

## **• C O N T E N T S    L E K Á R S K Y   O B Z O R   7-8/2003   S U M M A R Y**

**Lubomír LISÝ, Ivan GOGOLÁK, Lubomír LIPOVSKÝ, František CIBULCÍK**

### **ACUTE LEUCOENCEPHALOPATHIES**

#### **SUMMARY:**

Acute leucoencephalopathies present an etiologically heterogenous group of peripheral nervous system diseases with predilection affliction of the white matter. A variety of causes as well as acute character of their course call for prompt differential diagnostics of acute encephalopathies. This is based not only on clinical picture but also on numerous auxilliary laboratory diagnostic methods. The paper presents the most frequent types of acute leucoencephalopathy, their variations and modes of differential diagnostics. The main stress is placed on the inflammatory and toxic forms of afflictions and modes of their treatment.

Key words: leucoencephalopathy – sclerosis multiplex - acute idiopathic inflammatory demyelination encephalomyelitis – Marburg disease – neuromyelitis optica (Devic) – Schilder disease – radiation encephalopathy.

**František CIBULCÍK, Ivan GOGOLÁK, Lubomír LIPOVSKÝ, Lubomír LISÝ**

### **HEADACHE – AS A SYMPTOM OF SEVERE NEUROLOGICAL DISEASE**

#### **SUMMARY:**

Differential diagnostics of headache is one of the most complicated tasks in clinical medicine embracing more than 399 different types of headache and its causes. The majority of them manifest as pronounced subjective complaints of a patient and only some of them seriously endanger his/her health and life. The crucial problem rests in prompt and accurate detection of this particular group. High level neurologic and somatic examinations diminish the risk of diagnostic failures. Along with anamnestic data they provide a more exact characteristics of pain and facilitate identifying the risk types. These include cephalgia of the type occurring „first time in one’s life”, newly evolved headache after the age of 50, subacutely deteriorating cephalgia, cephalgia connected with fever, meningeal syndrome and vomitus, cephalgia in patients with tumorous diseases or HIV positive tests and headache other than migraine with

aura, accompanied with abnormal neurological focus finding, cognitive deficiency or papilla edema of the optic nerve. Subarachnoidal hemorrhage, brain tumours and arteriitis temporalis are classic examples of health and life endangering diseases manifested in some of the above headaches.

Key words: acute headache – subarachnoidal hemorrhage - arteriitis temporalis - treatment of status epilepticus.

**Ivan GOGOLÁK, Lubomír LIPOVSKÝ, František CIBULCÍK, Lubomír LISÝ**  
**DIAGNOSIS AND TREATMENT OF NON-TRAUMATIC INTRACEREBRAL HAEMORRHAGE**

**SUMMARY:**

Spontaneous intracerebral haemorrhage contribute to less than 1/5 of all strokes. The most common cause is untreated chronic arterial hypertension. Other common causing factors are arteriovenous malformations, brain tumors, cerebral amyloid angiopathy, coagulation defects and anticoagulant therapy, illegal drugs and secondary haemorrhagic transformation of acute brain infarctions. The clinical presentation depends on the site and severity the haemorrhage. An access to urgent CT scan is vital for diagnosis. Cerebral angiogram or MRI scan is indicated to identify the source of atypical haemorrhage. The majority of patients are managed conservatively. There are no set criteria that would indicate for surgical management of intracerebral haemorrhage. Evacuation of haematoma is recommended in: 1. superficially located haematomas measuring 20-80 ml with worsening neurological status, relatively young age of the patient or expanding behaviour, 2. cerebellar haematomas in diameter over 3 cm or causing hydrocephalus. Worsening state of consciousness and /or focal neurological symptoms of patient who was in good condition on admission is a clear indication for surgical management. Surgical management is not indicated for patients with a small haematoma (less than 2 cm in diameter) and moribund patients (Glasgow Coma Scale < 5).

Key words: intracerebral haemorrhage – hypertensive haemorrhage – arteriovenous malformations – intraventricular haemorrhage – evacuation of intracerebral haematoma.

**Ivan GOGOLÁK, Lubomír LIPOVSKÝ, František CIBULCÍK , Lubomír LISÝ**  
**DIAGNOSIS AND TREATMENT OF SUBARACHNOID HAEMORRHAGE**

**SUMMARY:**

Spontaneous subarachnoid haemorrhage (SAH) is a serious condition, most frequently caused by a ruptured intracranial aneurysm. The annual incidence is approximately 5-10 cases per 100 000 population. The majority of patients affected are under 60 years of age. The symptoms of subarachnoid haemorrhage have a sudden onset. The cardinal symptom is a severe, so called „explosive” headache accompanied by vomiting, confusion or loss of consciousness and meningeal syndrome. Focal neurological signs are present on recurrence of bleeding where the haemorrhage can disintegrate cerebral tissue, or they may present later as a result of ischaemic brain damage from vasospasm of cerebral blood vessels. The diagnosis of aneurysmatic SAH is based on the extremely sudden onset of clinical syndrome and is confirmed by an urgent CT scan, that will show haemorrhage in the subarachnoid space. Blood-stained liquor is present on lumbar puncture. An angiogram of cerebral vessels is always indicated to detect precise localization and size of ruptured aneurysm. The therapy is aimed at rapid surgical elimination of the aneurysm from the intracranial circulation. This is especially valid for patients in good clinical condition (Hunt and Hess stages I-III). It is vital that surgical elimination of the aneurysm is not postponed, since the current level of prevention of secondary ischaemic complications allows for surgical intervention not only in the early stage (within 72 hours) but also when vasospasms are present (day 4-14) without any increased risk of poor outcome of surgery.

Key words: aneurysmatic subarachnoid haemorrhage (SAH) – benign perimesencephalic SAH – clipping of ruptured intracranial aneurysm – endovascular treatment – nimodipine.

**František CIBULCÍK, Ivan GOGOLÁK, Lubomír LIPOVSKÝ, Lubomír LISÝ**  
**CRANIOCEREBRAL TRAUMA**

**SUMMARY:**

Cranio-cerebral trauma is one of the most serious causes of death and disablement in young people. Traumatic impairment of cerebral tissue is divided into primary and secondary. Primary impairment appears immediately during trauma presenting in two forms – diffuse axonal impairment and cerebral contusion. Secondary impairment is associated with systemic

responses of the organism to the trauma and develops within minutes or days after the accident. Intracranial factors (hematoma, edema) and systemic factors (arterial hypotension and hypoxia) play an important role in the development of secondary impairment. Primary impairment can be prevented by avoiding accidents, while secondary impairment may be often successfully managed by early treatment. Surgical evacuation of expansive lesions and intracranial pressure monitoring may affect intracranial factors. Systemic causes are important in early posttraumatic period when they can be influenced by providing good circulatory and respiratory functions. Systemic measures play a key role in the prognosis of patients with severe craniocerebral trauma.

Key words: craniocerebral trauma – primary and secondary impairment - intracranial hemorrhage - intracranial hypertension- hypotension - hypoxia.

**Ivan GOGOLÁK, Lubomír LIPOVSKÝ, František CIBULCÍK, Lubomír LISÝ**  
**TREATMENT OF ACUTE ISCHEMIC STROKE**

**Summary:**

Ischemic strokes are medical emergency and their consequences can be improved by immediate therapeutic response and by administration of specific (thrombolytic) therapy carried out in specialized stroke units. Adequate basic therapy and intravenous thrombolytic therapy commenced within 3 hours after onset of the symptoms of ischemic stroke was shown to lead to significant improvement of therapeutic outcomes. Positive therapeutic outcome of an early thrombolysis significantly outweighs the possible risks. The need for specialized units for emergency admission of patients with acute ischemic strokes was confirmed. The treatment of patients in stroke units with specially trained staff improves the outcome of stroke therapy by prevention and treatment of aspiration pneumonia, respiratory tract infections, thrombophlebitis in paralytic lower limb, pulmonary embolism, urinary tract infections, pressure sores and other potentially fatal extracerebral complications of acute strokes. Lacunar stroke present with a lower degree of ischemic cerebral damage, low mortality, low recurrence rates, lower incidence of complications requiring multidisciplinary intervention and they do not require intensive rehabilitation care. They do not require further therapy in specialized stroke unit, once fully diagnosed.

Key words: Ischemic stroke – thrombolysis – tissue plasminogen activator (t-PA) – anctrod – heparin – antiplatelet agents – percutaneous transluminal angioplasty.

**Lubomír LIPOVSKÝ, Lubomír LISÝ, Ivan GOGOLÁK Ivan, František CIBULCÍK**  
**TREATMENT OF STATUS EPILEPTICUS**

**Summary**

Epileptic seizure and the onset of acute cerebral function impairment create conditions for status epilepticus. The treatment is aimed especially at prevention of irreversible brain damage by progressing status epilepticus. The risk of damage increases considerably after 1 – 2 hours of the status duration. The course in time horizon and manifestations in clinical picture as well as monitored functions enable to decide about the therapy in single stages of the status.

Key words. status epilepticus – epilepsy- generalized convulsions – epileptic seizures – benzodiazepines – phenytoin – lorazepam – phenobarbital

**Peter VALKOVIC, Ján BENETIN**

**VASCULAR PARKINSONISM**

**SUMMARY:**

Cerebrovascular disease causes 3 – 6 % of all of cases of parkinsonism. Diagnosis of vascular parkinsonism (VP) is frequent, but opinions on this clinical entity are not unified. The heterogeneous nature of the definitions, symptomatology, clinical course and neuroimaging observations urge the development of diagnostic criteria. The majority of the vascular parkinsonism cases originates from subcortical white matter lesions and basal ganglia lacunar infarcts based on brain atherosclerosis. A typical symptomatology is characterized by predominantly lower body disturbances with gait impairment and postural instability, often without resting tremor, without cog-wheel rigidity, and without dopaminergic drugs responsiveness. The most important problem is to distinguish idiopathic Parkinson's disease. Treatment of the vascular parkinsonism is focused on its etiology. This review presents a current view on the history, epidemiology, etiology, pathophysiology, symptomatology and differential diagnosis of the VP, and also indicates the treatment alternatives.

Key words: Vascular parkinsonism – Parkinson's disease.

**Peter ŠPALEK**

## **NEUROLOGY OF PHYSIOLOGICAL AGEING**

### **SUMMARY:**

Many older individuals develop symptoms associated with their physiological ageing, while current neurological disease is absent. It is necessary to know and recognize these symptoms as well as differentiate them from those manifesting neurological disease. Presbyopia in old age is caused by multiple preretinal and retinal factors. The vision is deteriorated by limited upward vertical eye movements. Presbycusis is manifested mainly by progressive increase of acoustic threshold. After the age of 70 a gradual decrease of volume and muscle strength as well as decrease in rapidity and coordination of movements develop as a physiological manifestation of ageing. Their cause is multifactorial in which the key role is played by neurogenic component – chronic partial denervation. The sensitivity factors in old age involve the changes of deep sensitivity, drop in vibration sensitivity leading to affected posture and gait. In concurrent reduction of muscle strength gait in healthy old subjects usually resembles that of parkinsonism – shuffling and terse, reduced hand coordination, anteflexed body posture. With the increasing age postural tremor develops which is usually referred to as senile tremor. Proper interpretation of neurological symptoms in old age is of paramount importance. A neurologist must differentiate between the symptoms of facultative and obligatory norm of physiological ageing and that of pathological neurological diseases.

Key words: physiology of ageing – age associated neurological findings –differentiation of norm of age changes from pathological symptoms of neurological disease

### **ESSENTIAL MEDICINES**

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**Jozef PACÁK, Viliam FRIDRICH, Stanislav MIZERA, Ján MALÍK, Igor RIECANSKÝ**

### **OUR EXPERIENCES WITH INTERVENTIONAL MANAGEMENT OF BIFURCATIONAL LESIONS**

#### **SUMMARY:**

Background: Percutaneous coronary interventions (PCI) of the bifurcated lesions represent a technical challenge. Technical progress in development of the angioplasty devices, experience from IVUS and clinical studies, have improved the short and long term results. We present our short term results and complications in the PCI treatment of this type of coronary lesion.

Patients and methods: From January 2002 to February 2003 we performed 770 PCI. Dilatations of the bifurcational lesions represent only 5.2 % (40 lesion, 40 patients). Nine patients (22.5 %) had acute coronary syndromes. Stent was implanted in 35 lesions, predominantly in main vessel (87.5 %). The most frequent type of treatment was so called B type: stenting of the main branch and kissing dilatation of side branch through the stent. The predominant anatomical location was bifurcation of left anterior descending artery (25 patients, 62.5 %).

Results: We were successful in dilatation of the main branch in all patients. In two cases implantation of the stent lead to occlusion of the side branch with development of non-transmural myocardial infarction ( 5 %). We reached short-term success in treatment of bifurcational lesions in 38 patients (95 %). In 2 patients we found early restenosis (5 %).

Conclusion: PCI of the bifurcational lesions is technically difficult with a higher costs of the procedure, technically possible with a low frequency of adverse events and a high short-term angiographic and clinical success rate.

Key words: Percutaneous coronary interventions – stent – bifurcational lesions – bifurcational stenosis – kissing stent.

**Ján ZELENAY, Viliam FRIDRICH, Igor RIECANSKÝ**

**PERCUTANEOUS TRANSLUMINAL PULMONARY VALVULOPLASTY**

**SUMMARY:**

Background: Isolated valvular pulmonary stenosis is a congenital heart disease appearing also in adulthood. This disease may be currently successfully treated by nonsurgical interventional mode.

Patients and methods: A retrospective study embraced 18 patients with the mean age of 32.5 years (median 33 y.), 11 females (61.1 %) and 7 males (38.9 %) in whom anatomical-morphological, hemodynamical and functional success of percutaneous transluminal pulmonary valvuloplasty (PTPV) was evaluated. Constricted pulmonary valve with the peak systolic gradient of the right ventricular arteria pulmonalis above 50 mmHg with the intraventricular pressure index above 0.5 and the pulmonary valve area index less than 0.79 cm<sup>2</sup>/m<sup>2</sup>, was evaluated as significant.

Results: Before percutaneous transluminal pulmonary valvuloplasty the average peak systolic gradient was  $96.5 \pm 35.6$  mmHg. After PTPV a drop from  $39.8 \pm 15.4$  mmHg ( $p < 0.001$ ) was observed. The average intraventricular pressure index was  $1.06 \pm 0.2$  before the intervention and after the intervention it represented  $0.47 \pm 0.1$  ( $p < 0.0001$ ). The average pulmonary valve area index prior to percutaneous transluminal pulmonary valvuloplasty showed  $0.46 \pm 0.1$  cm<sup>2</sup>/m<sup>2</sup>. After PTPV an increase to  $0.80 \pm 0.1$  ( $p < 0.001$ ) was recorded. In a longterm follow-up the treatment is beneficial to 83.3 % of patients (average functional NYHA 2.0).

Conclusion: Due to therapeutical results, lower costs and less demanding method, percutaneous transluminal pulmonary valvuloplasty is a method of first and definitive choice in the treatment of isolated valvular pulmonary stenosis.

**K e y w o r d s :** isolated valvular pulmonary stenosis – percutaneous transluminal pulmonary valvuloplasty.



**Juraj MADARIC, Augustín MISTRÍK, Martin VRŠANSKÝ, Jozef PACÁK, Ivan VULEV, Igor RIECANSKÝ**

**ASSESSMENT OF THE INTERNAL MAMMARY ARTERY BY-PASS PATENCY BY COLOUR DUPLEX ULTRASOUND – CURRENT USE IN CLINICAL PRACTICE**

**SUMMARY:**

**Background:** The aim of the study is to describe the flow characteristics of the mammaro-coronary by-pass obtained by colour duplex ultrasound and to assess the use of this non-invasive diagnostic tool in management of patients after coronary artery by-pass grafting.

**Materials and Methods:** By colour duplex ultrasound technique we examined 451 patients after myocardial revascularization with the internal mammary artery by-pass using the Hewlett Packard 2500, 5500 ultrasound units. Using the 7.5 MHz linear transducer we detected LIMA (left internal mammary artery) from the left supraclavicular approach. We assessed the absolute flow velocities and their ratios – the peak systolic velocity (PSV – cm/s), peak diastolic velocity (PDV – cm/s), end-diastolic velocity (EDV – cm/s) and we calculated the peak systolic/peak diastolic velocity ratio (SD) and resistance index RI (PSV-EDV/PSV). In the subgroup of patients the LIMA by-pass was examined also by angiography.

**Results:** The adequate visualisation of the LIMA by-pass was obtained in 426 patients (94.46 %). The typical of the patent and functional by-pass is the biphasic low resistance flow with dominant diastolic phase, which represents the filing of the coronary circulation. In dysfunctional by-passes (20 findings documented also by angiography) we find out the significant reduction of diastolic flow with decrease of the PDV and increase of the SD and RI ( $p < 0,001$ ). By the case reports we illustrate the current use of this method in clinical practice.

**Conclusion:** The colour duplex ultrasound is acceptable non-invasive method in diagnosis of patency and functional status of mammaro-coronary by-pass. Its main domain is in the prediction of LIMA grafts dysfunction, it means in early diagnostics and mainly in the early indication of invasive angiography examination.

**Keywords:** duplex ultrasound – myocardial revascularization – left internal mammary artery – internal mammary artery graft.

**Ján MALÍK, Branislav LÍŠKA, Stanislav MIZERA, Jozef PACÁK, Vasil HRICÁK,  
Igor RIECANSKÝ, Viliam FRIDRICH**

**PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AT THE DEPARTMENT OF INTERVENTION CARDIOLOGY IN SLOVAK INSTITUTE OF CARDIOVASCULAR DISEASES IN 2002.**

**SUMMARY:**

**Background:** Reperfusion treatment of patients with acute myocardial infarction is a generally accepted therapeutical procedure at present. The paper submits our first experiences with percutaneous coronary intervention as a reperfusion treatment mode of acute myocardial infarction used at our workplace.

**Patients:** The group followed up consisted of 110 patients with acute myocardial infarction (males: 78, age  $56 \pm 9.7$  years and females: 32, age  $63 \pm 9.7$  years).

**Methods:** Patients with diagnosed acute myocardial infarction were examined by selective coronary angiography, the anatomical properties of coronary bed served to decide in favour of either percutaneous coronary intervention or aortocoronary bypass or a conservative therapeutical procedure was indicated. Demographic characteristics, time delay and incidence of complications in a group of followed up patients were evaluated.

**Results:** Percutaneous coronary intervention was conducted in 106 patients with acute myocardial infarction (direct PTCA: 78 patients, success: 87.2 %, saving PTCA: 28 patients, success 96.3 %), no intervention was made in 4 patients. Global „time-delay” in a followed up group was 267 minutes, „door to balloon” time was 136 min. The complication incidence in patients with intervention was 9.4 %.

**Conclusion:** Percutaneous coronary intervention is a highly effective and safe reperfusion method, that should shortly become a method of choice in a majority of patients with acute myocardial infarction.

**Key words:** acute myocardial infarction – percutaneous coronary intervention.

**Dana ŠKULTÉTYOVÁ, Slavomíra FILIPOVÁ, Igor RIECANSKÝ, Ján ŠKULTÉTY,  
Eva ZÁVADOVÁ**

**EVALUATION OF ENDOTHELIAL DYSFUNCTION AND TRANSFORMING  
GROWTH FACTOR-B IN PATIENTS WITH ISCHEMIC HEART DISEASES**

**SUMMARY:**

Background: The aim of the study was to investigate the endo-thelial dysfunction and transforming growth factor-b (TGF-b) in patients with coronary artery disease (CAD).

Material and methods: Arteria brachialis was examined using ultrasonography in 35 patients with CAD, endothelium dependent and independent vasodilatation response was evaluated. TGF-b was examined by ELISA method (Immunotech, Biomedica).

Results: Significant endothelial dysfunction was found in patients with CAD. Diminished flow-mediated vasodilatation (FMD) was observed at 60th and 90th s reactive hyperemia. FMD was preserved in the group of healthy volunteers (group with CAD: FMD at 60th and 90th s: -2,9%; control group: FMD at 60th s: 8,8%, at 90th s: 7,7%). In both groups unaltered endo-thelium-independent vasodilatation response was found. The flow increased at 90th s in patients with CAD on 33,3%, in control group on 55,7 %. TGF-b was significant elevated in patients with CAD (group with CAD: TGF-b 28+/-1,6 ng/ml, control group: TGF-b 18,61+/-2,53 ng/ml,  $p < 0,01$ ).

Conclusions: Significant endothelial dysfunction was observed in patients with CAD. Preserved endothelium independent vasodilatation was found. TGF-b was significant increased in comparison to the group of healthy volunteers.

Key words: endothelial dysfunction – ultrasonography – transforming growth factor-b – coronary heart disease.)

**Iveta ŠIMKOVÁ, Igor RIECANSKÝ, Tatiana SLEZÁKOVÁ**  
**INFECTION, INFLAMMATION AND ATHEROSCLEROSIS**

**SUMMARY:**

Traditional risk factors do not explain the presence of coronary atherosclerosis in a large proportion of patients. Studies done over past several years have shown an association

between coronary atherosclerosis and markers of inflammation, and in addition an association between coronary atherosclerosis and infection by very common organisms such as Chlamydia pneumoniae, cytomegalovirus. Presumably in certain genetically susceptible people these infectious organisms may lead to a localized infection and a chronic inflammatory reaction of arterial wall. For the present there doesn't exist generally acceptable evidence for direct pathogenetic effect of infection in the atherogenic process.

Key words: infection, atherosclerosis – Chlamydia trachomatis – cytomegalovirus – cytokins

**Peter MARGITFALVI**

**PRIMARY AND SECONDARY PREVENTION OF SUDDEN CARDIAC DEATH BY MEANS OF IMPLANTABLE CARDIOVERTER DEFIBRILATOR**

**SUMMARY:**

Sudden cardiac death has become a major health care problem. Implantable cardioverter defibrillator has made the most important contribution to its management. Article reviews the current role of implantable cardioverter-defibrillator in primary and secondary prophylaxis of sudden cardiac death. Several randomised, controlled trials have shown the superiority of ICD-s in the secondary prophylaxis as compared to the best antiarrhythmic drugs. In the field of primary prophylaxis several already concluded and running studies will help to define the role of ICD-s and expand the indication for this lifesaving therapy.

Key words: sudden cardiac death – implantable cardioverter-defibrillator – primary and secondary prophylaxis.

## **• C O N T E N T S    L E K Á R S K Y   O B Z O R   1 0 / 2 0 0 3   S U M M A R Y**

**Štefan KRAJCÍK, Tatiana HANISKOVÁ, Katarína SLOBODOVÁ**

### **GERIATRIC MEDICINE AT THE BEGINNING OF 21ST CENTURY**

#### **SUMMARY:**

In the course of the first half of 21st century the number of seniors will be doubled. The number of seniors will be largest in the highest age groups („double ageing of population“) while the number of economically active population will be decreasing. High level health care has reduced the incidence of disability in the USA, yet the incidence of many diseases is still on increase. The prevention of fractures due to accidents is less successful. Similar situation is observed in the efforts to diminish the incidence of diabetes mellitus, obesity and inactivity. On the other hand, the possibilities of prevention of demetia have appeared. In geriatric prevention frailty is of great importance as it may induce or deteriorate disability. Its main causes involve nutrition disorders, inactivity, multimorbidity, geriatric syndromes. These problems are also seen in old people in Slovakia. The necessity of geriatrics as a specialty of internal medicine is undisputable and its development should be supported even more than it used to be in the past.

Key words: geriatrics – disability – prevention.

**Ian HASTIE**

### **TRAINING IN GERIATRIC MEDICINE ACROSS EUROPE**

#### **SUMMARY:**

Although medicine dealt with the problem of ageing since the Ancient times, geriatrics as a clinical specialty developed only in the 20th century as a result of a growing number of old people. Geriatrics is currently recognized as specialty or subspecialty in 11 out of 15 states of the EU. There exist great differences in postgraduate training among individual states. Consequently, the UEMS Geriatric Section published its guidelines “Training in Geriatric Medicine in the EU”. Another goal of the section is to gain recognition of geriatrics as

medical specialty in all the member states.

Key words: postgraduate training – geriatrics.

**Pavel WEBER, Vlasta POLCAROVÁ, Hana MELUZÍNOVÁ, Hana KUBEŠOVÁ**  
**IS OBESITY THE PROBLEM OF OLDER DIABETICS?**

**SUMMARY:**

Obesity shortens the life and for this reason the incidence of obesity in old people decreases. However, obesity is a significant risk factor of the onset of diabetes in old age, too.

Key words: old age – obesity – diabetes mellitus.

**Ladislav HEGYI**

**DRAWBACKS OF DIAGNOSTICS IN GERIATRICS**

**SUMMARY:**

Geriatric diagnostics ensues from the peculiarities of the diseases in seniors having its characteristic signs. It is a part of perignostic evaluation that considers home setting of a senior, his functional profile, independence or dependence. This evaluation is a result of the examination comprising exact case history, thorough physical examination complemented by laboratory and other indicated examinations. Social environment of an old patient, his mental state, functional capacity and self-sufficiency have also to be considered. Geriatric assessment uses a wide scale of various tests to evaluate functional disorders in somatic, mental and social area. One of the basic problems in the diagnostics is to differentiate physiological ageing process from pathological disorder. The diagnostics of every disease in seniors may be complicated by the peculiarities of the diseases in old age, such as polymorbidity, changed symptomatology and course of diseases, susceptibility to complications, maladjustment syndrome and social dimension of diseases in old age.

The key principles of diagnostic process in geriatrics are the following: geriatrics does not use age-contraindicated examinations. The contraindication may be only of biological character, if patient's specific condition makes it impossible to perform certain examinations. Old

patient may also tolerate more complicated examinations that should be preceded by careful preparation and conducted at a slower rate than in young patients. Every patient, particularly an old one, may be afraid of any unknown examinations. Therefore, it is important to prepare an old patient for the examination, explain him the details of a particular examination and provide him with a person that will accompany him during the examination. The evaluation of findings should be based on the capability of differentiating pathological values from those of physiological ageing. The diagnostic process in geriatrics is based on a complex bio-psycho-social aspect. The interpretation of the results of examinations mainly of biochemical parameters requires a certain clinical experience in treating geriatric patients. Biochemical examination in ambulatory practice may be masked by patient's noncooperation in a preparatory phase. Sophisticated examinations must be indicated only if purposeful and cost-effective. Due to ethical reasons useless examinations should not be indicated in the terminal stage of the disease. In geriatric diagnostics the patient's rights defined by the law must be observed. Diagnostics should be meaningful and always resulting in an intervention (therapy).

Key words: old patient – diagnostics – recommendations.

**Ladislav HEGYI, Markéta VLADÁROVÁ**

## **PAUPERIZATION OF SENIORS AND THEIR HEALTH**

### **SUMMARY:**

Numerous epidemiological studies conducted in the recent years have showed all health indicators have a sensitive response to the two phenomena of social sphere: social status-related differences in economic standard of inhabitants and differences in cultural and psychosocial characteristics of people. The significance of differences in the economic standard of inhabitants was confirmed by an American study demonstrating that the mortality rate in a group with the lowest income was twice as high as in a group of wealthiest people (81 and 41 per 10 000). The fact the greater the differences in incomes and standard of living, the more profound the differences in health status of the population is confirmed by Gini's quotient that reflects the difference in the level of income among family households in a given country.

The Statistical Bureau recent years data cited in the paper, reveal a rather rapid pauperization

of pensioners manifested in the decrease of actual incomes for a family member, higher living costs than incomes, reduced working activity of pensioners due to unfavourable development on the labour market, diminished expenses for leisure activities and elevated Gini's quotient from 18 to 25 points. Within the years 2003 and 2004 further deterioration of social situation of pensioners may be expected. At the same time health status will worsen as well, leading thus to steady morbidity, increased mortality and deteriorated quality of life. So far health care has no sufficient means to cope with this trend.

Key words: geriatrics – social factors – poverty – mortality of seniors.

**Zdenek ZADÁK**

### **VITAMINS AND TRACE ELEMENTS – SUITABLE AND UNSUITABLE INDICATION IN OLD AGE**

#### **SUMMARY:**

The author presents an overview of indications of micronutrients in old age.

Key words: old age – nutrition – vitamins – trace elements.

**Hana MELUZÍNOVÁ, Pavel WEBER, Hana KUBEŠOVÁ**

### **MACROCYTIC ANEMIA IN OLD AGE – DIAGNOSTIC PROBLEM**

#### **SUMMARY:**

In their paper the authors present a complex review of the problems of macrocytic anemia in old people. The introduction focuses on morphology and metabolism of erythrocytes in general and with special regard to the problems of etiopathogenesis of macrocytic anemias. The authors also highlight a higher incidence of pernicious anemia in old people, specificity of clinical picture, laboratory findings, course and possible complications in old age. In the conclusion they stress the necessity of appropriate diagnostics of this type of anemia, its possible problems in differential diagnostics and therapeutic procedures, prospective effectivity and success in early and properly initiated treatment.

Key words: macrocytic anemia – hemoglobin – old people – diagnostics of anemias



**Jana BLAHOVÁ, Kvetoslava KRÁLIKOVÁ, Vladimír KRCMÉRY Sr., Marta BABÁLOVÁ, Radko MENKYNA, Libuša GLOSOVÁ, Helena KNOTKOVÁ, Anna LIŠKOVÁ, Mária MOLOKÁCOVÁ, Alena VACULÍKOVÁ**  
**MONITORING OF ANTIBIOTIC RESISTANCE IN BACTERIAL ISOLATES FROM BACTERAEEMIA IN SLOVAKIA**

**SUMMARY**

**Background:** The treatment of bacteraemia is considerably difficult mainly in patients with the incidence of resistance and multiresistance of causal microbes to antibiotics. Consistent monitoring of resistance and surveillance of the incidence of multiresistance to antibiotics in these strains is the groundwork for subsequent measures aimed at solving the above problems.

**Methods:** Microbiological diagnostics was based on standardized methods. Sensitivity to antibiotics in isolated microbes was made by standard disc method according to National Committee for Clinical Laboratory Standards (NCCLS). In each patient monitoring comprised the first isolated microbe, only.

**Results:** 421 strains from bacteraemia in five centres of university and regional hospitals revealed mainly grampositive bacteria greatly predominated by staphylococci. In contrast to the foreign findings, in followed up workplaces pneumococci as causal organisms of bacteraemia were rarely observed (0.7 %). Gramnegative bacteria strains frequently causing bacteraemias (54 %) showed a significant multiresistance. They were resistant particularly to cephalosporins, fluoroquinolones and it is disturbing they showed resistance also to meropenem in the strains of *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. A significant contribution of klebsiella strains producing b-lactamase with extended effect spectrum (ESBL) from bacteraemia and their transmittable character to other types of bacteria was found indicating thus a risk for further efficacy of penicillins and cephalosporins in these strains.

**Conclusion:** Rational use of antibiotics, mainly fluoroquinolones and meropenem, unconditional necessity of rapid and accurate identification of causal bacteria and their sensitivity to antibiotics along with the systematic monitoring of the incidence of resistance and multiresistance to antibiotics in bacteraemia inducing bacteria, are a prerequisite for a reliable efficiency of the antibiotics monitored.

**Key words:** surveillance of resistance to antibiotics – resistance to antibiotics - bacteraemia.

## **ESSENTIAL MEDICINES**

## • C O N T E N T S    **Lekársky obzor 11/2003 SUMMARY**

**Olga CERVEŠOVÁ, Andrea CERNIANSKA, Daniela MIKLOVICOVÁ, Mária CHOCHOLOVÁ, Marta VIVODOVÁ, Pavol BÜCHLER, Radovan VAŠATKA, Vladimír POLÁK, Oto WASSERMAN**

### **DIAGNOSTIC PROCEDURES IN OBSTRUCTIVE NEUROPATHIES IN CHILDREN**

#### **SUMMARY:**

Background: Postnatal USG screening of obstructive uropathies was introduced in Slovakia towards the end of the eighties. The optimal examination procedures defining proper time for the examination and pertinent urological management are still being sought for.

Patients and methods. From 1990 till the end of 2002, 997 newborns and infants up to the first year of their life suspected from obstructive uropathy, were hospitalized. The children showed III. and IV. grade of USG dilatation according to Hoffmann. The children with a lower dilatation grade were followed up on ambulatory basis. Bacterial complications after cystography, cystoscopy and surgical removal were followed up.

The dilatation grade was followed up in children by means of USG, in suspected pyeloureteral junction dynamic scintigraphy with furosemide was conducted. Urine was examined chemically and sediment in monthly intervals.

Results: In I. dilatation grade congenital malformation was found in only 1 %. In II. grade in 8 %, in III. grade in 66 % and in IV. grade in 100 % of patients. Obstructed pyeloureteral junction appeared most frequently (29.3 %). The followed up bacterial complications were more common in patients up to the third month of their life.

Conclusion: The basis of diagnostic procedures for I. and II. dilatation grade rests upon USG examination. Dynamic scintigraphy is suitable in II. dilatation grade and contrast X-ray examination is indicated only after the obstruction has been proved prior to surgical intervention. IV. dilatation grade is treated at a specialized workplace as it requires urgent urological care.

Key words: algorithm – obstructive uropathy – ultrasonography – uropathy screening.

**Danica STANEKOVÁ, Monika HÁBEKOVÁ, Silvia MADOLOVÁ, Miloš MOKRÁŠ,  
Vlastimil MAYER**

**INFLUENCE OF ANTIRETROVIRAL THERAPY OF HIV – INFECTED PATIENTS  
TO VALUES OF LABORATORY PROGNOSTIC MARKERS**

**SUMMARY:**

**Background:** The aim of the study was to compare the influence of the antiretroviral therapy on laboratory prognostic markers in antiretroviral naive patients, pretreated patients and a patient with early therapy indicated in primary stage of HIV-1 infection.

**Patients and methods:** We monitored 11 HIV-positive patients within several months over 20-28 months: 4 untreated patients, 2 naive patients treated with two drugs combination therapy consisting of 2 NIRT, 4 pretreated patients with three drugs combination therapy consisting of 2 NIRT + 1 NNIRT and 1 patient with early indicated therapy of 2 NIRT in primary stage of HIV-1 infection. The numbers of viral copies were determined by Amplicor HIV-1 Monitor™ Test, version 1.5 (Roche Diagnostics Systems). CD4 cell counts we evaluated by flow cytometry.

**Results:** Within 20 months of investigation gradual increase of viral load and decreasing CD4 cell counts were observed in the group of untreated patients. Two patients from this group were considered to initiate antiretroviral therapy due to these changes. Gradual decrease of viral load and increase of CD4 cell counts were registered in all groups of patients treated with antiretroviral therapy. Maximal rate of regeneration of CD4 cells was observed in 1 patient with early indicated therapy of 2 NIRT in primary stage of HIV-1 infection and in the group of patients treated with initial therapy. CD4 cell counts in the group of pretreated patients remained low and without significant changes. Consideration for low levels of CD4 cells is that the disease was more advanced in the group of pretreated patients, which may have blunted the CD4 response. Decrease of viral load in all 3 groups of treated patients was registered immediately after initiating of antiretroviral therapy. Repeated increase of viral load was sustained in the groups of naive and pretreated patients after 1-2 years of investigation. Either in one group of treated patients long-term decrease of viral load below the assay limit of detection (400 copies/ml) was not registered.

**Conclusion:** The changes of surrogate markers such as viral load and CD4 cell counts reflect a favourable effect of antiretroviral therapy on infection progression in HIV-positive patients. Based on our findings, ART suppress virus replication and contribute to regeneration of the

immune system. These findings also assessed the need of resistance testing during antiretroviral therapy as well as before initiating of therapy.

Key words: HIV – virus load – CD4 count – ART.

**Ladislav VIRÁG, Pavol JARCUŠKA, Ivan SCHRÉTER**

## **HIV INFECTION PATHOGENESIS**

### **SUMMARY:**

HIV belongs to the family of lentiviruses (slow viruses of the group of retroviruses). According to available detailed sequence data analysis the origin of HIV is found in chimpanzees. Based on the comparison of sequence analysis - HIV-1 and SIVcpz /simian immune deficiency virus HIV is supposed to be transmitted to humans in the years 1920-1930.

From the aspect of pathogenesis the significance of co-receptors CCR-5 and CXCR-4 is pinpointed, particularly in HIV penetrating the cell in a form of endocytosis or by the fusion of the viral envelope with the cellular surface.

The role of proinflammatory cytokines (IL-1, TNF $\alpha$ , IL-6 consists in their activation of the immune system and their support of HIV proliferation in T-lymphocytes and macrophages. The infected organism forms and destroys daily up to 10 virus particles. Half-life of HIV-1 in the plasma is only 1- 2 days, half-life of infectious virions only several minutes.

Half-life of infected productive lymphocytes is approximately 1.2 days. In HIV infection the number of the so called naive (CD45RA) CD4+ lymphocytes is getting lower, while in terminal stages CD4+ lymphocytes are represented practically by memory cells, only.

Key words : HIV- pathogenesis.

**Anna KELEOVÁ, Ema PAULOVICOVÁ**

## **LABORATORY DIAGNOSTICS OF ALLERGY**

### **SUMMARY:**

The paper presents a review of laboratory diagnostic modalities of allergic diseases and

indications to examine specific IgE. The examination of the first type of IgE mediated sensitivity occurring most frequently in practice describe the methods of specific IgE assay including their evaluation and results interpretation. The scale of in vitro methods involves also the examination of soluble cell mediators of allergic inflammation and new approaches to the diagnostics of allergy.

**K e y w o r d s :** diagnostics of allergy – in vitro methods – specific IgE- mediators.

**Katarína GAZDÍKOVÁ, František GAZDÍK**

## **HYPOKALIEMIC RENAL TUBULAR SYNDROMES WITH NORMOTENSION**

### **SUMMARY:**

Kidneys play a significant role in the regulation of electrolyte homeostasis that is controlled by hormonal regulation. In hereditary tubular diseases functional disorders develop. If occurring in incomplete form they often remain undiagnosed and accordingly inadequately treated. These diseases involve hypokaliemic renal tubular syndromes accompanied by normotension or hypotension - Bartter and Gitelman syndrome. These diseases are referred to as autosomal recessive diseases characterized by a combination of aqueous, electrolyte and hormonal abnormalities. Bartter syndrome is accompanied by calcium, sodium and chloride loss by urine, hypokaliemia, hyperaldosteronism, hyperreninemia and normal or decreased blood pressure value. Many authors describe Gitelman syndrome as hypocalciuric and hypomagnesiemic variant of Bartter syndrome, even though it is currently classified as independent syndrome. The diagnostics of both syndromes is based on their laboratory and clinical picture. The treatment aims at the correction of aqueous, electrolyte and hormonal abnormalities.

**Key words:** renal tubular syndromes - hypokaliemia - Bartter syndrome - Gitelman syndrome - metabolic alkalosis - hyperreninemia - hyperprostaglandinism.

**Tomáš HORVÁTH, Štefan ŠTEMPEL, Boris MAJESKÝ, Branislav DELEJ, Patrik JAVORCÍK, Ján BEREC**

**GIANT CELL TUMOR OF BONE – DISTAL RADIUS REPLACEMENT BY PROXIMAL FIBULA**

**SUMMARY:**

The patient with histologically confirmed giant-cell tumor of bone of left distal radius is presented. Because of suspect malignant tumor we decided for radical operating treatment. Affected part of radius was removed and replaced by proximal fibula autograft. An evaluation of final status is made 3 years after operating treatment.

Key words: giant cell tumor of bone - resection – autograft.

**Ludmila PAVLÍKOVÁ, Alica KAPELLEROVÁ**

**HISTORY OF TRAINING OF PEDIATRICIANS AT COMENIUS UNIVERSITY MEDICAL FACULTY IN BRATISLAVA**

**SUMMARY:**

50 years ago (in the academic year 1952/1953 when pediatrics as a study line was established, Medical Faculty of Comenius University in Bratislava started providing specialized training of pediatricians. The education and training were accomplished by the II. Pediatric Clinic. Within 38 years (academic years 1952/1953 up to 1989/1990 almost 2500 students completed the study of pediatrics. They practised not only as pediatricians but many of them became also head physicians or directors of significant health establishments. Many of them work as well-known university teachers at medical faculties both in Slovakia and abroad.

Key words: pediatric clinic - study line of pediatrics.

## • C O N T E N T S    L E K Á R S K Y   O B Z O R   1 2 / 2 0 0 3   S U M M A R Y

**Michal HORÁK, Augustín BÁRDOŠ**

### **INVASIVE BLADDER TUMOURS: ANALYSIS OF CLINICAL MATERIAL**

#### **SUMMARY**

**Background:** Curative treatment of invasive bladder cancer is performed by radical cystectomy and radiotherapy with or without chemotherapy. For local, medical and psychological reasons were these procedures in some cases contraindicated. The aim of this study is to determine patients' characteristics, methods of treatment, proportion of patients suitable for curative treatment and reasons for palliative treatment methods.

**Patients:** In 1997 – 2001 altogether 111 patients with invasive bladder cancer were treated. At the time of diagnosis the invasion of muscle layer was present in 90 (81.1 %) patients, in the rest of the patients invasive tumour progressed from superficial bladder tumours.

**Methods:** In the retrospective study patients' characteristics, methods of treatment with curative intention and reasons for indicating palliative methods were assessed.

**Results:** The average age of patients was 64,6 years. Co-morbidities were present in 75 (67.6 %) patients, these were significant in 36 cases. Treatment methods: radical cystectomy in 39 (35.1 %) cases and radiotherapy in 24 (21.6 %) cases; 63 (56.8 %) patients were treated with curative intention. 40 (36 %) patients underwent palliative treatment and 8 (7.2 %) patients refused to be treated. After three years since the beginning of treatment 16 (21.6 %) out of 74 patients have survived.

**Conclusion:** 63 (56.8 %) patients underwent treatment with curative intention. For the rest of the patients only palliative methods were suitable.

**Key words:** invasive bladder cancer – management – radiotherapy – cystectomy.



**Miroslav MIKULECKÝ**

## **SEASONALITY OF BIRTHS IN THE WHOLE SLOVAK POPULATION**

### **SUMMARY:**

Background: The distribution of birth frequencies during calendar year displays often differences between separate months. Its character is changing in various countries. The paper describes the situation in Slovakia.

Data set: Complete data from the years 1974-1997 are processed. They include 1 017 270 boys and 970 406 girls born in this time interval.

Methods: All births have been summed up into separate calendar months of an imaginary year, separately for either gender. They were processed - after transformation into relative values, with the yearly total equal one – with the aid of Halberg cosinor regression. The presence of 12- and 6- month periodicity was tested. In this way, the point estimate of the approximating regression function with its 95 % confidence and tolerance was defined.

Results: The monthly numbers of newborns were significantly above the average since February to July, with peak in June, and significantly under the average since September to December, with a marked minimum in October.

Conclusions: Seasonality of births in this country is similar as in other Europe. Its exact knowledge is needed for studies of putative seasonality in births of children with various diseases in future.

**Key words:** Slovakia – population – gender – births – seasonality.

**Jana BLAHOVÁ, Kvetoslava KRÁLIKOVÁ, Vladimír KRČMÉRY, sen., Radko MENKYNA**

## **ENTEROCOCCI AND STAPHYLOCOCCI RESISTANT TO VANKOMYCIN – HAS THE DUSK OF CHEMOTHERAPY SET IN?**

### **SUMMARY:**

The newest results from the monitoring of antibiotic resistance in three bacterial species (pneumococci, enterococci and staphylococci) from 900 hospitals in European Union countries are reported in this article. The occurrence of multiresistant bacteria in patients

hospitalized in ICUs and spreading of antibiotic resistance is pointed as a serious issue in chemotherapy of bacterial infections. The mechanisms of spreading of new resistance genes in methicillin resistant *Staphylococcus aureus* (MRSA), resistant to vancomycin are presented too.

The authors stress the necessity of rationalization in antibiotic use and consumption, monitoring of antibiotic resistance and multiresistance and other measures for good activity of antimicrobial compounds.

**K e y w o r d s :** antibiotic resistance – pneumococci – enterococci – staphylococci.

**Štefan HRKOTÁČ**

## **SOME REMARKS ON 50TH ANNIVERSARY OF FOUNDATION OF HEALTH EDUCATION**

### **I. part – postgraduate education**

#### **SUMMARY:**

In 1953 the Health Commission Educational Centre for postgraduate education of doctors in Trenčín was found. In 1957 the title was transformed into Slovak Institution for Postgraduate Education of Medical Doctors. Its site remained unchanged. The task of the institution was to build up the system of postgraduate training of doctors, pharmacists and non-medical university health professionals. At that time several thousands of health care workers participated in specialized training system for doctors and pharmacists thereby upgrading the quality of health care. In the following years of its activity the institution underwent several structural changes including its titles such as: Medical and Pharmaceutical Postgraduate Institute, Slovak Postgraduate Academy of Medicine, currently Slovak Medical University.

**K e y w o r d s :** postgraduate education – Health Commission Educational Centre – Postgraduate Medical and Pharmaceutical Institute – Slovak Postgraduate Academy of Medicine – Slovak Medical University

## **ESSENTIAL MEDICINES**