

## **C O N T E N T S    LEKÁRSKY OBZOR 1/2004 – SUMMARY**

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### **SCREENING OF 1 TYPE DIABETES MELLITUS RISK IN PEDIATRIC AGE IN SIBLINGS OF DIABETIC PATIENTS IN SLOVAKIA**

#### **SUMMARY:**

**Background:** Early detection of pre-clinical development of 1 type diabetes mellitus is facilitated by a combined testing of genetic and immunologic signs. Within the National Diabetologic Programme the Ministry of Health of SR decided to carry out the screening of 1 type diabetes mellitus (DM 1) in the families of diabetic children.

**Patients and methods:** In 105 diabetic patients and in 134 siblings – their brothers and sisters –the genetic risk was examined. In 130 siblings the presence of three diabetic autoantibodies was examined. The genetic risk was examined by PCR testing of HLA DQB1 allele gene and insulin allele gene. The congruency of sibling-diabetic genotypes plays an important role. The immunologic risk was assessed by radioimmunologic methods.

**Results:** In the families of 105 diabetics the risk genotypes were found in 67 siblings: identical genotype in 25 siblings, haploidentical in 42 siblings. In the risk subjects diabetic autoantibodies should be examined annually until puberty. Autoantibodies AIA, IA-2A and GAD 65 were examined in 130 siblings with 4 siblings repeatedly revealing positive findings. Within secondary prevention they are applied small doses of insulin.

**Conclusion:** The screening enables to introduce preventive measures that reduce the risk of acute DM1 presentation and provide modes of slowing down or stopping a further development of diabetes into a clinically manifested stage.

**Key words:** 1 type diabetes mellitus - HLA II class gene polymorphism – insulin gene polymorphism - risk autoantibodies – diabetes prediction

**Viktor MATEJČÍK**

### **ANATOMICAL VARIANTS AND CLINICAL PICTURE OF BRACHIAL PLEXUS FROM NEUROSURGICAL ASPECT**

#### **SUMMARY:**

**Background:** The deviations found at operations forced us to draw our attention to variations of the formation of brachial plexus.

**Patients and methods:** In 55 adult cadavers 110 brachial plexuses were examined in order to detect the incidence of neural variations. The involvement of the root C4 and/or Th2 as well as various deviations from the outlet of single girdle roots and their branches from the spine, variations of formation of the nerve trunks, fascicules and terminal branches were followed up. Our attention was aimed at their course, anastomoses, thickness and possible absence. We followed up the girdle roots, i.e. the pretrunk portion of the plexus involving the spinal nerve in sulcus n. spinalis and the anterior branch of the spinal nerve. Apart from anatomical complexity and variability, motoric innervation specificities related to the diagnostics are highlighted. We also focused on the mechanisms and morphological causes of development of certain types of injuries.

**Results:** A prefixed type occurred in 26 cases (47.3 %), while postfixed type was seen in one case only. No marked deviations in the formation of the plexus were observed in 9 cases. In 46 cases (83.6 %) 143 deviations were seen, in 11 cases 1 and 35 cases showed simultaneous incidence of two and more deviations. In 60 cases (41.2 %) more frequently lateral deviations on the left occurred, while bilateral deviations appeared in 48 cases (33.6 %). In the area of the formation of terminal branches the deviations were mostly of anastomotic character. The lowest number of deviations was found on the nerve roots level.

**Conclusion:** This study facilitated to detect and define the unique and so far undescribed anatomical deviations in the formation of the nerve roots, trunks, fascicules and terminal branches of the brachial plexus. A particular stress is given to the development of n. axillaris as a continuation of the posterior branch of the upper trunk.

**Key words:** brachial plexus – supraclavicular portion - infraclavicular portion – brachium variations.

**Peter JARČUŠKA, Eduard VESELÍNY, Martin OROLÍN, Anna KOVÁČOVÁ**

## **BLOOD SERUM AND ASCITES LABORATORY FINDINGS IN CIRRHOTICS WITH ASCITIC INFECTION**

### **SUMMARY:**

**Background:** The aim of this study was to evaluate blood serum and ascites laboratory findings in cirrhotics with ascitic infection.

**Patients and methods:** In 169 patients with liver cirrhosis (99 male, median age:  $52,63 \pm 8,02$  years) we performed 692 paracentesis. Median Child-Pugh score was  $10,41 \pm 3,02$  points. 4 patients were in class A, 59 in class B, and 106 patients in class C of Child-Pugh classification. 51 episodes of spontaneous bacterial peritonitis were documented in 40 patients, 7 episodes of secondary bacterial peritonitis in 7 patients. In control group were 135 cirrhotics with undetected ascitic infection by first paracentesis. Statistical significance between groups was established by Student's T-test.

**Results:** Patients with spontaneous bacterial peritonitis (BP) compared with patients without ascitic infection had statistically significant lower serum values of total protein ( $56,13 \pm 8,11$  g/l and  $62,19 \pm 7,92$  g/l, respectively;  $p < 0.01$ ), lower serum values of albumin ( $24,99 \pm 4,02$  g/l and  $27,72 \pm 5,83$  g/l, respectively;  $p < 0.01$ ) and lower serum values of cholesterol ( $2,47 \pm 1,29$  mmol/l and  $3,11 \pm 1,42$  mmol/l, respectively;  $p < 0.01$ ), as well as lower values of previous parameters in ascites (total protein:  $8,01 \pm 2,46$  g/l and  $14,28 \pm 8,37$  g/l, respectively;  $p < 0,01$ ), (albumin:  $4,92 \pm 1,22$  g/l and  $9,02 \pm 5,42$  g/l, respectively;  $p < 0,01$ ), (cholesterol:  $0,33 \pm 0,20$  mmol/l and  $0,80 \pm 0,59$ , respectively;  $p < 0,01$ ). Patients with secondary BP compared with patients with spontaneous bacterial peritonitis had statistically significant higher values of total protein in ascites ( $23,00 \pm 11,99$  g/l and  $8,01 \pm 2,46$  g/l, respectively;  $p < 0.01$ ), higher values of albumin in ascites ( $13,09 \pm 9,51$  g/l and  $4,92 \pm 1,22$  g/l, respectively;  $p < 0,01$ ) as well as higher values of cholesterol in ascites ( $0,91 \pm 0,31$  mmol/l and  $0,33 \pm 0,20$  mmol/l, respectively;  $p < 0,01$ ).

**Conclusions:** Patients with spontaneous bacterial peritonitis compared with patients without ascitic infection had statistically significant lower serum values of total protein, albumin and cholesterol in blood serum and ascites. Patients with secondary BP compared with patients with spontaneous bacterial peritonitis had statistically significant higher values of total protein, albumin and cholesterol in ascites.

**Key words:** liver cirrhosis – ascites – total proteins – albumin – cholesterol – bacterial peritonitis.

**Adriena SAKALOVÁ**

## **MOLECULAR DIAGNOSTICS OF MULTIPLE MYELOMA AND ITS PROGNOSTIC SIGNIFICANCE**

### **SUMMARY:**

The diagnosis of the hematologic malignancies presents a daunting challenge. Inherited DNA-sequence variants do not appear to have a prominent causative role: rather, these diverse cancers are typically initiated by acquired alterations to the genome of the cancer cell, such as chromosomal translocations, mutations, and deletions. This report brings contemporary biologic and molecular-genetic experiences in multiple myeloma. The diagnosis of this disease is commonly based on morphologic evaluation supplemented by analysis of a few molecular markers. However, the response of patients to treatment is heterogenous (survival from 2 to more than 10 years), arousing the suspicion that there can be several molecularly distinct variants within the same morphologic category. Understanding the mechanism by which single genes can cause cancer is important from the point of early diagnosis and from points of new therapeutic modalities (biologic immunomodulators, inhibitors of proteasomes, cytokines and other nuclear proteins).

Key words: multiple myeloma – molecular and genetic factors – survival and prognosis – karyotypic abnormalities.

**Branislav TRNAVEC, Erika VODRÁŽKOVÁ, Andrej černák**

## **CHORIOIDAL METASTASIS – FIRST SYMPTOM OF LUNG CANCER**

### **SUMMARY:**

The paper reports on 62 year old patient whose deteriorated visual acuity of the left eye due to chorioidal metastasis was the first symptom of lung cancer.

Key words: chorioidal metastasis – lung cancer.

**Jozef ŠTRELINGER**

## **EAGLE SYNDROME**

### **SUMMARY:**

The prolonged process styloideus is a frequent source of the headache. It usually causes numerous problems in routine diagnostic practice because doctors rarely think of this disease in establishing the diagnosis. The diagnostics and treatment is simple and definitive in the majority of cases.

Key words: headache – prolonged processus styloideus – Eagle syndrome

**Alica KAPELLEROVÁ, László KOVÁCS, Ľudmila PAVLÍKOVÁ**

## **THE BRATISLAVA WOMEN CHARITABLE CORPORATION AND ITS EFFECT UPON THE FOUNDATION AND DEVELOPMENT OF CHILDREN'S HOSPITAL**

### **SUMMARY:**

The Bratislava charitable women corporation (1830 - 1945) significantly contributed to the foundation and development of children's hospital in Bratislava (1853) that became the first establishment of this kind all over Slovakia. The members of the corporations raised necessary financial means, participated in organizational issues in the hospital and provided supervision of nursing care for hospitalized children. Thanks to great commitment and involvement of members of the corporation, the hospital gradually obtained a larger and more suitable locations on which a new building of children's hospital was constructed (1894) The hospital became one of the most up-to-date buildings of the Hungary.

Key words: the Bratislava women charitable corporation – children's hospital.

**Štefan HRKOTÁČ**

## **SOME REMARKS ON THE 50TH ANNIVERSARY OF THE ESTABLISHMENT OF HEALTH CARE EDUCATION**

### **II. part – Schools of nursing**

### **SUMMARY**

The education of nurses and other health personnel underwent various forms during the period of the past 50 years. It was affected by the growing demands of new health care establishments and by the development of health services for inhabitants. Building up of nursing schools was one of the basic stones that gave rise to the current model of our curative and preventive care. This could not be done without a rapid increase of the number of nurses and other health care workers. This prerequisite was equally important as a growing number of medical doctors and their postgraduate education.

Key words: schools of nursing – specialty of nurses and other health personnel – continuing education of nurses and other health personnel.

## **C O N T E N T S    LEKÁRSKY OBZOR 2/2004 – SUMMARY**

**Peter JARČUŠKA, Eduard VESELÍNÝ, Martin OROLÍN, Viktória TAKÁČOVÁ**

### **ASCITES COMPLICATIONS IN LIVER CIRRHOSIS**

#### **SUMMARY:**

**Background:** The aim of the study was to assess the incidence of major ascites complications (ascites infections, hepatorenal syndrome, incarceration of umbilical hernia, hepatic hydrothorax, spontaneous bacterial peritonitis, hemorrhagic and chylous ascites) in hospitalized patients with liver cirrhosis.

**Patients and methods:** 692 ascites punctures were performed in 169 cirrhotics from June 1994 to June 1999 (age:  $52,63 \pm 8,02$  years, Child-Pugh score:  $10,41 \pm 3,02$ ). 4 patients were in class A, 59 in class B, and 106 patients in class C of Child-Pugh classification.

**Results:** Spontaneous bacterial peritonitis (SBP) was found in 27 patients (15,98 %) after the first abdominal paracentesis, and in 13 more patients (7,69 %) after repeated paracentesis. 51 episodes of SBP were diagnosed in 40 patients (7,37 % of all paracenteses). Forty-eight SBP episodes (94,72 %) were successfully treated by antibiotics, eight patients with SBP died during the hospitalization (15,69 %). Secondary bacterial peritonitis was found in 7 patients, two of them died during the hospitalization. Hepatorenal syndrome has occurred in 20 patients, sixteen of them have died during hospitalization. Necrosis and perforation of umbilical hernia was found in 2 patients, incarceration of umbilical hernia in 1 patient. All of these three patients died during the hospitalization. Pleural effusion was found in 17 patients, spontaneous bacterial pleuritis in 3 patients, who died during the hospitalization. Hemorrhagic ascites was found in 3 patients and chylous ascites in 5 patients.

**Conclusion:** Ascites complications are common in cirrhotic patients and worsen their prognosis.

**Key words:** liver cirrhosis – ascites – bacterial peritonitis – hepatorenal syndrome – hepatic hydrothorax – spontaneous bacterial pleuritis.

**Peter KOVÁČ, Karol TÓTH, Zora HAVIAROVÁ**

### **THE ATTITUDE OF MEDICAL STUDENTS TO LEGAL NORMS IN MEDICINE**

#### **SUMMARY:**

**Background:** The knowledge of legal regulations is of general significance, while in the area of health care delivery it is of particular importance. The most important information for doctors who are in everyday contact with the most precious value – human life, is to be acquainted with doctors' rights and duties ensuing from legal norms. The practice shows doctors have insufficient knowledge on legal regulations amending health care delivery. The authors attempted to find out whether this unfavourable situation results from inadequate undergraduate education.

**Respondents and methods:** A questionnaire inquiry was made on a sample of 282 students of 1. – 5. year of general medicine at Comenius University Medical Faculty in Bratislava.

**Results:** The results of the inquiry showed the students got the information on medical legal norms during their study course. A total of 95.74 % of students considers the knowledge of legal

norms necessary, only 34.75 % got acquainted with legal norms sometime during their study, 19.86 % showed satisfaction with the scope of the subject and as much as 71.63 % of students would prefer an independent subject aimed at clarification of medical legal norms. However, the information on legal norms is nonsystematic and scattered among numerous study subjects.

Conclusion: The data revealed are being recognized by the students themselves. The students prefer an independent subject focused on medical law.

Key words: medical law – legal responsibility – medical students – undergraduate education.

**Júlia HRACHOVÁ, Katarína FURKOVÁ, Ján ČERVENKA, Miroslav ŠAŠINKA**

## **EFFECTS OF FISH OIL AND OMEGA-3 POLYUNSATURATED FATTY ACIDS**

### **SUMMARY:**

Fish oil is rich in omega-3 polyunsaturated fatty acids. Their increased intake changes the composition of membrane lipid pool, the composition of synthesized eicosanoids and have a therapeutical effect in numerous chronic states mainly those based on autoimmune processes. Its preventive effect is equally important in ischemic heart diseases.

Key words: fish oil – eicosapentaenoic acid, docosahexaenoic acid – eicosanoids - omega-3 polyunsaturated acids.

**Ladislav BADALÍK, Mária ŠVEJNOCHOVÁ, Zuzana HONZÁTKOVÁ,  
Vojtech OZOROVSKÝ, Richard DEMOVIČ, Ivan MELICHÁREK**

## **EPIDEMIOLOGY OF DISEASES CAUSED BY MYCOBACTERIUM MARINUM**

### **SUMMARY:**

Authors providing the surveillance of tuberculosis as zoonosis in the population of Slovak Republic described epidemiologic characteristics of diseases caused by *M. marinum*. The agent itself was isolated for the first time in the history of Slovakia by the team member dr. Švejnochová from National Institute of Tuberculosis and Respiratory Diseases. The authors present factors of transmission, transfer mechanisms, port of entry as well as clinical manifestations. They inform the public about new mycobacteriosis that appears mainly in those in charge of aquarium, they highlight possible risk and hazards that have to be considered in managing the problem of tuberculosis.

Key words: epidemiology of tuberculosis – zoonosis surveillance – the first isolation of *Mycobacterium marinum* in Slovakia.

**Eva FEKETEOVÁ, Mária TORMAŠIOVÁ**

## **RECURRENT HYPERSOMNIA – CASE REPORT**

### **SUMMARY:**

Recurrent hypersomnia (RH) is characterized by repeated episodes of excessive somnolence that may be accompanied by behavioral and mood changes, by increased appetite and hypersexuality. The etiology of this rare disease is unclarified so far, and therapeutical modes usually lead to the improvement in some cases only. The case report of a 22 year old female patient along with RH including polysomnographic findings in asymptomatic and symptomatic period, are presented.

Key words: recurrent hypersomnia – Klein-Levin syndrome – polysomnography.

**Štefan HRKOTÁČ, Radko MENKYNA**

## **SOME REMARKS ON THE 50TH ANNIVERSARY OF THE ESTABLISHMENT OF HEALTH CARE EDUCATION IN SLOVAKIA AFTER THE WORLD WAR II.**

### **III. part – Medical literature**

#### **SUMMARY:**

The 50-year existence of schools of nursing schools and its successful development was affected by publishing medical literature for undergraduate and especially postgraduate training of physicians and pharmacists, post-basic education of nurses and other health care professionals and by publishing textbooks for schools of nursing. The Publishing House Osveta in Martin was commissioned with this task since 1953 achieving significant success mainly in publishing books. The Publishing House Obzor in Bratislava was commissioned to provide publishing periodical medical journals.

Key words: medical literature – journals.

## **C O N T E N T S    LEKÁRSKY OBZOR 3/2004 – SUMMARY**

**Martin UHER, Mária PISARČÍKOVÁ, Milan KURÁK, Anetta ČERNÁKOVÁ**

### **THE INCIDENCE OF INFECTIOUS COMPLICATIONS IN CHILDREN WITH INDWELLING CENTRAL VENOUS CATHETER – RESTROSPECTIVE STUDY**

#### **SUMMARY:**

**Background:** The risk factors for the development of infections associated with indwelling central venous catheter involve the type of the catheter, material the catheter is made of, indwelling time, location and mode of cannulation, treatment management, concurrent infections and other factors dependant on the patient and the attending personnel.

**Patients:** The group consisted of 165 children (86 boys and 79 girls). There were 26 (11.93 %) multiple lumen and 192 (88.07 %) single lumen catheters. Multicultures were taken according to the patient's clinical status. The mode of disinfection has also been changed in the course of years. The average indwelling time in the vessel was 10.09 days.

**Methods:** The incidence of infectious complications associated with central indwelling catheter was evaluated restrospectively over the period of 5 years. Sitges – Serr was used to define infectious complications. Nonparametric unpaired Mann-Whitney test, Student unpaired t-test and Spearman correlation quotient were used for statistical analysis. 218 results with the follow up of 19 parameters were analyzed in an overall group of patients.

**Results:** Altogether 71 infectious complications were recorded. Contaminated catheters were observed in 31 cases, catheter sepsis in 27 cases and catheter bacteriemia in 11 cases. V. jugularis interna and v. femoralis are considered to be of highest risk. In catheter sepsis the risk is significantly higher due to subsequent exitus than in other infectious complications ( $p < 0.05$ ). The risk for the incidence of infectious complication represented 32.57 % in the whole group. Within the years 1997 – 1999 a statistically significant decrease in infectious complications was seen as opposed to the years 1995 – 1996. The decrease was associated with a change in the complex approach to the patients with central venous catheter. From the aspect of the incidence of infectious complications the group at highest risk involved the patients with the indwelling time of more than 16 days – 46.3 %. The average central venous catheter indwelling time in the central vein in patients with catheter sepsis was 14.2 days. Statistical analysis confirmed that exitus as infectious complication is independent of the parameters followed up.

**Conclusion:** A change in the complex strategy of cannulation of central vessels as well as in the management of central venous catheters resulted in a statistically significant decrease in the incidence of infectious complications with all their consequences in all the group of patients.

**Key words:** central venous catheter – infection – catheter bacteriemia – catheter sepsis.

**Katarína FURKOVÁ, Miroslav ŠAŠINKA, Júlia HRACHOVÁ**

### **CAUSES, DIAGNOSTICS AND TREATMENT OF ERYTHROCYTURIA**

#### **SUMMARY:**

Hematuria can be defined as presence of blood or erythrocytes in the urine. Its appearance may be abrupt or gradual, it can be of short duration or of longterm persistence. In differential diagnostics the type of erythrocyturia is determined as to whether isolated or combined with



proteinuria or bacteriuria. When classified into groups, the cause of hematuria is detected by means of algorithms covering laboratory findings, noninvasive or invasive examination.

The treatment is based on the diagnosis that is established according to the examinations. Every patient with erythrocyturia requires screening and follow up, regular check-ups in nephrologic outpatient department and adherence to therapeutic procedures, because only in this way the progression of nephropathy can be prevented.

Key words: hematuria – types of hematuria – laboratory diagnostics – diagnostic algorithms – principles of treatment.

**Miroslav ŠAŠINKA, Katarína FURKOVÁ, Ľudmila PODRACKÁ, Ivo TOPOLESKÝ**

## **DIAGNOSTICS OF THE UROPOIETIC SYSTEM BACTERIAL INFECTIONS IN CHILDREN**

### **SUMMARY:**

The uropoietic system infections rank as second most frequent bacterial infections in humans causing serious renal functional disorders. The diagnosis of these infections is difficult mainly in newborns and in children younger than 5 years, because at this age the infections manifest atypically, very often as febrile disease with no local symptomatology or as digestive tract disease.

The authors analyze the types of infections of the uropoietic system and make a detailed description of methods of their diagnostics, especially the assay of bacteriuria (with emphasis in using dip-slide methods in ambulatory pediatrics), infection localization in the urinary tract (clinical and laboratory methods) and exploitation of imaging methods particularly their indications and contraindications. The delayed diagnosis and treatment seriously deteriorate the prognosis of these diseases and from this aspect primary care pediatricians and adolescent's doctors play an irreplaceable role.

Key words: lower urinary tract infections – pyelonephritis – bacteriuria – wash-out test – micturition cystography – ultrasonography of kidneys – renal DMSA-scan.

**Ivan NOVÁK**

## **SUFFOCATING CHILD IN PRIMARY PEDIATRIC CARE**

### **SUMMARY:**

The author presents the causes of suffocation in children and summarizes the recommended procedure in managing the situation in primary pediatric care.

Key words: suffocation – children – primary pediatric care.

**Jaroslav KRESÁNEK, Rudolf RIEDEL, Silvia PLAČKOVÁ,**

## **MANAGEMENT OF INTOXICATED PATIENT II**

### **SUMMARY:**

In their review article the authors inform about the management of intoxicated patient from the aspect of primary care for children and adolescents. Primary care possibilities in his ambulatory care, such as modes of diagnostics, treatment, elimination of toxins from the organism in accordance with up-to-date knowledge in the given area of problems are discussed.

**K e y w o r d s :** toxicologic-information centre – intoxication – early diagnostics – elimination therapy –antidote.

**Dana GRAMBLIČKOVÁ**

## **ARTERIAL HYPERTENSION IN AMBULATORY CARE OF PEDIATRICIANS**

### **SUMMARY:**

Arterial hypertension is the disease that affects about a milliard of people all over the world. Pathophysiological process leading to arterial hypertension begins as early as in childhood. Early detection of high risk subjects for cardiovascular disease development is one of the major tasks of preventive cardiology. The paper points at the modes of diagnostics of primary and secondary arterial hypertension that can be provided already in primary pediatric care practice and the modes of pharmacological and nonpharmacological therapy.

**K e y w o r d s :** arterial hypertension – child – angiotensin converting enzyme inhibitors – b-blockers – diuretics.

**Oto ŮRGE, Jaroslava STRNOVÁ, Katarína PASTORKOVÁ**

## **HEREDITARY METABOLIC DISORDERS**

### **SUMMARY:**

Hereditary metabolic disorders may cause severe neurologic dysfunctions and acute metabolic life threatening situations. Early recognition of primary symptoms, early diagnostics and treatment may principally change the whole course of the disease. The authors submit an overview of modes of diagnostics and differential diagnostics of hereditary metabolic disorders with focus on clinically significant nosological units and their early detection.

**K e y w o r d s :** hereditary metabolic disorders – diagnostics – differential diagnostics.

**Milica BERÁNKOVÁ**

## **EVALUATION OF SOMATIC DEVELOPMENT OF CHILDREN AND ITS DISORDERS**

### **SUMMARY:**

The paper describes the procedure which should be practised by a primary care for children and adolescents in his longterm follow-up of children he looks after. The evaluation of the growth, nutritional status, proportionality, bone age, sexual development, growth of the head and stigmatization as well as early detection of changes belong among basic areas of his activity.

**K e y w o r d s :** growth – body mass – proportionality – bone age – sexual development – stigmatization.

**Martin UHER, Ivo TOPOLSKÝ**

## **SHOCK IN CHILDREN**

### **SUMMARY:**

Shock is considered a life threatening situation mainly in children. The authors present an overview of causes and mecha-nisms of the onset of these acute states and describe the initial phases of treatment that are of greatest importance in saving the patient's life, especially in primary care pediatrician.

**K e y w o r d s :** shock – shock pathophysiology – treatment of shock.

## **CONTENTS LEKÁRSKY OBZOR 4/2004 - SUMMARY**

**Jana Blahová, Kvetoslava Králiková, Vladimír Krčméry, Vladimír Krčméry sen., Marta Babálová, Radko Menkyna, Libuša Glosová, Helena Knotková, Anna Lišková, Mária Molokáčová, Alena Vaculíková, Dagmar Bruckmayerová, Ivan Rovný**

### **MONITORING OF RESISTANCE TO ANTIBIOTICS IN SLOVAKIA – SUSCEPTIBILITY AND RESISTANCE OF MICROBES FROM BACTERAEMIA IN 2003**

#### **Summary:**

**Background:** Computer-assisted monitoring of antibiotic resistance and multi-resistance in bacterial strains isolated from patients with bacteraemia was performed in strains of gram-positive and gram-negative bacteria from six Departments of Clinical Microbiology of University and Regional Hospitals in Slovakia in the first six months of the year 2003.

**Set and Methods:** The spectra of resistance obtained in this period were compared with those obtained in the second half of 2002. The numbers of strains of individual bacterial species were roughly the same in both periods of monitoring.

**Results:** Thus, no improvement in occurrence of bacteraemia in intensive care units and other departments could be regarded. The increase of antibiotic resistance was demonstrated in several species including *Acinetobacter*, *Pseudomonas aeruginosa* as well as in coagulase-negative staphylococci, notably to meropenem and fluoroquinolones.

**Conclusion:** The results obtained from monitoring of antibiotic resistance might be applied for rationalization of antibiotic use and for selection of alternative reserve antibiotic, especially by the empiric prophylaxis and/or therapy.

**K e y w o r d s:** antimicrobial resistance surveillance – antimicrobial resistance – bacteraemia.

**Mária BELOVIČOVÁ, Soňa KIČOVÁ, Rafael REDHAMMER, Štefan HRUŠOVSKÝ**

### **BODYPLETHYSMOGRAPHY IN DIFFERENTIAL DIAGNOSTICS OF DYSPNEA – OUR EXPERIENCES**

#### **SUMMARY:**

**Background:** Dyspnea is a common symptom in clinical practice. Functional lung examination is one of the possibilities how to diagnose cardiac or pulmonary cause of dyspnea.

**Patients and methods:** Altogether 63 patients (38 males, mean age  $72.5 \pm 9.45$ , 25 females, mean age  $72 \pm 9.75$ ) admitted to our clinic with dyspnea, were examined. Following the complete examination all patients underwent three bodyplethysmographic examinations on the Medical Graphics apparatus.

**Results:** The examination showed a decrease in the functional parameters, such as FVC, FEV1, FEF 25 %, FEF 50 %, FEF 70 % in patients with lung congestion that were statistically significantly changed on i.v. administration of furosemide. In the absence of lung congestion the lung volumes remained unchanged.

Conclusions: Bodyplethysmographic examination with i.v. administration of furosemide – furosemide test – also reveals a latent heart failure. We believe that introducing furosemide test in clinical practice may serve as further step in differential diagnostics of dyspnea in acute patients.

**K e y w o r d s :** dyspnea – bodyplethysmographic examination – furosemide test.

**Milan KOKAVEC, Vasil ŠTEFANCO, Cyprián KOPÁČ, Peter TISOVSKÝ**

## **SURGICAL TREATMENT OF CEREBRAL PALSY WITH ORIGIN IN CHILDHOOD AT I. ORTHOPAEDIC CLINIC OF UNIVERSITY HOSPITAL, COMENIUS UNIVERSITY MEDICAL FACULTY, AND SLOVAK MEDICAL UNIVERSITY – HISTORICAL VIEW ?**

### **SUMMARY:**

Background: The authors analyze the preventive effect and timing of surgical treatment (Orthopaedic selective spasticity control surgery - OSSCS) in patients with cerebral palsy with origin in childhood in an effort to make the child walk to avoid severe bone deformities with regard to the form and type of affection.

Patients and methods: During 1991 – 2003 at Orthopaedic Clinic of University Hospital in Bratislava 477 patients with spastic or mixed form of cerebral palsy with origin in childhood were operated on. Of these patients girls and boys represented 227 and 250, respectively. Altogether 1388 surgical interventions were made. The mean age at the time of operation was 7.8 years (1 – 46 years). The greatest number of surgical interventions was performed within the age range of 4 – 8 years. Children younger than 2 years and older than 16 were operated on rarely. The results were evaluated according to the Smetana postural and movement standards. The best movement made by child was evaluated preoperative and postoperatively. Altogether 197 patients with spastic form were evaluated.

Results: Excellent and very good results were obtained in 60 % in patients with diparesis. In this group we failed to make lying patients walk or significantly improve their function. Unfavourable results were recorded in 12 % of patients with severe quadraparesis. In patients with monoparesis and hemiparesis neither excellent nor very bad results were recorded because these patients with moderate range of movement, may walk.

Conclusion: Surgical treatment of cerebral palsy with origin in childhood at I. Orthopaedic Clinic of University Hospital, (FN), Comenius University Medical School (LFUK), Slovak Medical University (SZU) appears in lower age categories to prevent severe affections and is oriented to multiple-floor and bilateral interventions. These interventions facilitate better comfort of patients and early return to preoperative activity level. Good postoperative result needs interdisciplinary approach and concentration of children into intensive care centers dealing with these problems.

**K e y w o r d s :** cerebral palsy with origin in childhood - surgical treatment – timing – spasticity.

**Júlia HRACHOVÁ, Mária KREMEŠOVÁ, Anna HRČKOVÁ**

## **LATEST TRENDS IN THE NUTRITION OF INFANTS AND TODDLERS**

**SUMMARY:**

The latest trends in the nutrition are aimed at making the components of artificial lactic nutrition of infants as close to the effects of maternal milk as possible and at exploiting of prebiotics, probiotics and symbiotics that have a favourable effect upon the health status thereby facilitating the prevention of some diseases.

**K e y w o r d s :** maternal milk - infant formula – prebiotics – probiotics – symbiotics – lactose intolerance – immunity – intestinal microflora – mineral resorption.

**Darina CHOVANCOVÁ, Iveta HARTMANNOVÁ**

**NUTRITION AND ITS ADDITIVES IN INFANTS BORN PREMATURELY****SUMMARY:**

Over the past decade many advances have been made with regard to the survival, medical care and outcome of premature infants, especially those who weigh at birth less than 1000 g. To improve their growth and neurodevelopment delays fortified nutrition after discharge from hospital is recommended. Special premature formula or breast milk enriched with fortifiers together with vitamin supplementation (A, D, E, C) and calcium and phosphorus addition help to improve the growth. Weaning preterm infants on to solids is advised at any age from 4 to 6 months of chronological age. Nutritional status of preterm infants is evaluated by means of clinical and laboratory examinations (growth parameters – weight, length, head circumference, serum urea, alkaline phosphatase, urinary excretion of calcium and phosphorus).

**K e y w o r d s :** extremely low birth weight newborn – postdischarge nutrition - breast milk – additional fortification - growth – neurodevelopmental outcome.

**Emília KAISEROVÁ, Kristína HUSÁKOVÁ, Pavol SÝKORA**

**EARLY DIAGNOSTICS OF CENTRAL NERVOUS SYSTEM TUMOURS IN CHILDREN****SUMMARY:**

Central nervous system tumours are considered second most frequent malignancies in children. They account for as much as one fourth of deaths from malignant tumours. The prognosis depends on histologic composition, tumour location and operability. In inoperable tumours it depends on the response to other treatment. Early diagnosis is a significant prognostic factor. The tumours should be suspected especially in children with risk factors (some hereditary diseases or previous irradiation of CNS) and in persistent clinical symptoms that are indicative of CNS affection. The most important symptoms are those of intracranial hypertension, such as headache, vomitus, spasms and other focal neurological symptoms. In suspected CNS tumours the child requires urgent neurological examination and other examinations based on the clinical finding. The diagnosis is confirmed by imaging examination mainly nuclear magnetic resonance or computing tomography if magnetic resonance is not available. Neurologist, pediatric oncologist

and neurosurgeon will decide on further examination and therapeutic procedure.

**K e y w o r d s :** central nervous system tumours – intracranial hypertension – vomitus – headache – spasms – ataxia/dysmetria – neuropathies of cranial nerves – vision disorders – endocrine changes – spinal cord tumours

**Rudolf ŠTEFANOVIČ**

## **CURRENT STATE OF PSYCHOSOMATIC AND BEHAVIORAL MEDICINE IN SLOVAKIA AND ITS PERSPECTIVES**

### **SUMMARY:**

Psychosomatic and behavioral medicine is a legislative newcomer in the structure and organization of the Slovak health care. Accordingly, our efforts aim to provide the elementary information on the tasks and objectives of this new approach to understanding medicine. We also want to provide the data on the implementation of this medical field into educational process, science and research as well as medical practice on all the levels of doctor-patient/client relationship. Historical development of psychosomatic and behavioral medicine worldwide and in Slovakia is outlined, too.

**K e y w o r d s :** psychosomatics – behavioral medicine – bio-psycho-social approach – psychology of health – multifactorial etiopathogenesis – interdisciplinary cooperation.

**Ladislav HEGYI, Zuzana TAKÁČOVÁ**

## **DEVELOPMENT AND FORMATION OF PUBLIC HEALTH**

### **SUMMARY:**

The term public health has been formed for centuries and is associated with the opinions on health and modes of its protection and promotion. The present-day medicine dates back to the original primitive forms of healing by Hippocrates, Galen and Avicenna. The efforts of preventing the transmission of infectious diseases started when the fundamental principles of hygiene and epidemiology were formulated leading to the creation of these independent scientific fields. Endeavors to live to healthy old age and to prevent the spread of diseases resulted in the setting up of rules of healthy way of living as expressed by the Salern School, Comenius and many others. The English scientists Graunt, Petty and Halley are the founders of health statistics that facilitated more precise knowledge on the health status of population. Finally in the first half of the 19th century the concept of „social medicine“ arises combining the knowledge on health status of population. Virchow's idea underlining the significance of social reforms for health of inhabitants and the obligation to protect health of all members, was extremely significant for the development of the field of public health. Simultaneously with public health, hygiene was developed that was referred as Public Health in Anglo-Saxon countries. Approximately in 1840 this term was used to denote healthcare legislation and sanitary measures to support health of most vulnerable groups of population.

In 1952 the WHO Expert Commission adopted C.E.A. Winslow's definition of 1923: „Public health is science and art on disease prevention, life prolongation, development of physical and mental health and effectiveness through joint efforts of the society“. This definition served as a basis for that adopted by the Ministry of Health of the Slovak Republic and published in its first conception of public health in 1997.

The above development confirms the complexity of the term of „public health“ as well as its multidisciplinary character with significant parts on social medicine, hygiene, epidemiology, statistics, health education and health promotion, and other fields. Different views pose different opinions and definitions, potentiating its dynamic development as modern scientific field that creates the background for the formulation of state health policy and facilitates better health status of population, as well.

**K e y w o r d s :** public health – hygiene – epidemiology – health education – health promotion.

**Stanislav CAGÁČ, Soňa WIMMEROVÁ, Ivana BESEDOVÁ, Tomáš TRNOVEC**

## **IMPROVEMENT AND RATIONALIZATION OF CARE FOR ACUTE MYOCARDIAL INFARCTION PATIENTS IN SLOVAKIA**

### **SUMMARY:**

During the past 25 years the development of care for patients with myocardial infarction was characterized by dramatic and dynamic changes. The implementation of the project Diagnostic and Therapeutic Audit in patients with acute coronary syndromes in prehospital and hospital phase (Audit) in 3123 patients with acute myocardial infarction revealed significant information on the state of management and treatment of patients with acute myocardial infarction in Slovakia, that was compared with that in the world. Basic information for perspective comparative studies was also obtained. The obtained results contribute mainly to the activities of GPs for adults, internists, cardiologists and geriatricians. Medical societies including The Intensive Medicine Association may involve a wide spectrum of their members in enhancing of the care for patients with acute myocardial infarction.

Our brief information for health care professionals deals more closely with some significant data demonstrated in the study Audit, such as prehospital delay of patients with acute myocardial infarction, thrombolytic treatment and hospitalization of patients with uncomplicated acute myocardial infarction. In the history of Slovakian health care the conducted project is the first application of this method on a large group of patients. Currently all effective measures leading to the introduction of this audit approach in Slovakia have to be realized.

**K e y w o r d s :** acute myocardial infarction – clinical audit – Slovakia.



## **CONTENTS   LEKÁRSKY OBZOR 5/2004 - SUMMARY**

**Rastislav DZÚRIK**

### **HEALTH CARE IN USA: YEAR 2003 – CRITICAL ANALYSIS COMMITTEE FOR QUALITY ASSURANCE IN USA**

**Martin UHER, Mária PISARČÍKOVÁ, Milan KURÁK, Anetta ČERNÁKOVÁ**

### **COMPLICATIONS OF CENTRAL VEIN CANNULATION IN CHILDREN**

#### **SUMMARY:**

**Background:** The cannulation of central vein involves complications, such as failed cannulation, damaged catheter, hematoma or inappropriate insertion of the catheter, coiling of guidewire, placement of the catheter in the contralateral vein, injury or puncture of the artery or of the nerve plexus, pneumothorax, hydrothorax, hydromediastinum, cannulated artery thrombosis, air embolism, catheter fraction embolism, dysrhythmia, pull out of the catheter.

**Patients:** The group comprised the patients with indwelling central venous catheters. 165 children (86 boys and 79 girls) had 26 indwelling multiple lumen catheteres (i.e. 11.93%) and 192 had single lumen catheters (88.07%). In all the group the mean age of patients with central venous catheter was 36.8 months (in patients with multiple lumen venous catheter 125.35 months, in patients with single lumen central venous catheter 24.8 months).

**Methods:** In the period of 5 years the incidence of noninfectious complications of central venous catheters was retrospectively evaluated. Nonparametric Mann-Whitney test and Student unpaired t-test were used for statistical analysis.

**Results:** Within the 5-year period altogether 59 complications of cannulation of central vein were recorded. Cannulation complication as the cause of death was reported in neither case. The most frequent complications were punctured artery (9 cases) and insertion of central venous catheter in another vein (8 cases). In 37 cases at least one unsuccessful cannulation was reported before introducing central venous catheter. Vena subclavia l. sin., vena jugularis interna l. sin. and vena femoralis l. sin. are at highest risk for the incidence of noninfectious complications due to anatomical reasons. We also wanted to find whether changes in the cannulation mode and management of central venous catheters affect the onset of complications and therefore we compared 2 groups of patients in the years 1995-1996 and 1997 – 1999. The differences in the incidence of complications associated with the cannulation of veins were insignificant in both groups. The children over 10 years are at highest risk.

**Conclusion:** The main prevention is proper consideration of the need of central venous catheter. In the cannulation of vena cava superior (cupola of pleura, course of veins and ductus thoracicus) the left side poses less risk due to anatomical reasons. Proper control of the position of central venous catheter mainly of its apex is a basic prerequisite of prevention of further complications.

**K e y w o r d s :** central venous catheter - complications.

**Mikuláš HRUBIŠKO, Mária ŠIRICOVÁ, Ján MARTINKA, Martin MISTRÍK, Denisa**

**STEMNICKÁ, Júlia HORÁKOVÁ, Jozef LUKÁČ, Adriana SAKALOVÁ**

## **MAGNETIC PURGING OF BLOOD STEM CELL TRANSPLANTS**

### **SUMMARY:**

**Background:** Contamination of blood stem cells (SC) by residual tumor cells is a problem in autologous transplantation of SC (SCT). High amounts of T-lymphocytes can cause graft versus host disease (GvHD) in allogeneic SCT. T-lymphocytes are also a problem in autoimmune diseases. Purging of SCT in some cases is therefore necessary. By negative purging we try to remove the unwanted cells, by positive purging we are picking up just those cells, we need for SCT, i.e. the CD34 positive (CD34+) cell fraction. CD34 antigen is present on more mature SC. A combined mouse-human antibody with ferromagnetic particles is bound to CD34+ cells and they are then picked up in magnetic field.

**Patients and methods:** The results of first 10 cases of stem cells purging on the CliniMacs device (Miltenyi Biotech) are presented. In 5 cases allogeneic SC of healthy donors were purged and in the remaining 5 cases the tumor contamination of autologous transplants was removed.

**Results:** The amount of nearly pure CD34+ cells formed only 0.72 % of the initial amount of leukocytes. The yield of CD34+ cells was 68 %, the CD34+ cells were concentrated 182-fold, and their purity was 96 % (all values = average). In allogeneic harvests we achieved in average a 5470-fold T-depletion. Virtually all T-lymphocytes were present in the CD34 negative fraction. The yield of coloniforming units (CFU) was 17 % and the CFU's were concentrated 40-fold.

**Conclusion:** We confirmed a high effectiveness of purging and T-depletion on one hand and high requirements for the harvest quality on the other, because a loss of CD34+ cells between 10 – 50 % after purging (average 32 %) was observed. In all 10 cases described a sufficient amount of stem cells (expressed indirectly as CFU) was obtained.

**Key words:** Blood stem cells – transplantation of stem cells – purging of stem cells – in vitro cultivation of stem cells – coloniforming unit (CFU) – CD34 antigen.

**Martin MISTRÍK, Ján LAZÚR, Angelika BÁTOROVÁ, Eva DEMEČKOVÁ, Ján HUDEČEK, Nataša CHOVANCOVÁ, Daniela KLEPANCOVÁ, Elena TŕTHOVÁ, Alexander VARGA, Helena VONGREYOVÁ, Mária ŽARNOVIČANOVÁ**

## **THE INCIDENCE OF HAEMATOLOGIC DISEASE IN SLOVAK REPUBLIC**

### **SUMMARY:**

**Background:** The epidemiology of most frequent and most significant hematologic diseases or abnormalities is of great importance for determining the state of hematology and its further development.

**Patients and methods:** The authors attempted to map the incidence of selected diagnoses cared for by clinical hematologists and based on their findings they prepared a simple form whose purpose was to gather data on patients with hematologic and oncohematologic diagnoses in the Slovak Republic. In cooperation with wide hematologic community they obtained and summarized the data that represent the core information of the publication.

Results: In the year 2000 the data on the screened and followed up patients comprised overall 59 648 patients. Of them the greatest number – 32 262 patients were followed up due to anemia (sideropenic anemia – 24 412 patients, anemia in chronic diseases – 4106 patients, vitamin B12 deficiency – 3025 patients). Leukocyte abnormalities appear in 13 854 patients, of these 8160 patients have oncohematologic diseases. Of this number 4792 patients have lymphoproliferative diseases, 2478 myeloproliferative diseases and 765 have myelodysplastic syndrome. Hemostasis disorders are observed in 10 532 patients, of this number 5996 and 4536 patients have thrombocyte abnormalities and coagulopathies, respectively.

Conclusion: The results show the increasing trend in benign and malignant diseases of hemopoiesis and therefore their early diagnostics has to be given priority.

Key words: clinical hematology – hematologic diseases – oncohematologic patients .

**Ján MARTINKA, Eva FEHÉRVÍZYOVÁ, Mikuláš HRUBIŠKO, Denisa STEMNICKÁ, Emília KAISEROVÁ, Jozef LUKÁČ**

## **COLLECTIONS OF PERIPHERAL BLOOD STEM CELLS IN CHILDREN WITH BODY WEIGHT UP TO 25 KG FOR THE PURPOSES OF AUTOLOGOUS TRANSPLANTATION**

### **SUMMARY:**

Introduction: Peripheral blood stem cells as a source of haematopoietic stem cells at present practically replaced cells of bone marrow in autologous transplantations. The authors briefly describe the technique of collection of peripheral blood stem cells in children with low body weight.

Patients and methods: Results of 38 separations, which were performed in Department of Hematology and Transfusiology of University Hospital in Bratislava in 29 children with body weight 25 kg and less, are presented. Standard and large volume leukapheresis are compared.

Results: Median of collection in standard volume separations was  $2.0 \text{ CD34}^+ \text{ cells} \times 10^6$ ,  $66.6 \text{ CFU} \times 10^4$  per kg of patient's body weight. Median of collection in large volume separations was  $9.25 \text{ CD34}^+ \text{ cells} \times 10^6$ ,  $452.5 \text{ CFU} \times 10^4$  per patient's body weight.

Conclusion: Standard and large volume leucapheresis can be performed without higher risk in children with low body weight, as well.

Key words: peripheral blood stem cells – collections of peripheral blood stem cells in children with body weight 25 kg and less.

**Adriana SAKALOVÁ, Dagmar HOLOMÁOVÁ, Martin MISTRÍK, Mikuláš HRUBIŠKO, Slávka GAŽOVÁ, Irena CHABROOVÁ, Tomáš LIPŠIC, Eva DEMEČKOVÁ, Zdenka ŠTEFÁNIKOVÁ, Pavol KOTOUČEK, Katarína MASÁROVÁ, Ján MARTINKA**

## **CURRENT PROBLEMS OF EARLY RECOGNITION OF PRIMARY MALIGNANT MONOCLONAL GAMMOPATHY**

**SUMMARY:**

Monoclonal immunoglobulin (paraprotein) is characterized by a homogeneous structure of polypeptide chains, which are produced by one clone of B-lymphocytes maturing towards lymphoplasmacytic cells and plasmocytes. This clone unlike physiological polyclonal immune reaction is reacting on an antigen with proliferation of monoclonal cells. In malignant transformation to a lymphoma the monoclonal immunoglobulin produced by the tumor cells and its quantitative changes correspond with the tumor mass.

A complex overview of the recent experimental and clinical knowledge is given. The authors emphasize the significance of a primary monoclonal gammopathy which is observed in 1 – 3 % of healthy population in the age group about 50 years and around 10 % in the group above 70 years. When asymptomatic it is considered as a benign disease. The risk of transformation into the malignant gammopathy (multiple myeloma or Waldenström's macroglobulinemia) is ranging between 20 – 25 %. Early diagnosis enables a rational treatment and improves the prognosis.

Key words: monoclonal gammopathy – benign monoclonal gammopathy of undetermined significance – multiple myeloma – immunocytoma.

**Eva BOJTÁROVÁ, Branislav CZAKO, Martin MISTRÍK**

**VACCINATION OF ADULT PATIENTS AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION****SUMMARY:**

Patients undergoing stem cell transplantation (SCT) experience a prolonged period of dysfunctional immunity associated with an increased risk of bacterial and viral infections. Protective immunity to infectious agents preventable by routine vaccination is lost over time following both allogeneic and autologous SCT. Infections due to encapsulated bacterial organisms such as *Streptococcus pneumoniae* and *Haemophilus influenzae* type b remain prevalent even in the late posttransplant period. Thus, a reimmunization is needed at appropriate time intervals following transplantation to ensure immunity. Immunization programs for adult patients following SCT have shown that immunization with inactivated or subunit vaccines given at least 12 months after transplantation, is safe and effective. Live vaccines are generally contraindicated. Reimmunization practices vary widely amongst transplant centres. We present guidelines for a vaccination schedule used in our transplant centre.

Key words: transplantation of stem cells – immune reconstitution – vaccines - vaccination after transplantation.

**Peter MAKOVNÍK, Peter MLKVÝ, Juraj MÁJEK, Peter SLEZÁK, Marta HORÁKOVÁ**

**INDICATIONS FOR ENDOSCOPIC ULTRASOUND OF THE UPPER GIT****SUMMARY:**

Slovakia has introduced endoscopic ultrasound (EUS) with a slight delay. Since the year 2000 the

functioning institutions of endoscopic ultrasound involved Onkologický ústav sv. Alžbety (Oncological Institute of Saint Elizabeth) and Nemocnica sv. Cyrila a Metoda (University Hospital of Saint Cyril and Method), Národný onkologický ústav (National Oncological Institute) in Bratislava, Vojenská nemocnica (Military Hospital) in Košice, and Fakultná nemocnica (Faculty Hospital) in Martin. These institutions use echoendoscopes with rotating sector scanning generating circular images (360°) at a right angle to the axis of the endoscope. EUS is determined by anatomical and technical modalities of this examination methods. High frequency ultrasound waves may examine the distance of up to 4-6 cm from the probe enabling a detailed visualization of the gastrointestinal tract wall and its surrounding area. The most important indication is local-regional staging of cancer of the upper GIT.

Key words: endoscopic sonography – ultrasonography – endosonography.

**Pavol KOTOUČEK, Edgar FABER, Eva DEMEČKOVÁ, Martin MISTRÍK, Adriana SAKALOVÁ, Gabriela KIRSCHNEROVÁ, Klaudia MARKOVÁ, Andrea T”THOVÁ, Monika ŠUJANOVÁ**

## **ACUTE LYMPHOBLASTIC LEUKAEMIA, PHILADELPHIA POSITIVE – MODEL OF THE REFRACTORY LEUKAEMIA WITH GOOD THERAPEUTICAL RESPONSE**

### **SUMMARY:**

Background: Acute lymphoblastic leukemia (ALL) is hematologic disease curable in only 20 – 30 % of adults. The Philadelphia chromosome (Ph) – 22nd chromosome with a translocated part of 9th chromosome – t (9.22) can be detected in 20 % of adults with ALL and in 5 % of pediatric ALL. The Philadelphia positive ALL (ALL+Ph) leukemias have in leukemogenesis minimally one active oncogene Ph chromosome corresponding to bcr/abl fused gene. The leukemic clone ALL+Ph is able to survive chemotherapy in any dosage. Allogeneic transplantation of hemopoietic cells is the only treatment mode. The survival of ALL-Ph patients after allogeneic transplantation is 20 %. 16 years of concerted efforts were needed to develop selective bcr/abl inhibitor product tyrosin kinase – imatinib mesylate (IM). The introduction of IM in clinical practice enables complete remission also in these patients. Subsequent allogeneic transplantation may be performed in these patients. If IM is used routinely before allogeneic transplantation of all patients with ALL+Ph, patients’ survival may increase to as much as 85 %.

Case reports: Up to this time in Slovakia 2 patients used IM in the dose of 600mg/day; both patients were in the stage of early relapse of ALL+Ph. Both patients underwent intensive chemotherapy with hemopoietic cell allogeneic transplantation and achieved favourable clinical response – one patient complete remission, the other one partial remission.

Conclusion: Imatinib mesylate as a specific inhibitor of pathologic bcr/abl tyrosine kinase represents a great hope for patients with acute lymphoblastic Philadelphia positive leukemia.. Prospective studies are required so as to find its proper place in the therapeutic algorithm of this disease.

**Key words :** acute lymphoblastic leukemia – resistant leukemia – Philadelphia chromosome – imatinib mesylate.

**Stanislav CAGÁŇ, Tomáš TRNOVEC, Milan Povolovič, Soňa WIMMEROVÁ, Ivana BESEDOVÁ**

**INFORMATION ON PROJECT OF THROMBOLYTIC TREATMENT REAUDIT**

**EMIL VON BEHRING (1854 - 1917) - PRVÝ LAUREÁT NOBELOVEJ CENY ZA MEDICÍNU**

## **CONTENTS   LEKÁRSKY OBZOR 6/2004 - SUMMARY**

**Štefan NYULASSY**

### **FORTY YEARS OF CLINICAL IMMUNOLOGY AND POSTGRADUATE EDUCATION IN THAT THIS FIELD IN SLOVAKIA**

**Eva Jahnová, Mira Horváthová, Silvia Ilavská, Michaela Hanzelová, Kornélia Štefíková,  
Rastislav Dzúrik**

### **THE EFFECT OF VITAMIN D ON THE IMMUNE SYSTEM – ADMINISTRATION OF VITAMIN D TO OSTEOPOROTIC PATIENTS**

#### **SUMMARY:**

**Background:** The active vitamin D metabolite – hormone regulates not only the calcium homeostasis but it plays an important immunomodulation role, as well.

**Patients:** A group of 36 patients with postmenopausal osteoporosis or osteopenia with mean age of 62.5 years and average duration of menopause of 14.5 years, treated by calcium (0.5 g/day Ca in CaCO<sub>3</sub>) was examined in order to find the effect of vitamin D on some immunity parameters. A half of the subjects was applied vitamin D<sub>3</sub> 5000 IU – 3-times a week, the other half was given placebo for two months. Before vitamin D treatment and after 2 week and 2 month treatment, some immunological parameters were followed up to find out lymphocyte activity and activation in women with postmenopausal osteoporosis prior to and after vitamin D supplementation.

**Methods:** The followed up cell immunity parameters involved phenotype profile, expression of some adhesive molecules and IFN- $\gamma$  and IL-4 as intracellular cytokines by means of CD markers and flow cytometry.

**Results:** No changes were recorded in individual lymphocyte population or the activation marker (CD3HLADR). Following a two – month administration of vitamin D a significant decrease in the expression of CD11a, CD11b and CD54 on lymphocytes was recorded but increased expression of some adhesive molecules CD11c, CD18, CD54 and CD62L on neutrophils was observed. No differences in the expression of early marker of CD69 activation or in the expression of receptor for IL-2 (CD25) were found, however a significant decrease of receptor for CD71 transferrin was observed. After a two-month vitamin D supplementation a decrease IFN- $\gamma$  concentrations was observed with no significant effect upon the IL-4 concentration measured as intracellular cytokines.

**Conclusion:** In the above in vivo placebo controlled follow-up the knowledge on the immunomodulation effect of vitamin D was confirmed, which was previously known from in vitro studies. The above changes were recorded most frequently after a two-month application of vitamin D. We found some facts to date not followed up in vitro studies, either.

**Key words:** active vitamin D metabolite (1,25(OH)<sub>2</sub>D<sub>3</sub>) – immune system – phenotype profile – adhesive molecules – IFN- $\gamma$  and IL-4 – intracellular cytokines – flow cytometry.

**Tomáš BRAUNSTEINER**

## **TECHNIQUE OF INTRAMEDULLARY NAILING OF THE ULNA IN MONTEGGIA LESIONS**

### **SUMMARY:**

**Introduction.** Monteggia fractures and lesion occur in only 0.4% of all fractures of the upper extremity, but represent a great therapeutic problem. For it's treatment good skills and patience are needed. Due to frequent comminuted fractures of the ulna open reduction and internal fixation are accompanied with septic risk and aseptic complications.

**Material and methods.** The basic principle of management of Monteggia fractures is to restore the length and proper rotation of the ulna and reduction of the dislocated radial head. At the Department of Trauma Surgery, Derer University Hospital in Bratislava, an intramedullary implant system was developed for both forearm bones, fitted also for the treatment of Monteggia lesions. At the Department of Trauma Surgery 21 patients were treated with this technique. The authors present step-by-step the technique of intramedullary management of Monteggia lesions on fluoroscopic pictures. Results were scored with the Radin - Riseborough, Broberg - Morrey and Mayo Clinic Functional Score (MCFS) scoring systems.

**Results.** 16 patients were scored as excellent and good, 3 patients had fair and 2 unsatisfactory results. These patients were operated after a long injury-operation time gap, had associated radial head fractures and extensive soft-tissue damage (high-energy trauma). Septic complications, aseptic bone necrosis were not observed in the patient group. Length and rotation of the ulna were proper in all cases.

**Conclusion.** The presented intramedullary technique for the treatment of Monteggia fractures and lesions is an excellent alternative to open reduction and internal fixation.

**K e y w o r d s :** Monteggia lesions – intramedullary osteosynthesis – minimally invasive osteosynthesis

**Ingrid SCHUSTEROVÁ, Jana ŠALIGOVÁ**

## **DYSLIPIDEMIA, OBESITY AND METABOLIC SYNDROME X IN CHILDREN AND ADOLESCENTS**

### **SUMMARY:**

**Background:** Obesity is closely connected with arterial hypertension, dyslipidemia, insulin resistance and diabetes mellitus 2 whose frequency increases in childhood, too. The aim of the paper is to point at the incidence of obesity, particularly in the presence of dyslipidemia and its possible association with other risk factors for cardiovascular diseases.

**Patients and methods:** The authors examined 89 children and adolescents aged from 6 to 20 years due to detected hypercholesterolemia. Besides the examination of lipid spectrum and insulin, physical examination (BMI), 24-hour ambulatory of blood pressure monitoring (ABPM) and echocardiographic examination to assess the mass of the left ventricle were also conducted.

**Results:** Familial hypercholesterolemia was observed in 26 children (29.21 %), polygenic



hypercholesterolemia in 23 children (25.84 %), combined dyslipidemia in 27 children (30.34 %) and normal lipid spectrum in 13 children (14.61 %). In 11 (12.22 %) and 18 children (20 %) obesity and overweight were revealed, respectively. The largest incidence of obesity (18.51 %) and overweight (33.3 %) was seen in patients with combined hyperlipoproteinemia, who also showed the highest mean BMI and the highest blood pressure values in ABPM. Obese and overweight patients showed average blood pressure values and the mass of the left ventricle was significantly higher in comparison with normal subjects and the insulin level was also significantly higher.

**Conclusion:** Obesity represents an increased risk and in many cases also cumulative risk factors for cardiovascular diseases. Obesity is associated with the highest blood pressure values, more frequent incidence of dyslipidemia, predominantly combined mainly with hyperlipoproteinemia, increased body mass of the left ventricle and increased insulin level. In children it may be manifested as an early subclinical metabolic syndrome X and in this case preventive measures and treatment have to be considered.

**Key words :** obesity – dyslipidemia – blood pressure – body mass index – metabolic syndrome X.

**Miroslav ŠAŠINKA, Katarína FURKOVÁ, Ľudmila PODRACKÁ**

## **APOPTOSIS IN IMMUNOPATHOGENESIS OF GLOMERULONEPHRITIS**

### **SUMMARY:**

The authors focused on the role of apoptosis in the onset and development of inflammatory proliferation in the glomerulus. Under physiological conditions the apoptosis (programmed cell death) removes the abundance of cells. The apoptosis is the system of reactions comprising the recognition of cells which are to be discarded, disappearance of their metabolic activity, breakdown and extrusion of the intracellular components and the pulp, the origin of the so called apoptotic bodies and their subsequent phagocytosis (silent death). During the past years the research of proliferative forms of glomerulonephritis revealed that this form of glomerulonephritis may arise not only as a result of glomerular cell proliferation (especially proliferation of mesangial and endothelial cells, but it can also be induced by the apoptosis disorder, i.e. cessation of necrosis of physiologically breaking up cells. The authors analyze the morphological and pathophysiological mechanisms of apoptosis in glomerulonephritis, its course, the importance of apoptosis for the onset of scars in the kidneys, current diagnostic modes and the perspective exploitation of new knowledge in the therapy of glomerulonephritis and autoimmune diseases. At present the changes in proliferative glomerulonephritis should be considered as a result of interactive influence and balance of proliferative and apoptotic factors.

**Key words :** apoptosis – necrosis – proliferative glomerulonephritis – programmed cell death - silent death – mesangial and endo-thelial glomerular cells – scars in kidneys.

**Igo KAJABA, Štefan NYULASSY, Martina VALACHOVIČOVÁ, \*Vladimír BZDÚCH**

## **IMPACT OF NUTRITION ON IMMUNE SYSTEM**

### **SUMMARY:**

Authors present the survey of some basic and new information about impact of nutrition on the immunity. They emphasize the immunoprotective effect of adequate nutrition on human and negative effects of malnutrition on protective immune mechanism, which are not yet completely understood. Attention is devoted to particular factors of nutrition as energy and specific nutrients mainly proteins and protective substances – vitamins and minerals. They also mention immunomodulatory effects of some plants and its compounds (echinacea purpurea, glucans, coenzyme Q10 and prebiotics – inulin and its influence on bacterial flora of the gastrointestinal tract), which are recently being applied as a nutrition supplements in the population of prosperous countries.

**K e y w o r d s :** nutrition – immune system – proteins – vitamins – minerals – immunomodulation.

**Miroslav MIKULECKÝ**

## **COMMENTS TO THE POSTGRADUATE COURSES OF MEDICINE OF CATASTROPHS**

### **SUMMARY:**

Despite of the increasing actual importance of possible catastrophic events during the last years, the frequency of postgraduate courses for physicians and middle health workers at The Slovak Health University is decreasing. Some particularly problematic topics are, of course, discussed in corresponding specialized courses. That's true for example for infectology and biological weapons which were recently in the limelight of media. The knowledge about the remaining two main types of weapons of mass destruction, particularly the atomic ones, however, comes into background. This is documented by some experience of the author. Particularly the broader issue of interaction between physical particles or fields and living matter is analyzed. Besides their artificial production, a parallel exists in the sun activity. As an example, the powerful burst of solar energetic particles in October 1989 is mentioned, able to kill an astronaut on the Moon, and measurable at the Earth polar caps onboard supersonic aircrafts at high altitudes. To know such influences means to understand the effects of „cosmic weather“ and generally those from the cosmos, mainly from the Sun, not only on the biologic substrate including the man but also on the human society. Something like that was supposed already by Babylon priests. The first scientific attempt to elucidate the connection between physical factors from the Sun and historical process was made by Tchijevsky: according to him, with the alternation of maxima and minima in the sun activity, expressed as number of solar spots, proceeds parallelly an alternation of destruction and quietness in the evolution of mankind. The inferentially statistical processing of some data seems to testify to this concept. The question arises whether it is possible to define and simulate these cosmic signals. May be, on answering it positively is based the surprising and so far hardly sufficiently supported statement in an acknowledged „Current Contents“ journal that it is possible to „influence directly the major portion of the approximately six billion brains of the human species...“ The authors of this statement warn against misuse and call for open discussion on this

topics „within the scientific and public domain“. Accordingly, it could appear that there is emerging on the horizon a psychologic „weapon“ with a possible alternative of mass humanization instead of mass destruction.

**K e y w o r d s :** weapons of mass destruction – postgraduate education – biophysics of particles and fields – history – psychology.

**Marián ŠAJTER, Ernest SIVÍK**

## **INSTABILE CHEST WALL**

### **SUMMARY:**

The increased incidence of chest trauma is associated with the development of transportation with traffic accidents taking a leading place among the causes of severe chest injuries. Rib fractures are the most frequent types of the chest injury. Simple fractures are easy to manage, however rib fractures leading to the chest wall instability and subsequent respiratory insufficiency with high mortality (more than 50 %), still pose a medical problem. At present there is no uniform opinion as to whether conservative or surgical treatment should be initiated. The defenders of surgical treatment point at the fact that chest wall stabilization facilitates early weaning of the patient from artificial ventilation and early rehabilitation.

**K e y w o r d s :** rib fractures – instabile chest wall – surgical stabilization of chest – artificial ventilation.

**Blažena CAGÁ“OVÁ, Jaroslav KRESÁNEK, Silvia PLAČKOVÁ**

## **PROKINETICS – SIDE EFFECTS, INTOXICATIONS**

### **SUMMARY:**

The authors point to the risk occurring in the treatment prokinetics, describe the clinical symptoms in overdose and present the therapy of intoxications by prokinetics.

**K e y w o r d s :** prokinetics – side effects – overdose – intoxications – treatment.

**Milan KURÁK, Mária PISARČÍKOVÁ, Anna ČERNÁKOVÁ, Tomáš PARILÁK, Juraj HEDVIG**

## **PARACETAMOL POISONING THERAPY**

### **SUMMARY:**

Paracetamol poisoning remains one of the most common, potentially lethal ingestions encountered in clinical practice. The pathophysiology, clinical manifestations, and diagnosis of this condition are discussed. The treatment of paracetamol intoxication is reviewed here.

**K e y w o r d s:** poisoning – paracetamol – N-acetylcysteine – protocol.