and describe here the radiologic – pathologic correlations and surgical treatment. In 29 patients lung cancer was suspected preoperatively, based on the radiographic findings of ill – defined margin, pleural indentation and specular radiation. Histologically, the tuberculous granuloma proliferated in the alveolar septa of the surrounding normal lung, often seen as a specular radiation resembling lung cancer. In 12 patients, tuberculoma was suspected because of radiographic findings of calcification on satellite nodules, and anti tuberculous chemotherapy was prescribed. As this treatment was ineffective, surgical resection had to be done. Postoperative complications were seen in 6 patients. Anti – tuberculous chemotherapy was prescribed for all the patients, postoperatively. We believe that surgical intervention is required in most of cases obtaining tissue for the pathology exam and solving in the same time the lesion.

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EAR-NOSE-THROAT, OPHTHALMOLOGY, PEDIATRIC SURGERY

CONGENITAL ADRENAL HYPERTROPHY - CASE REPORT

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Congenital adrenal hypertrophy is a rare disease which can be present at birth. It is characterized by glucose as well as hydroelectrolytic metabolism disturbances. These changes require immediate and appropriate correction, otherwise can lead to death. According to its anatomic description this malformation is characterized by important alterations of the external and sometimes of the internal genital organs. We present the case of a young female patient who was born with this malformation. The examination of her genital organs revealed a marked hypertrophy of the clitoris. The vagina was not visible and the vulva was not correspondingly developed (absence of labia). Chromosomal, MRI and radiographic investigations with contrast agent revealed her gender (female) and presented a urogenital sinus. After a proper metabolic and endocrine equilibration a surgical intervention was performed at the age of 18 month. She underwent genitoplasty: we performed clitoral hood reduction (preserving vascularization and innervation) and the reconstruction of the vagina and vulva. Postoperative evolution was favorable and the final appearance was appropriate to the patient's age and gender.

TWO RARE CASES OF URETHRAL DUPLICATION - CASE REPORT

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Urethral duplication is a rare congenital abnormality. In cases like this, in addition to a normal urethra, there is an accessory urethra growing from the bladder or the proximal urethra which opens anywhere in the penis or even in the perineum. Many patients presenting this malformation are asymptomatic. Some patients may complain of intermittent discharge from the accessory urethra, incontinence, infection, double streams or stricture. The duplicated urethra may be complete or incomplete, may be located dorsal, ventral or in Y-type. We report two cases of dorsal urethral duplication discovered in two, 1 and 3 year old boys. The treatment was surgical: we prepared and excised the duplicated urethra. Postoperative evolution in the two young male patients was favourable.

NINE MONTHS OLD GIRL WITH ASYMPTOMATIC RIGHT-SIDED DIAPHRAGMATIC HERNIA - CLINICAL CASE

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Introduction. Congenital diaphragmatic hernia has a incidence of 1 to 3000 newborns and is presented usually as posterolateral Bochdalek diaphragmatic hernia (95% of cases). Newborns could have pulmonary hypoplasia, pulmonary hypertension and the mortality rate may reach to 45-50%. The rest of cases are retrosternal Morgagni's diaphragmatic hernia and hiatal hernia due to a short oesophagus (brachyoesophagus). These much more rare cases are often without symptoms being found incidentally during radiological investigation for other pathology (viral or bacterial bronchopneumonia). **Material and methods.** We present a nine months old girl with a right sided intrathoracic herniated stomach due to a large oesophageal hiatus and short oesophagus. We performed after the plain chest X-ray a barium meal fluoroscopy followed by a CT scan. Surgery was indicated, the stomach was put partially intraabdominal with the correction of organoaxial nonobstructive torsion because of the short oesophagus. **Results.** Initially plain chest X-ray showed a gas-filled structure at the base of the right hemithorax consistent with hollow viscus. CT scan showed a rightsided intrathoracic stomach with a portion of transverse colon anteriorly located. Immediately after surgery the barium meal fluoroscopy showed little gastroesophageal reflux without exteriorization. After one year, the patient was well without reflux or other complications (aspiration pneumonia etc.). **Conclusions.** Hiatal hernia with brachyoesophagus is a rare condition and even most of reported cases were asymptomatic the risk for gastric volvulus or colic obstruction is real and therefore corrective surgery is necessary.

BLINDNESS PROPHYLAXIS IN THE DIABETIC RETINOPATHY WITH LASER TREATMENT AT THE OPHTHALMOLOGY CLINIC TÂRGU-MUREȘ

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Purpose: to evaluate the prevalence of the diabetic retinopathy and the degree of coverage with laser treatment of this disease in Ophthalmology Clinic Tg-Mureș. **Material and method:** one year (1 January 2010–31 December 2010) retrospective study. From 3344 admitted patients in the Ophthalmology Clinic, 198 have been treated with laser YAG 532 nm. **Results:** high prevalence of diabetes mellitus in Mureș county, high incidence of diabetic retinopathy in the diabetic population, small grade of coverage through laser treatment of the patients diagnosed with diabetic retinopathy. **Conclusions:** diabetic retinopathy is one of the most frequent causes of blindness in the Association of Low-Vision Patients in Mureș county. For the good management of this disease, modern diabetical and ophthalmologic centres with angiography, optical coherence tomography and laser treatment possibilities are necessary.

OCULAR TOXOPLASMOSIS RELAPSED

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The purpose: of the paper is to present the case of a young patient with relapsed toxoplasmotic chorioretinitis in both eyes. **Materials and methods:** Was follow the evolution of a 27 years old patient know with toxoplasmotic chorioretinitis in both eyes, after local and general antitoxoplasmotic treatment. **Results:** During the five months, the patient had two inflammatory episodes successively in both eyes, one episode occurring after treatment with clindamycin and azithromycin. **Conclusions:** Relapse of inflammatory chorioretinitis episodes is common, leading to significant chorioretinal scars, requiring a good collaboration with infectious diseases specialists.

CATARACT SURGERY WITH PREMIUM CRYSTALLINE LENS IMPLANT – PERSONAL EXPERIENCE

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Purpose: The aim of this paper is to report our experience regarding artificial lens implantation namely toric and multifocal type in patients who have undergone cataract surgery by phacoemulsification method. **Material and method:** We performed a retrospective study which included 15 eyes, 13 patients from March 2010–November 2011. Interventions were made by the same surgeon with the same surgical technique. **Results:** The selections of patients, careful preoperative preparation, especially accurate and repeated biometry are keys to postoperative success. Calculation of final type of crystalline lens power is much easier using online formulas. In terms of surgical technique, in such cases we used phacoemulsification method, though not recommended for beginners because any intraoperative incidents would compromise the implant of selected Premium lens. Postoperative results were according to our expectations in all cases except one case with toric lens implant in which wrong position was found postoperatively. This could be resolved intraoperative even 2 months after surgery. **Conclusions:** Toric or multifocal crystalline lens is an ideal and simultaneous solution of cataract disease in eyes with coexisting refractive vices.

UVEITIS IN CHILDREN - CLINICAL CASE

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Uveitis in children is a challenge for the ophthalmologist both in terms of establishing the etiology and the appropriate treatment also. Interdisciplinary investigations are very important, especially cooperation between the ophthalmologist and the pediatrician-rheumatologist. Usually the type of systemic treatment is decided by the latter. This paper presents the case of an 8-year-old patient diagnosed with unilateral, relapsing anterior and intermediate uveitis; Complicated cataract, admitted to the Ophthalmology Clinic of Targu Mures, in January 2011. The multiple investigations established the rheumatologic etiology of the disease: Juvenile rheumatoid arthritis associated with Immunodeficiency with hyper IgM. Beside topical treatment, general therapy is complex: systemic steroids associated with antimetabolite. The therapeutic response was obtained slowly over several months, with prolonged persistence of signs of anterior uveitis.

COMBINED TREATMENT OF PROGRESSIVE KERATOCONUS

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Purpose: The aim our retrospective study was to evaluate the results of combined treatment with riboflavin-ultraviolet type A (UV-A) induced corneal collagen cross-linking (CCL) and Ferrara intra-corneal ring segments in patients with progressive keratoconus. **Material and method:** 40 eyes of 37 patients with progressive keratoconus were treated by combined treatment, in the period march 2007- may 2010. Postoperative values of uncorrected visual acuity (UCVA), best spectacle-corrected visual acuity (BSCVA), refraction and topografic keratometry were referred to the preoperative data. **Results:** In all treated cases the progression of keratoconus was stopped. Comparative preoperative and postoperative results showed increases of UCVA ($p < 0.0001$), BSCVA ($p < 0.0001$), reduction of mean K ($p < 0.0001$) and of the refractive errors- mean spherical equivalent (SE) ($p < 0.0001$), mean cylinder values (Cyl) ($p < 0.0001$). **Conclusions:** This combined procedure improve significantly the vision, refraction, keratometry, and it can stop the progression of keratectazia in keratoconus, helping to avoid or delay the need for penetrating keratoplasty.

Keywords: keratoconus, corneal collagen cross- linking, Ferrara intra-corneal ring segments.

THE POLYSOMNOGRAPHY-ESSENTIAL METHODE FOR THE EVALUATION OF PATIENTS WITH SLEEP DISORDERS BREATHING

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Introduction: To correct and complete diagnosis of sleep breathing disorders the polysomnography is essential. It includes performing polysomnography PSG recording signals during sleep, associated with respiratory effort, muscle movements and recording of cardiac signals together with polysomnographic pulse oximetry. The traceability evaluation is based on computer obtained routes and direct monitoring of patients. PSG was introduced in 1980, to evaluate patients with sleep pathology, it was unanimously accepted in laboratories. The aim of our study is to demonstrate the clinical value of this investigation, account the possibility of investigating all patients in the decubitus positions sleep, and data correlation with other parameters such as resistance index of the upper air ways, and the degree of oxygen desaturation. **Materials and methods:** The Polysomnographic evaluation of studied patients, was performed using polysomnography SOMNO SCREEN equipment, located in Medical Center GALENUS. The data obtained have been correlated the recording of clinical ENT examination. The classification of patients was performed in 4 groups according apnea-hypopnea index. Were taken in the study, various decubitus position, the patient, to which were added to the degree of desaturation comparisons and evaluation of ENT. Retrospective study was made for the last two years on a group of 50 patients with different degrees of obstructive sleep apnea syndrome. **Results and discussion:** Gender distribution was 97% men and 12% women. In 81.76% has been shown that to decubitus during sleep is what influence the index value of RDI and degree of apnea, and degree of desaturation. At 18.24% of the patients investigated, it was found that there is no connection between these parameters, for various reasons such as the presence of another type of apnea, or the existence of other causes of apnea. **Conclusions:** Polysomnography, is a method for the valuation of gold standard, precious in assessing the degree of obstructive apnea, is indispensable for a correct diagnosis and completeness of them.

TOPICAL ADMINISTRATION OF BETABLOCKER CAUSING ACUTE HEART BLOCK

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Purpose: To report a case of glaucoma patient who developed second degree heart block after administration of topic betablockers therapy. **Methods:** Case Report, Evaluation including a complete eye examination, cardiologic evaluation and procedure of pacemaker implantation. **Results:** 68 years female glaucoma patient who developed second degree heart block after the administration of ophthalmic fixed combination therapy: latanoprost and timolol necessitating permanent cardio stimulation. **Conclusions:** the appearance of second degree heart block after the administration of topic beta blockers represents a a redutary complication which puts the patient's life in danger. It is imperative that in the indication of antiglaucomatous therapy to exist a good collaboration between ophthalmologists and cardiologists

INTRAVITREAL BEVACIZUMAB FOR THE MANAGEMENT OF CHOROIDAL NEOVASCULARISATION IN ANGIOID STREAKS

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Purpose: To investigate the efficacy and safety of intravitreal bevacizumab for managing choroidal neovascularization (CNV) due to angioid streaks (AS). **Methods:** Five eyes of four patients with subfoveal CNV due to AS participated in this study at the Ophthalmology Clinic of Târgu Mureș. All eyes received a baseline eye examination, which included best-corrected visual acuity (BCVA), dilated fundus examination, ocular coherence tomography (OCT) imaging. An intravitreal injection of bevacizumab (2.5mg/0.1 ml) was given at baseline and followed by two additional injections at four-week intervals. BCVA were repeated four weeks after each injection and OCT was made after one month after the third injection. Main outcome measures were improvement in BCVA and central retinal thickness (CRT). **Results:** Mean baseline BCVA was 20/204, and baseline CRT was 359 μ . Improvement in VA and CRT occurred by the fourth week. At 12 weeks, mean BCVA was 20/43 and mean CRT was 254 μ . No systemic or ocular side effects were noted at any time. **Conclusion:** Most patients with angioid streaks may remain asymptomatic till development of subfoveal CNVM or a choroidal rupture which carries an extremely poor visual prognosis whether treated or not. Recently, vascular endothelial growth factor (VEGF) has been implicated in the pathogenesis of CNVM. Bevacizumab is a humanized monoclonal antibody that inhibits all isoforms of VEGF and is FDA-approved for the treatment of colorectal cancer. Recently, bevacizumab has been used to treat CNVM due to age-related macular degeneration (ARMD). These patients with angioid streaks treated with three injections of intravitreal bevacizumab showed marked improvement in visual acuity with reduction in angiographic leakage and CRT after 12 weeks of follow-up. These studies showed no untoward effects even after three injections. These cases illustrate that intravitreal bevacizumab has a possible role in the treatment of the above condition with regression of neovascular membrane and subsequent visual improvement, although a much longer follow-up and a large prospective study is required to reach a conclusive result.

CONJUNCTIVAL BIOPSIES IN PATIENTS WITH DRY EYE AND COLLAGEN DISEASE

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Purpose: We aimed to evaluate treatment efficacy of dry eye in major collagenosis by quantifying the histopathological changes of the conjunctiva. **Material and method:** Highlighting histological aspects consisted of conjunctival biopsy study in 22 patients. The following aspects were recorded: changes in stratified squamous epithelium, shape and size changes of the cells, vacuolation of cytoplasm, keratinization, nuclear aspects, goblet cells and inflammatory reaction. We studied conjunctival biopsies before and after 3 months of treatment. **Results:** We observed: acantosis, atrophy of the conjunctival epithelium, anizocytosis, „rocket” cells, cytoplasm vacuolation, keratinization tendency, nuclear changes, decreased goblet cell number and nonspecific inflammatory infiltrates with focal, diffuse or perivascular disposure. Patients with filamentous keratitis or superficial punctuated keratitis had less than 5 goblet cells/mm² epithelial tissue. Goblet cells number increased and inflammation decreased after 3 months of therapy. **Conclusions:** Dry eye is accompanied by pathological changes in the conjunctival surface epithelial cells. Tear film instability due to alteration of the mucous layer causes severe ocular surface changes. Histological study of conjunctiva has an important contribution to the evaluation of ocular abnormalities, the assessment of therapy efficacy and therefore hence the prognosis.

SURGICAL MANAGEMENT OF TRAUMATIC CATARACT AFTER PERFORATING CORNEAL INJURY

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The purpose: of this study was to evaluate the results of the therapeutic approach and surgical treatment in patients with perforating corneal wound and traumatic cataract. **Materials and methods:** the inclusion criteria in our study were the following: patients hospitalized during the past year in the Ophthalmology Clinic TgMures for perforating corneal injury and traumatic cataract and who underwent surgical treatment for these conditions. **Results:** in this period we had a number of four cases that could be included in our study. After a well established diagnostic protocol and general drug therapeutic algorithm, surgery has been performed. In all cases cataract surgery was undertaken with posterior chamber lens implantation; in one case corneal wound suture was necessary with positive outcome. **Conclusions:** Cases with perforating corneal injury and traumatic cataract have particular aspects while performing surgery. Preoperative investigations, general and local drug therapy are essential in the management of these cases.

ORTHOPEDICS, TRAUMATOLOGY

FISTULAR BACTERIOLOGICAL DIAGNOSIS VERSUS INTRAOPERATIVE IN SEPTIC COMPLICATED ARTHROPLASTIES

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Introduction: Deep periprosthetic infection is a rare, but severe complication of arthroplasties. Targeted antibiotic drug therapy is based on the results of fistular or intraoperative bacteriological examination. The aim of this study is to compare the results of fistular and intraoperative bacteriological examinations. **Material, methods:** Between 2000-2009 we investigated 106 patients with deep periprosthetic complication. The fistular recoltation was performed in surgery room condition after proper preparation and isolation of the surrounding skin. Intraoperatively the recoltation was performed from the most affected tissues by suppuration. **Results:** The bacteriological results were received after 2 and 5 days from the recoltation. If it was a slow-growing low-grade bacteria results were received from 7 to 14 days. Bacteria isolated from fistula were dominated by *Staphilococcus* spp., in rate of 48.08%. Intraoperative staphylococci dominance continues with a percentage of 63.45%. The rate of true positive results were 94.23%. **Discussion:** Bacteriological examination is an obligatory step in diagnostic protocol, it is the base of the correct antibiotic drug therapy. Fistular recoltation is disputed in the literature. There is a real danger of contamination. The method proposed by us significantly reduces this danger. The results of correctly performed fistular bacteriological examination, in conjunction with other clinical and laboratory results, can guide us in setting up a correct antibiotic treatment plan.

Keywords: arthroplasty, deep infection, fistula, bacteriological examination

BONE GRAFT SUBSTITUTION WITH S53P4 (BONALIVE®) BIOACTIVE GLASS IN THE TREATMENT OF BENIGN BONE TUMORS – OUR SHORT TERM EXPERIENCE

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Objective: Our study was aimed to analyse the results of using S53P4 as a bone graft substitute in a series of patients treated for benign bone tumors. **Methods:** The study included a number of 11 patients treated between June 2010 and February 2011 (of these we had 6 male patients and 5 female patients; the mean age was 24.8–range 19 to 52 years). The diagnoses were simple bone cyst in 6 cases, osteoid osteoma in 2 cases, non-ossifying fibroma in 2 cases and 1 case of osteoclastoma. Treatment consisted of thorough curettage followed by filling the defect with bioactive glass. Bone defect size varied from 3.5mm x 2mm x 1.5mm to 7.5mm x 4mm x 3.5mm. Patients were evaluated clinically and radiologically at 1, 3 and 6 months after surgery. **Results:** All patients presented appropriate wound healing and there were no allergic reactions or complications. Both clinical and radiological evaluation showed good results, with radiological evaluation demonstrating signs of graft osteo-integration and incorporation of the synthetic bone substitute in all cases. On radiologic examination, at 1 month postoperatively the interface between the bone substitute and host bone became blurred, and at 3 months new bone formation could be detected, with the gradual absorption of the glass granules and merging of these with the host bone. At 6 months postoperatively the majority of granules were absorbed and signs of bone remodelling were visible. During the follow-up period, no tumor recurrences were noted. **Conclusions:** The preliminary results of our study have shown that bioactive glass (S53P4) can be successfully used as a bone substitute material in all of the presented pathological conditions. We believe that this type of synthetic bone substitute—being a safe and well-tolerated option—will become more popular in the future, due to its special properties.

IMPORTANCE OF THE CENTER OF ROTATION IN TOTAL HIP ARTHROPLASTY FOR DEVELOPMENTAL HIP DYSPLASIA

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Introduction: developmental hip dysplasia implies a deficient acetabulum, small and malrotated femur, and shortened lower extremity. A high centre of rotation decreases the lever arm of the abductors, with higher joint-reaction forces—thus anatomic restoration of the

center of rotation is of major importance for implant survival. A high hip centre of rotation in total hip replacement is considered to be one of the most important factors for implant aseptic loosening. The aim of this study was to investigate the influence of high hip centre of rotation on implant survival. **Methods:** twenty-seven hip replacements performed with a high hip centre of rotation were matched with 25 performed with an anatomical centre of rotation. Mean follow-up was 2.9 years. The selection criterion was developmental hip dysplasia as preoperative diagnosis. All patients were reviewed clinically and radiographically postoperatively, at 3, 6, and 12 months and each year afterwards. Function was assessed by the Visual Analogue Scale and the Harris hip score. The radiographic evaluation of implant stability was performed using Eng's criteria. **Results:** all of the acetabular components were osteointegrated without evidence of migration or radiolucent lines. Very good results were obtained in both groups, no statistically significant differences were found in clinical or radiographic results between the two groups. **Conclusions:** the majority of reports that studied the effects of a high hip centre of rotation showed poor results in contrast with our clinical results. In an experimental study where hip joint reaction forces were investigated it was shown that superolateral placement of the hip centre increased the joint reaction forces, while only superior placement did not alter these forces significantly. Because of the relatively short follow-up period and the low number of patients included in this study we could not yet declare a final result.

THE IMPORTANCE OF PROXIMAL FEMORAL MORPHOLOGY IN THE SELECTION OF THE FEMORAL STEM IN TOTAL HIP ARTHROPLASTY

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Introduction: The morphology of the proximal femur shows several variations even in physiological conditions. These can be defined by the cortex-to-canal ratio that is influenced by the bone's calcium content and its thickness, being a function of age and pathological conditions, and subject to change. These differences depending on the thickness of the cortex were categorised by Dorr (A, B, C types). When choosing the endoprosthetic femoral stem, the proximal femoral morphology must be taken into account in order to achieve adequate stability of the implant. **Material and method:** We selected a number of 51 patients (56 hips, mean age 48 years) that underwent total hip arthroplasty in the Clinic of Orthopaedics and Traumatology of Targu Mures (diagnosed with hip arthrosis or avascular necrosis of the femoral head). We assessed the AP radiographs to determine the Femoral Flare Index, Cortex Thickness Index, Cortico-Medullary Index and Cortex-to-Canal Ratio, and categorised each hip according to the Dorr types. **Results:** We found a correlation between the Femoral Flare Index and the Cortico-Medullary Index ($p < 0.001$). The biggest differences were found between the Dorr type A and type C femora. Most patients (57.14%) had Dorr type B proximal femoral morphology. **Conclusions:** We were able to develop an algorithm that takes into account the described measurements in selecting the optimal femoral stem for the given patient.

PLATELET-RICH PLASMA IN INTRA-ARTICULAR INJECTIONS OF THE KNEE – ADJUVANT TREATMENT OF INTERNAL LESIONS

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Introduction: A recent treatment method based on enhancing the healing response in different tissues, platelet-rich plasma (PRP) is obtained from the patients' peripheral blood by centrifugation. It contains platelets in a high concentration (these are known to release growth factors), as well as plasma, cytokines, thrombin, together with other growth factors that are involved in the process of wound healing. **Purpose:** Our aim was to evaluate the efficacy of Platelet Rich Plasma (PRP) injections in the knee, administered after the arthroscopic treatment of intra-articular pathological conditions. **Methods and Materials:** We included a number of 24 patients in our study – the patients were treated arthroscopically between July 2009 and February 2011, for meniscal tears, synovitis or chondral lesions. Patients were divided in two groups: group I (11 patients) received adjuvant PRP i.a. injections, while group II (13 patients) had no PRP treatment. Treatment consisted of partial meniscectomies and partial synovectomies. The cartilage lesions observed were ICRS grade I or II lesions, involving the femoral condyles and/ or tibial plateau, and no higher grade lesions or “kissing lesions” were present, therefore chondral lesions were treated by mechanical chondroplasty. The patients mean age was 28 years (range 21–49), and 18 patients were men, 6 were women. For group I, 6 PRP i.a. injections were administered postoperatively, at a rate of 1/ week. Final evaluation was performed at the end of the 6th postoperative month, using the Lysholm scoring system and the Tegner activity scale. **Results:** We observed no major events or complications during the study period. 3 patients showed minor adverse events—mild effusion and pain after the injection—these lasted no more than 2 days. At the final follow-up all patients showed improvement—with slightly better results in the PRP group (Lysholm score was excellent and good in 10 patients from group I compared to 9 in group II, mean Tegner activity level improved from 4 to 6 in both groups). **Conclusions:** Our short-term clinical results are encouraging. We consider PRP to be a simple, low cost adjuvant, with potential beneficial effects on healing of intra-articular lesions of the knee. Still, a series of long-term and randomised trials are necessary to better define the role of PRP in the treatment of the pathological conditions of the knee.

EVALUATION OF CARTILAGE DEFECTS IN 353 CONSECUTIVE KNEE ARTHROSCOPIES

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Introduction: Knee articular cartilage lesions occur frequently in young people, and because of their poor capacity for repair and the fact that they influence normal knee function and predispose patients to osteoarthritis, these lesions have become an increasing social problem. **Purpose:** The aim of our retrospective study was to offer data regarding the epidemiology and etiology of articular cartilage lesions of the knee observed during arthroscopic treatment. **Methods and materials:** We analyzed a number of 353 consecutive knee arthroscopies performed in our facility between July 2010 and September 2011. We recorded information regarding the type of cartilage lesions (as classified according to the ICRS criteria), their number, size and localization, as well as data concerning associated internal lesions of the knee. **Results:** We found chondral lesions in 219 cases (62%), from which 68.5% were non-isolated lesions. From the patients with focal chondral defects, 59.3% have had previous trauma, while associated meniscal and anterior cruciate ligament injuries were found in 45% and 27% respectively. According to the ICRS classification, the most common type of lesions were those of grade II. Localized full-thickness lesions (ICRS grade III or IV) were found in 11% of the knees—of these 57% had a size of 2cm² or above. Focal cartilage lesions were found most frequently on the medial femoral condyle (60%), follow by the lateral tibia (12%), patella (10%), lateral femoral condyle (8%), medial tibia (7%) and the trochlea (7%). **Conclusions:** We concluded that cartilage lesions are a common pathology of the knee joint. Most of the lesions found were of lower grades, but the fact that these lesions have a poor healing capacity raises concerns. However, the natural history of cartilage lesions is so far unknown, and further studies are needed to determine the groups of patients that will mostly benefit from cartilage repair procedures.

FINITE ELEMENT ANALYSIS OF THE MEDIALISATION TECHNIQUE IN TOTAL HIP REPLACEMENT OF THE DYSPLASTIC HIP

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Preoperative planning is one of the most important steps that need to be performed before total hip arthroplasty. In cases of hip dysplasia, this is an even more demanding task. A method of obtaining sufficient cup coverage in these situations is the use of the medialisation technique. **The aim** of this study was to evaluate the stress patterns generated by different positioning of the acetabular cup in terms of medialisation, which would make it possible to determine the ideal degree of medialisation to obtain a strong fixation and maintain adequate bone stock. Using the finite element method we generated a three-dimensional model of the right acetabulum, with an inserted press fit cup, to calculate stress patterns in the standing phase during walking. In this study we analyzed the stress patterns at different degrees of medialisation of a hemispherical press fit type cup. The stress patterns in implant component and adjacent bony structures were calculated in a directly postoperative situation and the von Mises stress profile was assessed. **Results:** we found that the different degrees of medialisation induce different stress patterns, deformation and shifting tendencies. The stress profile was improved with medialisation of the acetabular component up to a point, after which the value of the safety factor decreased considerably – with increased compressive stress in the superior section of the acetabular base. **Conclusion:** our study has shown that three-dimensional stress calculations are important to obtain additional biomechanical information to augment clinical studies, evaluate implants and determine stability prognoses, and also to determine the ideal placement of the acetabular component for long term stability.

HYGIENE, HEALTH EDUCATION, LEGAL MEDICINE, MICROBIOLOGY, EPIDEMIOLOGY, SOCIAL SCIENCES

THE ANALYSIS OF DIFFERENT PREVENTIVE ACTIVITIES

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In order to improve the health state of the population, three important methods are available: 1. lifestyle reform among the population, 2. primary, secondary and tertiary prevention, 3. the development of health service system. The medical information of the population is an useful method of primary prevention. Health education and promotion is an obligation of governmental sector which can be helped by the widespread activities of nongovernmental organizations and churches. An example of good collaboration is presented in a study based on a survey using an anonymous questionnaire and on anthropometric and biochemical examinations among the participants of the medical informative programs organized in different Transylvanian towns. The results were analysed depending of sex, age, education, residence, nationality, religion, familial status. The highest interest was realized among the medium educated old women living in families. Another example is the preventive activity of medical students from Târgu-Mureș holding health education lessons with different topics: tabagism, alcohol consumption, drug consumption, sexually transmitted diseases, contraception–family planning, healthy nutrition, cardiovascular diseases and their prevention, dental care, cancer prevention, mental hygiene etc. Our study underlines the importance of prevention and concludes the importance of making more efforts in order to activate the younger generation in health education. It is proposed the better following of the persons who are exposed to higher risks, and it is welcome the counseling in order to change in a positive way their lifestyle and life mode.

DRUG CONSUMPTION HABITS AT THE 2010 PENINSULA FESTIVAL IN TÂRGU MUREȘ

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Introduction: Romania is on the fourth place in the European Union according to the European Commission considering the consumption of ethnobotanical drugs with a psychotropic effect. The use of the products sold through these commercial channels was far from safe, as based on the data gathered by the Ministry of Health in Romania in 2009 more than 1300 persons, mostly young people asked for medical help being seriously poisoned by ethnobotanical drugs. **Material and method:** On a festival called “Peninsula Music Festival 2010” (in Târgu-Mureș) we examined the drug usage habit of 526 young participants with a questionnaire method. **Results:** Gender distribution of sample: 59.37% man and 40.63% woman. Mean age 21.60 years, SD: 4.33 years old. 9.27% of the sample consumes regularly (weekly) ethnobotanical drugs, 6.06 % of the sample consumes regularly marijuana, 4.2 % of the sample consumes regularly amphetamin (speed), 0.8% of the sample consumes regularly heroin. It is a strong correlation ($p < 0.01$) between drug consumption and other addictions (tobacco, alcohol). **Conclusions:** The frequency of drug trials grows among the youth, the habits of drug use change, ethnobotanical drugs and cannabis derivatives dominate while the proportion of opiate users is decreasing. The practical use of the survey results contributes to underline the importance of the development of health education programs, drug-prevention strategies.

HEALTH EDUCATION IN SCHOOLS

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Health education is the cheapest method of primary prevention. **The aim:** of our activity was to organize health education in schools of different Romanian Counties, especially Mures County, with the participation of 6th year medical students from the Faculty of General Medicine. **Material and methods:** all 6th year General Medicine students were assigned to deliver a one hour lecture about different topics in health education for school children, in different classes and in counties where they come from. **Results:** approximately 80% of these students carried out their assignment and they lectured 1200 hours of health education in schools. The most frequently chosen themes were: sex education, personal hygiene, healthy diet. They also delivered lectures about: drugs, smoking, sexually transmitted diseases, alcoholism, etc. **Conclusions:** during 2007–2011, medical students in their 6th year of study from the Faculty of General Medicine, contributed with about 1200 hours to raise awareness in the domain of health education in at least 36000 pupils.

Keywords: health education, primary prevention

A POPULATION BASED STUDY ON AWARENESS OF DRUG USE IN TÂRGU MUREȘ

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Aim: The aim of this study was to analyze the behaviour of the population of Targu Mures regarding drug use for mild diseases and to study their habits of drug use. **Material and methods:** This study is based on a questionnaire, which is a stratified random sampling, comprising 166 respondents from the urban area. Statistical data processing was performed with SPSS software. **Results:** The phenomenon of self-medication is also present in the population of Targu Mures, this group of people want to have the freedom to decide upon their own treatment in case of mild health conditions. In case of mild diseases, over 33% of the respondents rely on their experience and knowledge regarding drug use, the other third turn to their family doctor for advice, pharmacists are consulted in 25% of the cases, and 9% seek for help among family members. Those who seek medical advice from their general practitioner are mostly elderly people (over 60), with a low household income and low education level. The sequencing of factors that influence the choice of drug treatment, established by respondents according to importance places doctor's recommendation on the first place (70.48%). When taking the decision to use a medicine, previous personal experience with a certain drug is important for 47.6% of the respondents and the pharmacist's recommendation for 42.17% of them. There is a significant difference concerning awareness on adverse reactions of drug use, contraindications and drug interactions among people with higher education in comparison with people who graduated only middle school. **Conclusions:** Public awareness regarding the use of drug is very important, because people should all know about both benefits and risks of self-medication. For anyone who would like to search for information about health issues the internet is an important and more and more widespread source, but there is also the risk of misinformation.

THE EFFECT OF SOME IRRITANT GASES AND VAPOURS TO THE WORKERS EXPOSED IN THE SHOE INDUSTRIES

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The irritant gases and vapours provoke an acute inflammatory response in the contact level, do to an abnormal excitation of the receptors in the respiratory tract, skin, conjunctiva, and mucosa do to a chemical reaction with injury at the contact level.. The irritant gases and vapours could be skin irritant, eye irritant, and respiratory irritant. The skin manifestation the exposure to the irritant vapours and gases may cause chemical burning at the contact point , similar with corrosive liquid .After they effect the irritant gases could be primary and secondary irritants, who have effect both local and systemic way, for example NO₂, H₂S. The effect to the respiratory system depends to the solubility of the chemicals in water, the PH of the inhalant gases, the exposure level, the chemical reactivity .Those who are very soluble in water, such are ammoniac, sulfure dioxide, may cause irritant reaction in the upper respiratory tract, and those who are liposoluble affect the lung. I present the cases of two workers in the shoe industries, exposed accidentally to a solution who have a very irritant effect in the contact level .One of the workers was smoker, the other was not. The 2 patients worked in the finishing hall having the task to pulverize a finishing solution to the shoe, in one hand fixing the shoe, in the other hand the pulverizing pistol with the finishing solution. Before the hospital admission the patients used a new finishing solution, who provoked some irritant phenomena at the contact level, such are the irritant skin manifestation on the hand, eye, and respiratory tract within seconds or minutes, causing mucous membrane irritation, with dyspnea, marked cough, sore throat, wheezing, reflex bronchoconstriction, nausea, vomiting, phenomena who ceased after the removal of the patients from the working place. The association between exposure and prevalence of respiratory symptoms was greater in smokers than in ex-smokers and non smokers. The two cases was declared also as occupational diseases.

SHOT WOUND – ACCIDENT OR SUICIDE? - CASE PRESENTATION

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Introduction: The purpose of this paper is to present the severity of some traumatic lesions which occur by shooting with firearms. It is a well-known fact that firearms are considered the most dangerous attack weapons available to humans and the traumatic lesions produced by them have a strong destructive effect upon human tissue, most frequently resulting in the death of the victims. **Material and Method:** For this case presentation, from the archive of The Institute of Legal Medicine we selected the case of a man who was found dead one morning on a lake shore where he had gone hunting. **Results and discussions:** Case presentation. The victim, a 20-year-old man accompanied by some friends, had gone hunting, possibly poaching. The preliminary examination carried out at the crime scene revealed that the clothes of the victim were soaked in blood. It was suspected that the death of the man had been

violent and a forensic investigation on the corpse was ordered. The necropsy revealed traumatic lesions located on the cervical region, lesions that were incompatible with life and which proved to have been caused by shooting. The regime of weapons and ammunition in our country is governed by law no. 295/ June 28 2004, Chapter I, General Provisions to Article 1: the regulatory areas establish the categories of weapons and ammunition and the conditions under which possession, carrying, use and operation of these weapons and ammunition are allowed in Romania. **Conclusion:** Lesions caused by firearms have a strongly destructive effect which greatly depends on the type of the weapon, on the shooting distance, as well as on whether the projectile meets obstacles in its trajectory, obstacles which slow its speed and destructive force.

Keywords: weapons, suicide, murder.

URINARY TRACT INFECTIONS IN A PRIVATE LABORATORY - ETIOLOGY AND ANTIBIOTIC RESISTANCE

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Urinary tract infections (UTI) are a common problem worldwide, being imperative to identify the populations at risk and the strategies to be followed for an effective treatment, both medically and by costs. **Purpose:** Evaluation of UTI cases in a specialized private laboratory for a period of one year. **Materials and methods:** In this retrospective study we have analyzed the microbiological results of urine samples, collected from 695 patients between January–December 2010. Statistical analysis was performed following the positivity degree of the samples and the etiology, according to sex, age, time of year. The antibiotic resistance spectrum of the predominant strains was also analyzed. **Results:** The degree of positivity was 19.6% (136 positive samples of 695 collected samples), in higher percentage for female sex (20.2%) than for males (16.8%), but with no significant statistic difference ($p=0.46$). Most samples were collected from females (81.15%) and from 20–29 years age group, with the highest percentage of positivity in the group over 70 years. 41% of positive samples came from four cold season months (January, February, November and December). The identified bacterial species were *E. coli* (81.62%), *Enterococcus* spp. (6.62%), *Klebsiella* spp., *Staphylococcus* spp., *Proteus* spp., *Enterobacter* spp. and *Pseudomonas* spp. The antibiotic susceptibility testing of *E. coli* showed an overall average resistance. Extended spectrum beta-lactamases producing strains (ESBLs-12.61%) showed resistance to all antibiotics in a degree of more than 50% and 100% sensitivity only to imipenem. **Conclusions:** UTI are more common in women and in persons over 70 years. The most common etiologic agent is *E. coli*. The treatment should be administered according to the antibiotic susceptibility testing, given the high resistance level, particularly in ESBLs strains.

LINKS BETWEEN BREASTFEEDING OF THE NEWBORNS AND THE OBESITY RISK

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Objective: To analyze the possible correlations between breastfeeding habit and birth weight of newborn, which may be used in a screening as predictors of the occurrence of obesity in children. **Methodology:** There were studied two groups of children, a group of children with normal weight obesity and a lot of these groups with a similar age and sex structure, in 2009–2010 at Department of Pediatrics no. II in Târgu Mureş. **Results:** The data we've gathered have placed the Mures area as a county with moderate obesity levels for children. The connection between being born overweight and a subsequent obesity is significant with boys, but we cannot demonstrate such a connection between obesity and birth weight in this case. Within both groups, most of the children have been breastfed: 72.58% of the overweight, and 41.66% of the children with normal weights. Obesity within the study group can be positively correlated with breastfeeding. **Conclusions:** We emphasize the importance of more careful monitoring of obese children under 2 years correlated with sex and age, in order to prevent obesity.

Keywords: breastfeeding, obesity, BMI, pregnancy

COMPARATIVE EVALUATION OF THE EFFECT OF STERILE WATER AND POVIDONE IODINE SOLUTION FOR PERIURETHRAL CLEANSING BEFORE INSERTION OF AN INDWELLING URINARY CATHETER

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Background: Urinary tract is normally uncontaminated, instead distal urethra can present a very microbial flora, being contaminated with organisms from the genital area or the colon. Microbial colonization of the distal urethra explain why the vast majority of cases

is performed quantitative urine culture. Catheter-associated urinary tract infection is the most common nosocomial infection. **The purpose** of this study was to compare the risk of acquiring symptomatic urinary tract infections through the conventional practice of using sterile water versus povidone iodine for periurethral cleansing before insertion of an indwelling urinary catheter. **Methods:** A randomized controlled trial was used, to either of 2 groups, in which sterile water (the „sterile water” group) and povidone-iodine (the „povidone-iodine” group) was to be used for peri-urethral cleansing prior to catheterization. A urine specimen was collected immediately before and 24 hours after catheter insertion. **Results:** The sterile water group had 54 patients and the povidone-iodine group had 56. Urine cultures were positive in 12% of patients in the povidone-iodine group and in 14% in the water group. There was no significant difference in signs and symptoms between the 2 groups. There was no significant association between solution preparation and cultures on univariate regression analysis. **Conclusions:** Cleaning the periurethral area of patients with sterile water prior to catheterization is not inferior to cleaning with povidone-iodine.

Keywords: urinary catheter, nosocomial infection, povidone-iodine.

SOCIAL PEDAGOGICAL DIAGNOSIS OF THE MURES TEACHERS

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The analytical approach taken of the socio-professional categories in the Mures county area, which requires a methodology that infers Investigation,we tried to identify and also to configure the social status of the teacher in some social-demographic indicators,indicators wich are in conjunction with certain psiho-pedagogical features,allowing them to overcome a general representation specific to the collective mentality, providing probalistic statistical information that can create a much better collectiv image under identity report,beyond these collective representations. Regarding the methodology used, I note that the analysis undertaken are responses of sampled subjects to standardized questions contained in the “Interview Guide” applied directly or indirectly to subjects or relatives—their approach. Responses which highlight some of socio-pedagogical and demographic features, being found in the content of their biography,and which from their primary processing we have transformed to evaluative indicators that aime to: sex, age, marital status, family structure in terms of teaching activity, professional ascendancy of the parents, residential area of origin and environment, geographical area where they activity took place, educational level of the school, the scientific activity and the scientific titles, social-political status. Regarding the sample structure we specify that the teachers included in this volume are random,and voluntarily could participate any teacher without any restriction,participation given the degree of responsibility in relation to present and posthumous recognition. The randomness of the sample has made it difficult to proces the data,requiring a certain reserve on the validity of the data,they do not meet altogether reality,assuming a margin of errors due to this “vice of the procedure” invoice methodology. This kined of reserve is also motivated by the unilateral character of the research methodology,summirizing only to some of the biographical data included in the sample,withouthaving any dialogue—either directly or indirectly—with them,outside the interviewguide could not use other methods and sociological technics other then the content analysis and statistical processing of key measurable indicators converted into evaluative dimensions. However, if we approach the reality, it merely makes us happy,our effort along with some col-laborators with students in the UMF Tg-Mures is not in vain and that such curiosity how is that related to questions aimed at certain social-pedagogical and demographic parameters at least in part it is satisfied,giving those interested in such a pedagogical and social profil on this kined of professional categories wich was much more appreciates in the past than it is in the present. Without going into details, we mention that the results of the investigational approach taken in the 1000 biography of the “Teachers in Mures”, included in 5 volumes, belonging to all levels of educational institutions,wich gives us a real teachers status,without such a socio-pedagogical and demographic radiography remaining “prisoners” to a distorted mentality and images on the socio-professional categori being in a socially unfavorable circumstances in this current political management of the Romanian society, and the discrimination phenomena and social exclusion becoming a reality peremtorie wich no longer needs any demonstrative argument.

IDENTIFICATION OF MOTIVATIONAL LOGISTICS IN CHOOSING THE SPECIALIZATION „MILITARY MEDICINE” BY THE STUDENT

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Aim: The study tries to identify the motivational elements that stand at the basis of choosing by the medicine student the speciality of military medicine, underlining the methodological strategy applied from a military and educational perspective necessary to the future military doctor, starting from the office and ending with the theatre of war operations. **Materials and methods:** In its research and development demarche were identified and applied methods like: observation, dialogue and questionnaire, applied to a 56 group of students from the Faculty of Medicine, speciality Military Medicine from the University of Medicine and Pharmacy, Târgu Mureș in academic year 2010–2011. The questionnaire registered in a given time: the information, the quality, the motivation, the value the evolution and the opinion of an age and also of its identity under various aspects concerning actually the personality of the investigated one—the student. **Results:** From the investigations and registering the data surprised mostly by the questionnaire and its decoding,

it is remarked the fact that at the basis of profile-portrait of the student from military medicine we can find: intelligence, ambition, seriousness, perseverance and adding during study years: responsibility, discipline, courage, all based on honesty, competence and even passion that can mark the future medico-military activity, motivating the choice. **Conclusions:** We can especially remark the fact that by choosing this speciality the student is motivated from the perspective of the chosen “weapon” this one being... the stethoscope but also by the fulfilling and professional achievement through rigor and moral creed, but also through an exceptional training from this University of Medicine and Pharmacy where he feels: seen, listened, appreciated, but mostly completes himself as a man in which is invested work and wisdom with a huge professional probity from the academic teaching staff.

PEDIATRICS, NEONATOLOGY

SPLENECTOMY IN PEDIATRIC HEMATOLOGIC DISEASES

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Background and Objectives: splenectomy is a therapeutic option in various hematological diseases. The purpose of the study was to evaluate the efficacy and safety of splenectomy in pediatric patients diagnosed with hematologic disease at the Department of Pediatrics of Târgu Mureș. **Methods:** fifteen pediatric patients (7 girls and 8 boys) who underwent splenectomy were evaluated in a retrospective study. **Results:** the patients had a mean age of 127 months. Splenectomy was needed and done in 8 cases of idiopathic thrombocytopenic purpura, 6 cases of hereditary spherocytosis and 1 case of autoimmune hemolytic anemia. The mean time interval from the moment of diagnosis to the splenectomy was 62.5 months. No emergency splenectomies were needed, all cases underwent a planned intervention and 66% of the patients were vaccinated before the procedure. 13 cases showed an excellent response with full control of the disease, 1 patient had an incomplete response and no response occurred in 1 case. The overall postprocedure morbidity was 13.5% due to infectious complications. **Conclusions:** splenectomy is one of the therapeutic methods in pediatric hematological diseases. The obtained results show that splenectomy is safe and efficient in these diseases and improves the quality of life of patients.

Keywords: pediatric, autoimmune hemolytic anemia, idiopathic thrombocytopenic purpura, splenectomy

A RARE CASE OF HEPATIC FAILURE OF UNKNOWN CAUSE IN AN 1 YEAR OLD CHILD

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Hepatic failure in children is a rare condition and it is due especially to hepatitis. A rare case of hepatic failure in an 1,7 year old child is reported. The patient presented with vomiting and hypotonia. In the day of admission she had seizures, no fever. A meningitis was ruled out by lumbar puncture; as blood sugar was high, a diabetes mellitus was suspected and insulinotherapy was started. After 2 days, melanic stools were observed and laboratory confirmed occult bleeding. Hepatic enzymes, LDH and bilirubin were elevated: the child had peritoneal and pericardic liquid and she was referred to our hospital, to be treated as diabetic. As the diagnosis of diabetes was not well supported, insulin therapy was stopped. Other conditions leading to hepatic failure were ruled out by laboratory testing: hepatitis A and B, sepsis, perinatal infections. A transient palsy of the right leg was suspected as the expression of an intracerebral disease, but neurosurgical exam and CT scan ruled out these condition. The evolution was excellent, with restitutio ad integrum and all laboratory results were normal.

COMMON VARIABLE IMMUNODEFICIENCY DISORDER - CASE REPORT

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Common variable immunodeficiency disorder (CVID), the commonest symptomatic primary antibody deficiency syndrome, is characterised by recurrent bacterial infections, particularly of the upper and lower airways; it is also associated with an increased incidence of autoimmune and neoplastic disorders. CVID has a high prevalence of infectious, inflammatory and neoplastic gastrointestinal diseases. Up to 60% of the patients with non-treated CVID develop diarrhea and 10% associated idiopathic malabsorption with weight loss. A 38-year-old man was referred to our hospital with the complaint of chronic diarrhea. He had experienced diarrhea without mucus or blood in the past years and had lost 30kg. In her medical history, he had suffered from recurrent infections, and serum immunoglobulin levels were low. Diagnosis of celiac disease was established in 2006 and hypoproteinemia masked the origin of the recurrent infections and the primary hypogammaglobulinemia remained undisclosed for a longer period. In conclusion, we report the case of a patient with CVID-related chronic diarrhea who was treated like celiac disease nonresponsive. In such cases with chronic diarrhea, common variable immunodeficiency should be kept in mind as a possible cause. Because of its variable clinical manifestations and age of declaration, CVID can mimic different other pathologies and is therefore frequently diagnosed in a later stage of the disease. However, as a consequence of late diagnosis, irreversible organ damage can have occurred.

Keywords: Common variable immunodeficiency. Diarrhea.

NEW THERAPIES FOR NEONATAL RESPIRATORY FAILURE

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Background: High frequency oscillatory ventilation (HFOV) is a type of mechanical ventilation that uses a constant distending pressure-mean airway pressure (MAP)-with pressure variations oscillating around the MAP at very high rates (up to 3000 cycles per minute). Potential advantages of this technique over conventional mechanical ventilation (CMV) include the use of lower proximal airway pressures, the ability to adequately and independently manage oxygenation and ventilation while using extremely small tidal volumes often less than the dead space, and the preservation of normal lung architecture even when using high MAP. HFOV is a safe alternative to conventional mechanical ventilation (CMV) and may even be life saving when used as a rescue therapy. It is better than CMV in causing less baro-volutrauma and can be accepted as one of the first line treatment for respiratory distress syndrome (RDS) in premature infants. The indications of HFOV are: persistent pulmonary hypertension of the newborn (PPHN), meconium aspiration syndrome (MAS), air leak syndromes (pneumothorax, pulmonary interstitial emphysema), pulmonary hypoplasia, failure of conventional ventilation in the preterm infant (severe RDS, air leak syndromes). **Material and methods:** The authors present three cases of severe respiratory failure in newborns treated in Newborn Intensive Care Unit Tg. Mureş, with HFOV. Intubation and HFOV were initiated when infants exhibited arterial hemoglobin saturations $SaO_2 < 85\%$ while receiving $FiO_2 \geq 40\%$ and/or arterial $PCO_2 > 60$ mmHg, $pH < 7.20$, Oxygenation index $(OI) = (MAP[cm H_2O] \times \text{fraction of inspired } O_2 [FiO_2] \times 100 / PaO_2) > 20$. We used Sensormedics 3100A machine. **Results:** Diagnosis of severe RDS and pneumothorax was based on clinical symptoms and chest X-ray findings in a 32 weeks gestational age newborn, birth weight 1750 gramms. HFVO was initiated after surfactant replacement and failure of CMV. The duration of HFVO was 3 days, followed by CMV for 5 days, with good outcome. The second case was a 40 weeks gestational age newborn diagnosed with PPHN secondary to congenital pneumonia with grup B streptococcus. The treatment included antibiotic therapy, oral sildenafil administration associated with HFVO for 10 days, until IO decreased < 20 , with good outcome. The third case was a 41 weeks gestational age newborn diagnosed with meconium aspiration syndrome associated with PPHN. HFVO was initiated in the second day of life. The duration of HFVO was 4 days, followed by CMV for 7 days, with good outcome. **Conclusions:** the good outcome of these cases may be related to the ventilation strategy (HFVO) and to adjunctive therapies used to manage the pulmonary dysfunction.

Keywords: newborn, HFVO, ventilatory strategies

CLINICAL FEATURES AND HISTOPATHOLOGICAL SPECTRUM IN ADOLESCENT ONSET NEPHROTIC SYNDROME

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Objectives of study: The adolescent population signifies the transitory period where the frequency occurrence of different histopathological lesions in patients with nephritic syndrome is different from that seen in the pediatric population less than 12 years of age as well as that seen in adults. **Methods:** We evaluated clinical features, laboratory data and histopathology of 65 children with nephrotic syndrome seen at the 2nd Pediatric Clinics from Târgu-Mureş. **Results:** 13 patients (53.8% girls, average age at diagnosis 13.63 ± 1.9 years) with nephrotic syndrome having its onset between 12 to 18 years of age were included in this study. 3 patients were diagnosed with steroid resistant nephrotic syndrome and one patient with steroid dependent nephrotic syndrome. 8 patients had impure nephrotic syndrome, microscopic haematuria was present in 3 (23.07%) patients, hypertension in 8 (61.53%) patients. Percutaneous renal biopsy was performed in 4 cases (30.76%), presenting minimal change disease (MCD), focal segmental glomerulosclerosis (FSGS), membranoproliferative glomerulonephritis (MPGN) and membranous glomerulopathy (MGN) in one (7.69%) patient each. **Conclusions:** The impure form of nephrotic syndrome is more frequent than in younger patients. Adolescent nephrotics with microhaematuria, hypertension at presentation as well as a steroid resistant state have lesions other than MCD. According to literature data the incidence of FSGS has increased in the second half of last decade, but it wasn't confirmed in our study, probably due to small sample.

MINIMAL RESIDUAL DISEASE ASSESSMENT IN LEUKEMIC PATIENTS WITH WT1 GENE EXPRESSION MEASUREMENT IN PERIPHERAL BLOOD

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Introduction: WT1 gene, localized on the 11p13 region of the human genome has a definitive role not just in the development of the uro-genital system, but also in regulation of cell proliferation and differentiation. WT1 gene is overexpressed in 70–90% of leukemic cells, irrespective of the type of leukemia. WT1 gene expression in peripheral blood may detect minimal residual disease in all types of leukemia, its serial measurement can monitor the results of treatment and identify patients with imminent relapse. **Material and methods :** Clinical and laboratory data were collected from 34 children treated for different types of leukemias (acute lymphoblastic leukemia, acute myeloblastic leukemia and chronic myelocytic leukemia). Two ml peripheral blood in EDTA tube was sent to the Molecular Biology Laboratory of our university for WT1 gene expression measurement with RT-PCR technique. Total RNA was extracted from 1 ml blood with Qiamp RNA Blood Mini Kit (Qiagen Group). TaqMan real-time quantitative PCR amplification reactions were carried out in an AB 7500 Real-Time PCR System. Total RNA from each sample was used to synthesize cDNA using High Capacity cDNA Reverse Transcription Kit according to the manufacturer's instructions (Applied Biosystems, USA). **Results:** Among the 34 patients evaluated, 30 had acute lymphoblastic leukemia (ALL), 2 patients were treated with chronic myelogenous leukemia (CML) and 1-1 patient with acute myeloblastic leukemia (AML) and relapsed Hodgkin disease (HD). We found 17 positive results for WT1 gene expression in the peripheral blood of the assessed subjects. The measurements were made at 0–41 months after diagnosis. In 5 patients the WT1 gene expression was assessed at diagnosis, before any specific treatment, all results were positive, with higher quantitative expressions in high risk patients and T-cell ALL. Another 5 patients were assessed after 1 month of antileukemic treatment, out of them only 1 patient had positive WT1 gene expression. Eleven patients assessed after 7–41 months of antileukemic treatment were positive for WT1 gene expression so far. One patient with minimal residual disease demonstrated by PCR test, expressed WT1 gene in his peripheral blood sample and continued specific treatment. One patient relapsed one year after her negative WT1 gene result. Among the two patients treated with CML, WT1 gene expression correlated well with the level of BCR-ABL transcripts from peripheral blood. The patient who achieved major molecular response with BCR-ABL assessment by qRt-PCR was also negative for WT1 gene expression and the other patient who was positive for BCR-ABL rearrangement, had an elevated WT1 gene expression level in his peripheral blood. **Conclusions:** 1. All patients expressed the WT1 gene in their peripheral blood if they were tested before treatment. 2. One month of effective antileukemic treatment can lead to negative result regarding WT1 gene expression in peripheral blood. 3. In CML patients the WT1 gene expression correlates well with the BCR-ABL transcript levels in peripheral blood. 4. Serial measurements of WT1 gene expression are needed to foresee an imminent relapse.

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THE IMPORTANCE OF MALNUTRITION RISK ASSESSMENT IN CHILDREN

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Malnutrition is a deficitary state of nutrition which measurable consequences at the level of the tissues, in body shape, functions of organs and systems. The child's malnutrition is an important problem of public health, with a bad influence on growth, development, general wellbeing and health, which implies high costs by high risk of infection and prolonged hospitalization. Thus, not only malnourished children need a special attention, but also malnutrition prevention has a great importance. In this way, is very useful to perform a screening to detect children with risk for developing malnutrition. For acute malnutrition, the risk factors are: heart diseases, renal, neurological diseases, malignancies, muscular disease, cystic fibrosis, while for chronic malnutrition: heart, renal diseases and other general diseases. **Aim:** We decided to assess the risk of malnutrition in a group of hospitalized children, based on Dutch's study (Strong kids). **Material and methods:** We conducted a prospectiv study between August–October 2011 on 173 children hospitalized in Clinic of Pediatrics I Tg. Mureș. **Results:** From those 173 hospitalized children assessed in these period, 78 (45.08%) were females and 95 (54.91%) males, with an average age of 63.82±58 months (5 years). In 43 cases we found affections which lead to malnutrition, such as a heart disease, celiac, metabolic, muscular diseases, pancreatitis, trauma and so on (24,85%). After risk grade we have noticed in 88 children (50.86%) a slight risk of malnutrition, average risk of malnutrition in 73 patients (42.19%), increased risk of malnutrition in 12 patients (6.93%). Between different diseases and the risk of developing malnutrition it has been noticed a statistical significant correlation ($p=0,001$). The symptoms detected in study group were: diarrhea/vomiting in 9 cases (5.20%), lack of appetite in 35 children (20.23%), weight loss or poor weight gain in 8 patients (4.62%) and insufficient dietary intake due to pain in 17 cases (9.82%). **In conclusion:** the global risk of malnutrition in the studied group was 52.11%, a risk comparable to the one from the reference study (62%); our lower value could be explained by the smaller number of assessed cases. The importance of assessing the risk

derived from early detection of this status, in order to promptly apply the adequate nutritional measures to reduce the incidence of malnutrition and its complications, which implies decreasing its expenditure.

ETHICAL PROBLEMS AND THE PARENTAL VETO RIGHT IN A COMPLEX GENETIC SYNDROME

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Introduction: Complex cases are accepted for diagnosis and treatment in 3rd level centers. There are cases in which the complexity and the long term prognosis would require palliative care, without aggressive neonatal intensive care. In these cases the therapeutic decision may be vetoed by the parental rights. **Methods and materials:** The authors present a case of 18p duplicity which involved a complex, ductus-dependent congenital heart disease where the parents required complex therapeutic intervention, no matter of the long term prognosis of the genetic syndrome. **Results:** P.A.Zs, a SGA term baby, born with 2350g, with facial dysmorphism was transferred from a level I maternity for respiratory distress. After clinical exam and diagnostic procedures we diagnosed aortic coarctation, small left heart cavities and the genetic testing confirmed 18p duplicity. The pediatric cardiologists recommend conservative therapy, due to the complexity of the case and the long term prognosis. The parents insist on complete therapy, no matter of consequences. **Conclusions:** We would need a multidisciplinary committee to establish the adequate therapeutic attitude in cases with a poor prognosis, yet the parents have veto right after they have been given appropriate informations.

DEATH RISK FOR EXTREMELY LOW BIRTH WEIGHT PRETERM INFANTS: THE PREDICTIVE VALUE OF COMMONLY MEASURED VARIABLES AND AN EVALUATION OF DEATH RATE DIFFERENCES BETWEEN THREE FACILITIES

Suci Laura Mihaela, Cucerea Manuela, Simon Marta, Gall Zsuzsanna

Background: Preterm birth is one of the most important contributor to neonatal mortality in Romania. Mortality risk are especially high in very low birth weight and survival is even less certain in the extremely low birth weight preterm neonates (less than 28 weeks gestational age and less than 1000grams birth weight). **Aim:** Our study purpose is to test and compare neonatal mortality prediction value of commonly measured variables (gestational age and birth weight) and to predict the probability of survival rather than to investigate a single specific risk factor on a population of live-born infants. **Methods:** Data were collected on 227 extremely low birth weight preterm infants admitted to three Neonatal Intensive Care Units between January 1, 2007 and December 31, 2010. The calibration (closeness of total observed deaths to the predictive total) was assessed using the mortality ratio. Discrimination was quantified as the area under curves (AUC) for the receiver operating characteristic curves. The observation period was 28 days (neonatal mortality). Since late deaths are very small fraction of the mortality in this population it is expected that longer observation will not affect the choice of variables. **Results:** Overall survival of infants admitted in three centers was 53%, 29%, and 25%. Predictive value for neonatal mortality of gestational age AUC was: 0.85 (0.75–0.94), 0.81(0.74–0.89), and 0.71(0.61–0.80), respectively. Predictive value for neonatal mortality of birth weight: AUC was 0.62(0.49–0.75), 0.77(0.70–0.85) and 0.67(0.56–0.77). When comparing the multivariate model to birth weight and/or gestational age the largest differences were an AUC 0.62 for birth weight compared to AUC 0.89 for multivariate model. **Conclusions:** Gestational age prediction performs better than birth weight for neonatal mortality. Multivariate models can predict mortality better than birth weight or gestational age alone in extremely low birth weight infants.

RENAL ECTOPY DISCOVERED ULTRASONOGRAPHIC IN THE PATHOLOGY OF THE II PEDIATRICS HOSPITAL IN TG. MURES

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Introduction: Renal ectopy is a congenital anomaly which has variable clinical presentations. **Objective of the study:** This study was conducted to aim the prevalence of renal ectopy in patients with or without symptoms. The patients were evaluated in our hospital using ultrasound. **Methods:** Through 10500 abdominal ultrasonography examination in the last 7 years, 21 cases of renal ectopy were discovered. The examination took place in the II Pediatrics Hospital in Tg. Mures. **Results:** Out of 21 cases 12 were affecting the right kidney, in 8 cases the left kidney and in one case there was a bilateral renal ectopy. 13 children had an urban background and 8 children were raised in rural conditions. 7 cases were discovered incidentally, 8 patients had abdominal pain and 6 had signs of

urinary tract infection. Through the ultrasound we can establish that the ectopic kidney is usually characterised as being hypoplastic or hypodysplastic, hydronephrotic, malrotated or having duplicated collecting systems. **Conclusion:** The occurrence rate of ectopic kidney in a general population is 0.22%. This data is conform with other studies conducted and published in the literature (according to a study from 2008 the occurrence rate was 0.2%).

DENTAL MEDICINE

CLINICAL EVALUATION OF A NANOFILLED FISSURE SEALANT PLACED WITH 2 DIFFERENT ADHESIVE SYSTEMS: 2 YEARS RESULTS

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Objective: The aim of this study is to compare the retention rates of a nanofilled occlusal fissure sealant placed with the use of an etch-and-rinse or a self-etch adhesive over 24 months. **Methods:** 84 sealants were placed on the permanent molars of 24 subjects who had no restorations or sealants present on the fissures and no detectable caries. The sealants were placed with either SoloBond M two-step etch-and-rinse adhesive or FuturaBond NR one-step self-etch adhesive. Clinical evaluations were done at baseline and at 6-, 12-, 18- and 24-month recalls. Each sealant was evaluated with the following criteria: 1=completely retained; 2=partial loss; 3=total loss. **Results:** For the 2 years recalls, complete retention rates of 86,36% for the SoloBond M group and 27,5% for the FuturaBond NR group were observed. There was no new caries formation throughout the 24-month recall period. **Conclusion:** Fissure sealants placed with etch-and-rinse adhesive showed better retention rates than those placed with self-etch adhesive.

IMPACT OF CARIES EXPERIENCE IN THE PRIMARY TEETH ON THE EMERGENCE OF THE SUCCESSORS IN CHILDREN UNDERGOING CANCER THERAPY

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Background: The evaluation of the oral and dental status in children diagnosed with hematological malignancies emphasized the high frequency of the simple and complicated untreated carious lesions at the level of primary teeth. **Aim:** We proposed to evaluate the incidence of the carious lesions of the primary teeth and the emergence patterns of permanent teeth in a group of children with malignant conditions compared to a cohort of healthy children and also to appreciate if cancer therapy influences the emergence patterns of permanent teeth. **Methods:** We included two groups of study made of children aged 8–11 with mixed dentition and no dental agenesis. For each child included in study we determined the caries intensity with the help of dmft individual index and the emergence sequence of the permanent teeth in the four oral quadrants. The frequency of each emergence pattern in healthy and diseased children and the association between that particular pattern and the oncological condition was established with the help of statistic calculation (chi square test). **Results:** Our results focused on two aspects: caries experience and patterns of permanent teeth emergence. The value of dmft index was between 1 and 4 in almost 40% of healthy children and in over 30% of children with malignancies. As far as patterns of permanent teeth emergence are concerned, in the mandible the favourable sequences occurred in 41% of healthy children and in 31% of diseased children. On the other hand, the unfavourable emergence patterns represented a share of 21% of the total of sequences in healthy children opposed to 7% in children with malignant conditions. No statistical association between oncological diseases and emergence pattern was found because the value of p was higher than 0.05. **Conclusions:** The values of the intensity indices of caries in primary teeth are very high in the second phase of mixed dentition in both groups of children. The malignant condition and chemotherapy do not fundamentally influence dental permutation. We did not notice significant associations from a statistic point of view between the emergence patterns and the malignant disease.

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INCIDENCE OF TOOTH EROSION IN A COHORT OF YOUNG ADULTS - A TWO YEARS LONGITUDINAL STUDY

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Aims: The present study was aimed to assess the incidence and distribution of tooth erosion in young adults over a two years period. The further aim was to evaluate any association between acidic dietary habits and erosive lesions. **Methods:** The study sample consisting of 124 young adults, aged 18 to 27 years, (mean age 22.5±3.4) were examined in November 2009 and re-examined in October

2011 in Târgu Mureş. Participants were asked to complete a multiple-choice questionnaire on dietary habits. For the assessment of erosive tooth wear the erosion index according to Lussi (Lussi, 1996) was used. Data analysis was performed by Graph Pad Prism software using Chi² test. Relative risk (RR) was estimated at 95% confidence interval (CI). The level of significance was set at $p < 0.05$. **Results:** Subjects with regular exposure to acidic beverages had an increased risk RR 4.08 (CI 1.18–14.05) for erosion ($p = 0.02$). The incidence of dental erosion was 18% in investigated young adults. The distribution of the erosive lesions on tooth surfaces was as follows: occlusal 44%, facial 43% and oral 13%. **Conclusions:** The results seem to indicate that dental erosion is high in investigated young adults. Acidic dietary exposure on a regular base might represent a risk factor in dental erosion.

CLINICAL AND RADIOLOGICAL STUDIES ON THE POSSIBILITIES OF MANDIBULAR GROWTH INHIBITION

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Introduction: Class III. Angle anomalies are considered emergencies in orthodontic practice and should be addressed at early ages (temporary and early mixed dentition). **Purpose:** Authors have proposed to investigate the possibility of slowing condyle growth through extra-oral forces. **Material and methods:** The studied group was consisted of 30 patients (20 girls and 10 boys) aged between 7–11 years, with class III malocclusion. 14 patients wore extra-oral appliances: chin and head cap and 16 patients were treated with intra-extra-oral appliances: head gear. At both groups measurements were made on profile telerradiography. **Results:** Both types of appliances produce condyle growth inhibition, with greater efficiency for intra-extra-oral appliance. **Conclusions:** 1. Class III. malocclusion must be detected and treated in early mixed dentition. 2. The effect of both appliances is good to prevent an excessive growth of mandible.

ANALYTICAL VARIABILITY OF SALIVARY MICROBIAL LEVELS IN PREGNANCY: A SCREENING PROPOSAL?

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Objective: Frequent association of *Lactobacillus acidophilus* and *Streptococcus Mutans* with caries activity is well known in dental literature. The aim of this study was to evaluate the salivary *Streptococcus Mutans* and *Lactobacillus* levels in samples of pregnant women, during pregnancy. **Material and method:** Saliva samples were collected from 35 pregnant women in 1st, 2nd and 3rd trimester of pregnancy. The gestational age was determined by ultrasonographic scanning, using endovaginal examination for 1st trimester and transabdominal examination for 2nd and 3rd trimester. This study investigated the number of *Streptococcus Mutans* and *Lactobacillus* colony forming units (CFU) in saliva between 1st trimester and delivery. The results obtained were statistically evaluated. Considering the age, the oral hygiene, the value of salivary pH and flow, the diet, the occurrence of vomiting, the gestational age (quantified in weeks of amenorrhea –WA) and the parity (numbers of deliveries), the results were correlated with the CFU level of *Streptococcus Mutans* and *Lactobacillus*. **Results:** The values of CFU showed a significant decrease of *Streptococcus Mutans* colonization levels during the pregnancy. In our study doesn't exist a directly relationship between the CFU of *Streptococcus Mutans*, CFU of *Lactobacillus* and carious risk. However, notwithstanding the literature data, in our study group we observed a decrease of carious risk till the end of pregnancy, as a result of good preventive dental care, with benefit influence on the oral health. CFU of *Streptococcus Mutans* and *Lactobacillus* had an increased level in most of multipara women. **Conclusions:** This study proves the efficiency and requirement of oral health examination from 1st trimester of pregnancy, synchronized with obstetrical examination. If these examinations are consequently repeated in the last two trimesters, with a good oral health management, including the hygienic rules, the carious risk can decrease. All this tests that we applied in our study were non-invasive, well accepted by all pregnant women, without embryo- or fetal toxicity. Can we get on screening?

Keywords: pregnancy, oral health, *Streptococcus Mutans*, *Lactobacillus*.

EFFECTS OF PEROXIDE TEETH BLEACHING AGENTS ON COLOR CHANGES, SURFACE TOPOGRAPHY ON DENTAL RESTORATIVE MATERIALS

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Objective: The most popular bleaching products can change the physical properties of dental restorations such as their colour, surface roughness and microhardness. The purpose of this study was to compare the color changes and microhardness of some composites resins, compomers and glass ionomers cements after bleaching regimens. **Material and method:** Twenty-five specimens (n=25) were made with each of composite resins, compomers and glass ionomers cements. The specimens were divided into five groups equally (n=5): bleaching groups and control group, as follows: G1: artificial saliva at 37°C(control); G2: hydrogen peroxide (HP) at 7%; G3: hydrogen peroxide (HP) at 35%; G4: carbamide peroxide (CP) at 10%; G5: carbamide peroxide (CP) 35%. Color measurements were made with ClearMatch software color programme. The results of wear decrease was measured with a digital comparator by evaluating the simple height. The Vickers hardness (VHN) measurements were performed at the top surface. The data were analyzed with two-way Analysis of Variance. **Results:** Colour changes mean values into the groups of composites were not statistically different, however, the VHN mean values before and after storage and bleaching showed statistically significant differences. CP causes a significant change that could be related to surface alterations. The study showed that the roughness, microhardness, colour stability and stain susceptibility of compomer restorations can be clinically affected by bleaching agents. Composites samples showed no significant alteration (color and microhardness) after bleaching. **Conclusions:** The effect of bleaching agents on the color of restorative materials are material-dependent. Our study shows that although bleaching can perceptibly affect the colour of these restorations, this effect is clinically acceptable on some dental materials. Because glass ionomer and resin-modified glass ionomer cement restorations are changed when bleached, they may need to be replaced. The roughness, microhardness, colour stability and stain susceptibility of compomer restorations can be clinically affected by bleaching agents.

Keywords: teeth bleaching, color changes, microhardness, restorative materials.

OVERJET – A PREDISPOSING FACTOR FOR DENTAL TRAUMA

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Introduction: Traumatic lesions account for a large fraction of the pathology of young teeth. The aim of our study was to determine whether teeth affected by overjet are more exposed to traumatic injuries. **Material and methods:** We examined the records of trauma patients attending the Orthodontic Clinic in Tg-Mures. **Results:** Of the 601 patients with dental lesions, 309 had overjet associated with various dento-facial anomalies. **Conclusions:** Under the conditions of the current study, overjet correlated with the frequency of dental traumatic injuries and their gravity.

Keywords: dental trauma, overjet.

ORAL ANGIOKERATOMA. CASE REPORT AND LITERATURE REVIEW

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Angiokeratoma is a particular benign tumor, that can be found on skin, and very rare in the oral cavity. It is most frequent on the dermis where exist vascular modifications associated with hipercheratosis. There are two main forms: a solitary form and a systemic one. The solitary form appears on scrotum, vulva, legs. Systemic form are associated with metabolic disfunctions, the most common being Fabry's disease and mucopolysaccharidosis. In oral cavity it is most frequent on tongue, causing esthetic, bleeding and functional troubles. **Clinical case:** a 39 years old, non smoking, female patient, presenting esthetic (facial asymmetry) and functional (jaw constriction) disorders. Intraoral, the buccal region was occupied by a large tumor with an unusual aspect: united small lesions, displaying a painless, rough, irregular, yellow surface. The tumor was removed surgically in loco-regional anesthesia, and sent for histopathological exam. **Discussion:** the histopathological exam shows acanthosis, parakeratosis in the corion. Diagnosis is angiokeratoma, the exam does not point out the margins of excision. Surgery was followed by significant jaw constriction. Due to the fact that this lesion is more common in systemic form, supplementary tests and examination (gynecological, dermatological) were run. No evidence for other lesions were found. In about one month, a new tumor can be found in the anterior part of cheek mucosa. A new excision was done, by

lasser. Histo-pathological exam displays the same features (angiokeratoma, excised with safety margins). Surgery was followed by jaw constriction due to scar tissue. Another recurrence was encountered after 2 years; jaw constriction was still present, even after physiotherapy. **Conclusions:** angiokeratoma is a benign tumor which appears very rarely in the oral cavity, being most common on other parts of the body. Besides its benign characteristic, and the safety margins excision, the tumor can relapse, quite often. Lasser excision was not the best treatment solution in this case, considering the important jaw constriction. Postsurgical constriction treatment need to associate mecanotherapy and physiotherapy.

ORTHODONTIC – PROSTHETIC TREATMENT OF EDENTULOUS PATIENTS WITH TMJ DYSFUNCTIONS

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Introduction: KOS implants and orthodontic miniimplants experienced a continuous development in recent years, due to the quick effects of anchorage and immediate osseointegration. **Purpose:** The authors have propose to assess the possibilities of immediate loading of KOS implants in patients with TMJ dysfunctions. **Material and method:** A group of 10 patients with temporo-mandibular dysfunctions were treated preprosthetic with TMJ miofunctional devices. The treatment of partial, biterminal and total edentations was performed with KOS implantation techniques. **Results and discussion:** TMJ splints achieved muscle relaxation with the disappearance of pain and immediate loading implants allowed optimal parameters in prosthetic rehabilitation. Immediate restoration of dento-maxillary apparatus functions, especially the psysiognomy and chewing function, were an appreciated criteria for patients. **Conclusions:** 1. Preprosthetic orthodontic therapy is an extremely favorable option in patients with edentations and TMJ dysfunctions. 2. KOS implants allow immediate prosthetic rehabilitation.

SEGMENTED ARCHWIRES AS AN ORTHODONTIC APPROACH OF DIFFERENT MALOCCLUSIONS - CASES REPORTS

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Introduction: The evolution of orthodontic biomechanics have rapidly developed in the recent years. It is possible to offer to the patients a large diversity of therapeutical options and to adapt in many ways the principles of mechanics to the treatment of clinical problems. The partial fixed appliances with segmented archwires can be used in different malocclusions, where the full arch appliance is not indicated or not wanted. **Objective:** The aim of this work is to outline and to exemplify the various treatment possibilities offered by the segmented archwires in combination with partial and full arch fixed appliances. **Methods:** There have been selected 10 cases, aged between 10 and 27 years with different malocclusions. Each clinical case was investigated , the diagnostic was based upon clinical examination, occlusal radiographs, panoramic radiographs and cefalograms and the therapeutic decision was taken individually. Segmentetd archwires were used in combination with partial fixed and full arch appliances. **Results:** This type of appliance was used in orthodontic treatment both in children and adults, for diastema closure, molar uprighting, limited crossbite, impacted teeth, canine and premolar retraction. **Conclusions:** It is concluded that in some orthodontic patients the segmented archwires could solve different orthodontic problems, but the selection of the cases for this type of appliance needs careful evaluation. The segmented archwires have a many advantages but also disadvantages and in order to determine the best approach for each case, it is necessary to estimate the benefits versus the risks of using this type of devices.

PHARMACY

EVALUATION OF HERBAL TEAS CONSISTING OF SPECIES FROM THE GENUS SOLIDAGO

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European goldenrod (*Solidago virgaurea* L.) is traditionally used in Romanian folk medicine since medieval times for the treatment of urinary tract disorders, due to its diuretic effect. Since its 5th edition, the European Pharmacopoeia includes two monographs of herbal drugs obtained from *Solidago* species: „*Solidaginis virgaureae herba*” from *Solidago virgaurea* L. (european goldenrod) and „*Solidaginis herba*” from *Solidago canadensis* L. and/or *Solidago gigantea* Ait. (goldenrod, which have become invasive species in Romania). Species native to North America have not been taken into account by the European Scientific Cooperative on Phytotherapy, neither by The Committee on Herbal Medicinal Products of the European Medicines Agency. Saponins, flavonoids and phenolic acids, the main active principles of these herbs, differ quantitatively and even qualitatively. Macroscopic analysis of some herbal teas, consisting of the dried, flowering parts of european goldenrod, sold in Romania as botanical food supplements, aroused the suspicion that the species specified on the label is not identical to that inside the packaging. The aim of this study was to identify the *Solidago* species in comminuted herbal teas purchased from retail stores, by means of microscopic and chemical methods. The results show that two out of three herbal teas contained *Solidaginis herba* (*Solidago canadensis* L. or *Solidago gigantea* Ait.) instead of *Solidaginis virgaureae herba* (*Solidago virgaurea* L.), as specified on the label. The microscopic analysis revealed fragments of the leaf mesophyll with vascular bundles accompanied by secretory cells, instead of glandular trichomes with 2 celled stalk and a unicellular, elongated head. The TLC-fingerprint of methanolic extracts, according to European Pharmacopoeia (5.2), revealed the presence of quercitrin, a flavonoid completely absent from *Solidago virgaurea* L..The flavonoid assay yielded an average content of 2.43 g% and 4.89 g% respectively, values specific for *Solidaginis herba*, according to European Pharmacopoeia (5.2). Despite qualitative and quantitative differences in chemical constituents and effects, *Solidago virgaurea* L. is often exchanged with *Solidago gigantea* L. or *Solidago canadensis* Ait. on the market. Literatura data show that pharmacological tests and clinical trials have been done mostly on *Solidaginis virgaureae herba*.

SPECTROPHOTOMETRIC METHOD FOR AZITHROMYCIN DETERMINATION IN PHARMACEUTICAL FORMS

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Azithromycin is a semisynthetic macrolide antibiotic, compounds which have bacteriostatic properties as a result of hindering protein synthesis. Chemically, macrolides are glycosides in which the aglycones are polyacidic, nitrogen-free lactone rings and the sugar parts are deoxy sugars, including at least one aminosaccharide. Azithromycin is derived from erythromycin but differs by inclusion of a methylsubstituted nitrogen atom in a 15-membered lactone ring. It is used in respiratory tract infections, for example pharyngitis, pneumonia, chronic bronchitis, and bronchopneumonia. Azithromycin has a low molar absorbtivity as it lacks a suitable chromophore. The optimum conditions of Azithromycin assay have been established, using the UV-VIS spectrophotometry on the base of coloring reaction of Azithromycin with concentrated Sulphuric acid. The optimal conditions for reactions were established trough the variation of the following parameter: the concentration and the steps of the addition of reactants, the time of reaction, the stability of the reaction product and the choosing of the wavelength at which the absorbtion is maximal (482nm). The studies of validation proved the linearity, accuracy, repeatability and the reproductibility of the method UV-VIS spectrophotometry of quantitative Azithromycin determination may be also employed in the determination of this active principle in the pharmaceutical forms.

ANABOLIC STEROIDS ADMINISTRATION IN SUPRAPHARMACOLOGIC DOSES. EXPERIMENTAL MODEL IN RATS

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Introduction: The use of anabolic steroids causes many side effects such as cardiovascular diseases, liver damage, virilizing and gynecomastia. These health problems often present serious implication for amateur athletes who abuse performance enhancing drugs, even

more than professional athletes, because of the presence and health surveillance. The purpose of this study was to determine mental and physical changes that occur after administration of supraphysiologic quantities (as in the case of abuse of such substances) in rats under sustained physical effort. **Materials and methods:** The research was conducted on 30 laboratory male, adult Wistar albino rats, 300–400 g weight range, for 4 weeks. The animals were divided into groups of 10 animals as follows: absolute control group, which was not given methandienone and was not subjected to exercise, activity control group, which was not given methandienone, but was subjected to progressive physical effort (swimming), the third group was given methandienone and was subjected to progressive exercise (swimming). To analyze the pharmacotoxicologic potential of anabolic steroids used in suprapharmacologic doses for a short period of time (“cycles”) the following laboratory parameters were evaluated in blood samples: analysis relevant to lipid metabolism (total cholesterol, HDL-cholesterol, LDL-cholesterol, triglycerides) for possible hepatic pharmacotoxicologic tropism (transaminases-AST, ALT), relevant for muscle tissue analysis (creatinine, CK). To assess pharmacotropism of anabolic steroids in the target tissues and organs, tissue samples of liver, heart, muscle and testicles were collected for histological processing. **Results:** Exercise, and anabolic steroid doping produce muscle hypertrophy, reflected in an animal model by biochemical parameters and histological analysis. **Conclusions:** High doses of anabolic steroids administrated for a limited time (mimicking the effect of a “cycle” of doping in humans) have hepatic adverse effects, but with modest intensity and reversible (for a single cycle), as evidenced by biochemical analysis and by histological processing of liver tissue. Effects on the heart and testis of a single cycle are minor and reversible, which explains motivation in taking these substances in discontinuous cycles, which take account of the low acute toxicity of these compounds.

SYNTHESIS OF NEW SUPRAMOLECULAR COMPOUNDS WITH POSSIBLE APPLICATIONS IN PHARMACEUTICAL SCIENCE

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The synthesis of new new monomers of some new crown ethers type macrocycles with 1,4-phenylene and 1,4-naphthylene units are reported. Original contributions are focused on synthesis, structural analysis with possible applications as receptors for alkali cations. Theirs potential application can be extend in the field of pharmaceutical science as useful carriers for active ingredient with controlled release over time.

The structural investigations of the compounds have been carried out by ¹H-NMR and ¹³C-NMR spectra and MS measurements.

PHARMACEUTICAL COUNSELLING IN PATIENTS WITH METABOLIC SYNDROME (MS)

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Metabolic syndrome is a condition known in view of the increasing rate of incidence of the disease among the population. Due to increased cardiometabolic risk associated with MS, the call for primary prevention measures, early detection and management development of its protocols. The pharmacist can plan an important role both in preventing and diagnosing the metabolic syndrome and subsequent counseling of these patients. Working method consisting of a retrospective study conducted on patients kept out by family doctors in the village Mîcîfalau (Covasna) and joint Santau (Satu Mare), and a survey of Pharmacy Hibiscus Tg. Mures. As a conclusion we can say that even if patients are in the awareness that smoking is an important facilitator of metabolic syndrome, a significant percentage of them (22.22%) is smoking. Women are less physical activity than men. Woman in a higher percentage of the diet recommended by doctors than men. 2/3 of patients asking drink alcohol. Women showed a more positive responsiveness in terms of drug counseling than men. Women have a greater tendency to OTC administration, than men. Most men use OTC by your doctor or pharmacist, and women as environmental impact.

THE INFLUENCE OF PROTONATION CONSTANTS ON THE SEPARATION OF ANTIBACTERIAL QUINOLONES BY CAPILLARY ELECTROPHORESIS

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Background: The quinolones are a family of antibacterial agents that are widely used in human and veterinary medicine, the antibacterial activity of which is pH-dependent. Macroscopic equilibrium constants of multiprotic molecules depict the acid–base properties of the compound as a whole. The protonation constants are very useful to rationalize precisely the influence of pH on the electrophoretic

behavior of these compounds. In this work the role of protonation constants in the applicability of capillary electrophoresis (CE) for the separation of quinolones from different generations has been studied. **Objective:** Elaboration of a capillary electrophoretic method for the simultaneous separation of quinolone derivatives in a mixture and also to optimize the analytical conditions on the basis of their protonation constants. **Material and methods:** CE is a family of related techniques that use narrow-bore fused-silica capillaries to perform high efficiency separations of both small and large molecules. We studied the electrophoretic behavior of seventeen quinolone derivatives: amifloxacin, ciprofloxacin hydrochloride, difloxacin, 3'-methyl-difloxacin, des-methyl-difloxacin, enoxacin, enrofloxacin, lomefloxacin, moxifloxacin hydrochloride, nalidixic acid, norfloxacin, 8-F-norfloxacin, ofloxacin, pipemidic acid, pefloxacin mesylate, 8-F-pefloxacin, sparfloxacin. **Results:** A fast and reliable method has been developed in basic environment, using a separation buffer containing 25mM disodium tetraborate decahydrate, with whom we achieved the separation of eleven quinolones. The separation in the acidic environment, using a separation buffer containing phosphoric acid proved to be a less appropriate alternative for the studied quinolones mixture, only six quinolones could be separated in these conditions. **Conclusions:** The protonation constants of the quinolone derivatives are valuable parameters in the optimization of a CE separation method. The separation of a mixture of quinolone derivatives is more reliable and possible to achieve in the basic environment rather than in an acidic one, which is in agreement with their protonation constants values. CE proved to be an efficient tool in the separation of quinolones from different generations.

SEPARATION OF ENANTIOMERS OF PYRETHROIC ACIDS BY CAPILLARY ELECTROPHORESIS USING BASIC CHIRAL SELECTORS

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Objective: The purpose of this study was to separate by capillary electrophoresis the enantiomers of a mixture of pyrethroic acids: chrysanthemum, permethrinic and deltamethrinic acids with pK_a values of 5.1±0.4 using positively charged cyclodextrins, permethyl monoamino β-cyclodextrin (PMMAβCD), monoamino β-cyclodextrin (MAβCD) as chiral selectors, and investigate the influence of pH on the resolution of separation. Pyrethroic acids are used as synthetic insecticide with high toxicity to bees and fish, but low to mammals. **Material and methods:** Experiments were carried out on a Hewlett Packard 3DCE system (Hewlett Packard, Waldbronn, Germany) with diode array UV detector at 25°C and uncoated fused-silica capillaries (FSOT) 58.5cm (50 effective length) x50µm I.D. (375µm O.D.) (Composite Metal Services Ltd., Worcestershire, UK) were used. The initial background electrolyte (BGE) consisted of 40mM boric, acetic and phosphoric acid buffers in ratio of 1:2:2 (Britton-Robinson). **Results:** We calculated protonated form/deprotonated form ratio for all pyrethroic acids, and following the same reasoning, the protonated form/deprotonated form ratio for the two cyclodextrins studied at all pH values. The thermodynamics of ionization equilibria was expressed as well. The best resolution values were found to be at high pH values, where the analytes are ionized and the chiral selector (PMMAβCD) is neutral. The lowest efficiency values were observed at low pH values, because of the nonpolar character of protonated pyrethroic acids when the analytes are neutral and selectors are ionized. **Conclusion:** Capillary electrophoresis due to its high efficiency and good compatibility to ionic analytes in the chiral analysis seems to be an ideal method for the chiral analysis of pyrethroic acids. The stereochemistry of the studied compounds should take into consideration in chiral separation, because dissociation alone cannot fully explain the appearance of experimental curves.

COORDINATION STUDY OF PLATINUM CATION TO LACUNARY POLYOXOMETALATES

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Objective: The chemistry of polyanions is one of the most active field in coordination chemistry study. The research of coordination between metal oxoions and lacunary polyoxometalate compounds is very important for their antitumoral and antiviral activity. The polyoxometalates can bind cations by oxygen atoms from their saturated surface structure or by embedding in vacant sites. Transition metals are small enough to be embedded in vacant sites. **Methods:** The unsaturated polyoxometalates are a special category of coordination compounds because of their physical and chemical properties (based on unsaturated structures). The terminal oxygen atoms from their structures give them a high coordinative capacity for many cations. After coordination, the structures do not change; only little displacements of atoms occur. Depending on the degree of unsaturated structures, in lacunae appear a high density of electrons. Unsaturated monolacunary compounds have five vacancies with coordinative capacity. In case of multilacunary compounds the number of vacant sites is increasing. The physico-chemical methods used for determining coordination between transition cations and unsaturated polyoxometalates follow their formation and stabilities for the ratio between cation and ligand. These methods are: conductometry, photocolometry, chromatography, and electrophoretic methods. In coordination with transition cations, lacunary poly-

oxometalates are working as polydentate ligands. The structures with transition cations are very important because of their catalytic properties. The typical structures (containing W and Mo) used for obtaining lacunary species (mono to three lacunae) are α -Keggin, α -[X₂M₁₂O₄₀]ⁿ⁻ and α -Dawson-Wells [X₂M₁₈O₆₂]ⁿ⁻. In terms of synthesis the possibilities of complexation are very diverse; the three lacunary units have the capacity of binding even nine cations in the same structure. In this work is reported the coordination of Pt⁴⁺ to [KAs₄W₄₀O₁₄₀]²⁷⁻ and the determination of the combining ratio between them. The solutions of different concentrations used for K₂₇[KAs₄W₄₀O₁₄₀] are: 5*10⁻⁵M, 2*10⁻⁵M and 10⁻⁵M. For the cation the solution was K₂[PtCl₆], 4.1*10⁻²M. The mixed solutions were evaluated by conductometry and spectrophotometry. **Results, Conclusions:** The conductivity graphical representations emphasize that there are two types of coordination compounds with two different combination ratios ligand:cation=1:2.1:4. The spectrophotometric determination performed, have verified these ratios.

Keywords: polyoxometalates, coordination, Pt⁴⁺,

SIMULTANEOUS SEPARATION OF FOUR PENICILLIN AND TWO FLUOROQUINOLONES DERIVATES IN AQUEOUS SOLUTIONS BY CAPILLARY ELECTROPHORESIS

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Background: Several environmental chemistry studies focus on the identification and separation of the polluting pharmaceutical substances, especially antibacterials, compounds with important biological effects. These substances reach different compartments of the environment (water, soil), as metabolites, conjugated and/or unmetabolized forms. **Objective:** Taking into account that penicillins and fluoroquinolones are the most frequently used antibacterials in the human and veterinary therapy, the aim of our study was to elaborate a separation technique suitable for the identification and separation of six pharmaceutical substances-amoxicillin, ampicillin, benzylpenicillin, oxacillin, ciprofloxacin and norfloxacin-with possible further application in environmental analysis. **Material and methods:** For this purpose we selected a modern method of analysis, capillary electrophoresis, where the separation of the compounds is due to the difference between the electrophoretic mobilities of the analytes. Since the four penicillins and the two fluoroquinolones, respectively, have very similar electrophoretic mobilities and structural characteristics, an efficient separation of these compounds using the classic capillary zone electrophoresis is hard to achieve. Their separation can be solved only by micellar electrokinetic chromatography, where a micellar “pseudostationary” is added to the buffer solution. The CE experiments were conducted using an Agilent 6100 capillary electrophoresis system; the data were recorded and processed with Agilent Chemstation software version 7.01. In all measurements hydrodynamic sample injection was used; separations were performed using a fused-silica capillary of 56cmx50µm I.D. (effective length: 48cm). Detection of the analytes was performed using photodiode array detection at 210 nm and 220 nm. **Results:** Different buffers solutions were tried out in order to establish the optimum buffer solution. The best separation was obtained using a buffer solution containing 25mM sodium tetraborate, 100mM dodecylsulfate and 100mM H₃BO₃. The migration order of the six studied compounds was the following: amoxicillin, ampicillin, benzylpenicillin, oxacillin, ciprofloxacin and norfloxacin. The influence of different analytical parameters was also evaluated. With the increase of the voltage and the temperature, respectively, we observed the decrease of the migration times. A voltage of 25 kV and a temperature of 25°C were selected. The modification in the injection parameters (pressure and injection time) had little influence on the migration times. During our experiments we worked with an injection pressure of 30mBar for 5 seconds. In order to evaluate the reproducibility of the method, we performed a repeated measurement of 9 samples and observed the variation of the migration times, peak height and the peak area. We calculated the average of the values and the standard deviation for each parameter. Very similar migration times, peak heights and areas were obtained. We also calculated the individual linear regression equation and the correlation coefficient for each compound, injecting fourteen solutions with different concentrations in a specific range and three replicates per concentration. **Conclusions:** Capillary electrophoresis proved to be an efficient and useful tool in the separation of the studied substances.

CYCLODEXTRINS MIGHT SOLVE PHARMACOKINETIC PROBLEMS OF PENICILLINS

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Low bioavailability with large interindividual variations is a known problem in the therapy with most penicillins as phenoxymethylpenicillin, ampicillin, oxacillin. One of the reasons for these pharmacokinetic problems is the low stability of these antibiotics in the acidic gastric environment. Therefore, reducing the instability of these agents in acidic environment can solve at least partially the recorded bioavailability issues. The purpose of this paper is to examine if the use of some auxiliary substances can improve the stability of penicillins (phenoxymethylpenicillin, benzylpenicillin, oxacillin, ampicillin, and amoxicillin) in acidic environment. Methods used for this purpose were thin layer chromatography and high pressure liquid chromatography. Stability increase was assessed by measuring at different time intervals the concentration of the antibiotic in the solutions with and without auxiliary agents. Ampicillin

and amoxicillin stability was increased by the addition of magnesium salts of glutamic and aspartic acids. Interestingly the stability of other penicillins was not influenced by the addition of the magnesium salts of amino acids. On the other hand the stability of all penicillins was significantly increased by the addition of cyclodextrins: β -cyclodextrin and 2-hydroxypropyl- β -cyclodextrin. Best stability increase was observed when the antibiotic was combined with β -cyclodextrin in a 1:5 mole ratio. Halves of the antibiotics in acidic environments suffered the following increases: amoxicillin from 0.52 to 6.86 days; benzylpenicillin 5.46 to 18.93 minutes; phenoxymethylpenicillin 2.83 to 11.21 hours. The recorded stability increase could be of clinical importance for amoxicillin, ampicillin, oxacillin, and phenoxymethylpenicillin but in vivo test are needed to clarify this problem. In the case of benzylpenicillin even if a large increase in the half was recorded it still looks unsuitable for an oral administration.

CHANGES IN THE TYPE OF THE DECOMPOSITION KINETICS OF PENICILLINS WHEN ASSOCIATED WITH AUXILIARY SUBSTANCES

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Large interindividual variations in the plasma concentrations and low bioavailability are a known problem in the therapy with most penicillins as phenoxymethylpenicillin, ampicillin, and oxacillin. One of the reasons for these pharmacokinetic problems is the low stability of these antibiotics in the acidic gastric environment. An improvement of the pharmacokinetic properties of such agents can solve, at least partially these problems. Previously we reported large increases of halves of benzylpenicillin, phenoxymethylpenicillin, and amoxicillin when associated with cyclodextrins. In the case of oxacillin and ampicillin, halves can not be computed when large quantities of cyclodextrins are present due to changes in the decomposition kinetics. However, a significant stability increase can be observed since when the unassociated antibiotic almost completely disappeared from the solution, the cyclodextrin-associated form lost less than half of its initial content. It is important to mention that the decomposition of all unassociated penicillins followed a first order kinetic with a very good fitting to an exponential equation: $R > 0.99$ and residuals usually under 5% (no correlations were found between residuals and concentration). Changes in the decomposition kinetics are almost imperceptible at lower cyclodextrin concentrations. The changes are observed at low cyclodextrin concentrations only as a residual values increase. The stabilization process can not be considered source of such changes since in the presence of magnesium salts of glutamic and aspartic acids perfect fitting with a first order kinetic are recorded. In the presence of large cyclodextrin to oxacillin or ampicillin ratios decomposition seems to follow an autocatalytic process. A competition to the inclusion in the cyclodextrin cavity between a decomposition product of the antibiotic and the antibiotic itself can be the reason for such behavior.

