We present abstracts of published papers in international journals deposited in PubMed between 2008-01-01 and 2008-12-31 from the scientists affiliated in institutions from the Republic of Macedonia [(Macedonia[Affiliation]) NOT (Prilozi[Jour])]. English summaries are published as they are deposited by PubMed.

A total number of 56 papers were indexed in PubMed during 2008 year [1 paper in 1998, 1 paper in 2001, 1 paper in 2004, 6 papers in 2007, 41 paper in 2008, and 6 papers in 2009 (ahead of print)].

Editorial Board does not take any responsibility either for the content, nor the quality of the abstracts.

**Key words:** Medical publications; Medical research; Republic of Macedonia.

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Accepted: 01-Oct-2009
Online first: 09-Oct-2009
triglycerides, and positively correlated with plasma HDL cholesterol and BMI. CONCLUSION: Although plasma levels for lipid and apoprotein were within the normal range, the increased frequency of LDL phenotype B confirms a greater risk of atherosclerosis development in children with diabetes mellitus. LDL size measurement may potentially help to assess cardiovascular risk and adapt the treatment goals thereafter. PMID:18814430


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BACKGROUND: The evaluation of a genital prolapse has to include the POPQ-pelvic organ position quantification as a descriptive system. OBJECTIVES: Effectiveness of our modification of the POPQ in the diagnosis of supravaginal cervical elongation. METHODS: We evaluated our modification: Bal (midpoint of distance Aa/Va); Vas (most proximal point of anterior vaginal wall); Va (attachment of anterior vaginal wall to cervix); Vp (attachment of posterior vaginal wall to cervix); Vps (most proximal point of posterior vaginal wall); SU (attachment of sacrouterine ligaments to cervix); Bp1 (midpoint of distance Ap/Vp); as well as some level distances: (Vas-Va), (Vp-SU), (Vps-Vp), (Aa-Ba1) in 358 patients, divided into: group A-stage I/II prolapse; group B-stage I/II prolapse and cervical elongation; group C-stage III/IV prolapse; group D-stage III/IV prolapse and cervical elongation; group E-stage 0 prolapse and stress incontinence during Valsalva maneuver (Vm) and Pozzy maneuver (Pm). RESULTS: In cases with a genital prolapse without cervical elongation, with presence of uterosacral liga-
ments/ upper paracolpium deterioration, the points, such as: Ba1, Vas, Va, Vp, Vps, SU, D, Bp1 came down during Pm. In cases with cervical elongation, without upper paracolpium deterioration and strong uterosacral ligaments, points: SU, D, Bp1 were higher, and level distances: (Vas-Va), (Vp-SU), (Vps-Vp), (Aa-Ba1), (Ap-Bp) greater. In cases with stage 0 prolapse and USI, with only urethrovaginal junction deterioration, we found a higher position of Vas, Va, Vp and SU, reflecting the absence of upper paracolpium deteriora-
tion. CONCLUSION: Our modification seems to be effective in the diagnosis of cervical elongation. PMID:18792485


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Glutathione peroxidase 1 (GPX1) is a ubiquitously expressed selenium-dependent enzyme that protects cells against oxidative damage by reducing hydrogen peroxide and a wide range of organic peroxides. Some epidemiological studies have correlated low GPX activity or particular GPX1 polymorphisms with enhanced risk of cancer, although these correlations have not been consistently observed in all populations. Therefore, we conducted the present study to evaluate the possible association of GPX1 Pro198Leu polymorphism and erythrocyte GPX activity with the risk of developing prostate cancer and to clarify whether erythrocyte GPX activity levels were correlated with the GPX1 Pro198Leu genotype in the Macedonian population. The GPX1 Pro198Leu genotype was determined in 82 prostate cancer cases and 123 control individuals. We found an overall protective effect of the variant Leu allele of the GPX1 polymorphism on the prostate cancer risk. Heterozygous carriers of the variant Leu allele had a significantly lower risk of prostate cancer compared with homozygous wild-type individuals (OR, 0.38; 95% CI, 0.20-0.75; P = 0.004). Erythrocyte GPX activity was analyzed in 73 cases and 91 controls. The erythrocyte GPX activity in the cancer group was lower than in the healthy controls. Additionally, we compared the erythrocyte GPX activity in the control group of 90 subjects and found no significant differences by genotype. These findings suggest that individual susceptibility of prostate cancer may be modulated by GPX1 polymorphism and that the combination of genetic factors involved in oxidative response with environmental carcinogens may play an important role in prostate carcinogenesis. PMID: 18563616

Barandovski L, Cekova M, Frontasyeva MV, Pavlov SS, Stafilov T, Steines E, Urumov V. Atmospheric deposition of trace element pollutants in
For the first time the atmospheric deposition of trace metals was studied over the entire territory of the Republic of Macedonia. Samples of the terrestrial mosses *Hypnum cupressiforme*, *Camptothecium lutescens*, and *Homalothecium sericeum* were collected in September-October 2002 at 73 sites evenly distributed over the country, and a total of 43 elements were determined by instrumental neutron activation analysis and atomic absorption spectrometry. Principal component factor analysis was used to identify the most polluted areas and characterize different pollution sources. The most important sources of trace metal deposition are ferrous and non-ferrous smelters, oil refineries, fertilizer production plants, and central heating stations. Four areas appear to be particularly exposed to metal pollution: Veles, Skopje, Tetovo, and Kavadarcı-Negotino, whereas the predominantly agricultural regions in the south, southwest, and southeast show levels closer to European median values for most elements of mainly pollution origin. 

We analyze the Kuramoto model of phase oscillators with natural frequencies distributed according to a unimodal asymmetric function $g(\omega)$. It is obtained that besides a second-, also a first-order phase transition can appear if the distribution of natural frequencies possesses a sufficiently large flat section. It is derived analytically that for the first-order transitions the characteristic exponents describing the order parameter and synchronizing frequency near the critical point are equal to those for the order parameter in the corresponding symmetric case. Stability analysis of the incoherent phase shows that the synchronizing frequency at the onset of synchronization equals the perturbation rotation velocity at the border of stability. The analytic and numerical results are in agreement with numerical simulations. 

The study was aimed to define the predictors for peripheral and carotid revascularization in type 2 diabetic population. In all, 279 patients with type 2 diabetes and peripheral arterial disease were enrolled in a cohort longitudinal study. Study population was followed up for 24 months for the need and performance of peripheral or carotid revascularization. Logistic regression analysis was conducted to identify variables predictive of revascularization, when lipid plasma levels, glycemia, arterial hypertension, blood pressures, ankle-brachial index, intima-media thickness, body mass index, waist circumference, and hip distances were put in a model. Total cholesterol and maximal value of carotid intima-media thickness were presented as factors that independently influenced the performed peripheral revascularization. Waist circumference is defined as independent factor associated with carotid endarterectomy. Measurement of carotid intima-media thickness, waist circumference, and
plasma lipid levels in type 2 diabetes with manifested peripheral and carotid arterial disease should be recommended in a manner of proper risk stratification of this population. PMID:18508848


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In this article cases of two sisters with premature atherosclerosis have been described. The first one aged 31 with diagnosis of growth hormone deficiency (GHD) and diabetes mellitus presented with calf intermittent claudication as a result of tibial arteries occlusions. The second one aged 34 with impaired fasting glycemia and without any sign of GHD presented with sudden calf pain as a result of tibial posterior arterial acute occlusion. These cases support the hypothesis that in GH deficiency patients is a higher incidence of diabetes mellitus and early atherosclerosis and they are more vulnerable to vascular thrombotic events. PMID:18700442


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BACKGROUND: We aim to study the circulatory parameters in the retrobulbar central retinal artery and vein in diabetic patients with and without medically treated systemic hypertension. METHODS: The study included 108 patients with diabetes that were allocated in four different groups according to the presence of diabetic retinopathy (DR) and hypertension: group 1-patients without DR and without hypertension (n = 23), group 2-patients without DR and with hypertension (n = 21), group 3-patients with nonproliferative DR and without hypertension (n = 36), group 4-patients with nonproliferative DR and with hypertension (n = 28). The circulatory parameters that were evaluated were: peak systolic blood velocity (PSV), end-diastolic blood velocity (EDV), maximum venous velocity (Vmax), minimum venous velocity (Vmin) and the Pourcelot index which were measured using color Doppler imaging. Non-parametric tests were used to test inter-group differences. Spearman's coefficient of correlation was tested between ocular perfusion pressure and the circulatory parameters in each of the patient groups. Contingency table was performed to test the relation of diabetic retinopathy and hypertension to the PSV in the central retinal artery. RESULTS: The PSV and EDV in the central retinal artery was significantly higher in group 1 (p = 0.02, p = 0.04) and group 2 (p = 0.02, p = 0.02) than in group 3. The Pourcelot index in the central retinal vein was significantly lower in group 1 than in group 4 (p = 0.02), and in group 2 than in groups 3 and 4 (p = 0.02, p < 0.01). A significant relationship was detected between the presence of hypertension, the stage of diabetic retinopathy and the PSV in the central retinal artery of our patients (chi2 = 8.29; p = 0.04). CONCLUSION: Medically treated hypertension affects the retrobulbar circulatory parameters in the central retinal artery and vein in diabetes. PMID:18766369


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BACKGROUND: Hemodialysis (HD) patients are at increased risk for arterial intimal (AIC) and medial calcification (AMC). METHODS: In a cross-sectional study on 153 HD patients we evaluated the presence of AIC and AMC using plain radiography of the pelvis and the presence of atherosclerotic lesions using high-resolution B-mode ultrasonography of the common carotid arteries (CCA). RESULTS: The radiography of the pelvis confirmed the frequent presence of AIC (35.3%) and AMC (35.9%) in our HD patients. Arterial calcification was absent (non calcified-NC) in a minority of patients (28.8%). Patients with AIC had significantly higher prevalence of atherosclerotic plaques on CCA (78.6%) compared with both other groups and a higher number of documented atherosclerotic complications, such as cardiovascular (85.2%), cerebrovascular (33.3%) and peripheral arterial disease (38.9%) in comparison with the NC patients. According to the 1-year calculated data from patient records, there were
no significant differences in the specific HD risks, such as the dose of prescribed calcium carbonate and vitamin D3, serum levels of calcium, phosphate, calcium-phosphate product and intact parathyroid hormone. All four bone metabolism markers within the range proposed by K/DOQI guidelines were achieved in 9.3%, 14.5% and 20.4% in the AIC, AMC and NC group, respectively. CONCLUSIONS: Patients with AIC and AMC are frequently found in the HD population. Screening for arterial calcifications in chronic kidney disease patients is suggested even in the early pre-dialysis period. The highest proportion of patients within the guidelines proposed range for bone and mineral metabolism markers was observed in the NC group. A longer period of data analysis is required in order to evaluate the possible role of some traditional and HD-specific risk factors for the development of arterial calcifications. The achievement of the K/DOQI guidelines is an important issue in the prevention of those conditions. PMID:18437535


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This study examined the release of aluminium and fluoride from restorative materials placed in either deciduous or young permanent immature teeth stored in artificial saliva for 1 month. Cavities were prepared in extracted teeth, then filled with a fluoride releasing restorative (glass-ionomer, compomer or composite resin), with and without conditioning as appropriate. The teeth were then stored in artificial saliva for 1 month, after which the amount of aluminium and fluoride released was determined spectrophotometrically. With all materials tested, both aluminium and fluoride were released in all cases. Young immature teeth were associated with lower level of ion release which was attributed to the absorption of ions by the enamel. However, unconditioned samples were usually associated with similar ion release to conditioned ones, suggesting that the loss of mineral phase on conditioning has only a marginal effect on the capacity for ion uptake. The ratio of aluminium to fluoride released varied with the type of tooth, deciduous conditioned teeth generally absorbing proportionately less aluminium than young immature teeth. The overall conclusion is that interaction with ions released by restorative materials is influenced by type of tooth. PMID:18584302


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OBJECTIVE: The aim of this study was to investigate the adaptation of different types of restorations towards deciduous and young permanent teeth. MATERIAL AND METHODS: Class V cavities were prepared in deciduous and young permanent teeth and filled with different materials (a conventional glass-ionomer, a resin-modified glass-ionomer, a poly-acid-modified composite resin and a conventional composite resin). Specimens were aged in artificial saliva for 1, 6, 12 and 18 months, then examined by SEM. RESULTS: The composite resin and the polyacid-modified composite had better marginal adaptation than the glass-ionomers, though microcracks developed in the enamel of the tooth. The glass-ionomers showed inferior marginal quality and durability, but no microcracking of the enamel. The margins of the resin-modified glass-ionomer were slightly superior to the conventional glass-ionomer. Conditioning improved the adaptation of the composite resin, but the type of tooth made little or no difference to the performance of the restorative material. All materials were associated with the formation of crystals in the gaps between the filling and the tooth; the quantity and shape of these crystals varied with the material. CONCLUSIONS: Resin-based materials are generally better at forming sound, durable margins in deciduous and young permanent teeth than cements, but are associated with microcracks in the enamel. All fluoride-releasing materials give rise to crystalline deposits. PMID:19089281


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A newborn girl was found to have a massive lymphatic truncal vascular malformation with overlying cutaneous venous anomaly associated with overgrown feet and splayed toes. These manifestations comprise the recently described CLOVE syndrome. She also had cranial asymmetry and developed generalized seizures, which were treated with anticonvulsants. Cranial CT showed encephalomalacia, widening of the ventricles and the sulci, hemimegalencephaly (predominantly white matter) and partial agenesis of corpus callosum. Review of the literature identified several other patients with CLOVE syndrome, some of whom were misdiagnosed as having Proteus syndrome, with strikingly similar manifestations. We conclude that CNS manifestations including hemimegalencephaly, dysgenesis of the corpus callosum, neuronal migration defects, and the consequent seizures, may be an rarely recognized manifestation of CLOVE syndrome.


In the every day practice of answering questions from the area of medicine, today there is growing need for forensic medical expertise of body injuries in the criminal procedure. Furthermore, when qualifying the body injury, the expert must possess knowledge and experience not only medical, but also he/she must be aware of the legal requirements and norms from the Code of Criminal Procedure and the Criminal Code of R. Macedonia. This will enable the expert to contribute to explanation and clarification of certain facts and issues related to the body injury. In this paper, by citing Articles 255 and 256 from the Code of Criminal Procedure, it is explained how expert can be adequately selected by the court. In addition to this, by citing Article 271 from the aforementioned Code, a way of analysing body injuries is defined; and finally, defining of body injuries is explained through citing of Article 130 and 131 from the Criminal Code of R. Macedonia, which is regarding body injury and grave body injury. The aim of this paper is to outline the method of performing these forensic medical expertises, i.e. by who and when can expertise of body injuries be asked and moreover, what is the legal and ethical responsibility of the expert during the execution of the expertise. Additionally, the steps that the expert should follow when preparing a written statement and opinion for the type of the body injury are explained. More specifically, emphasis is placed on expert’s requirements after examination of injured individual; after revision of the medical documentation during expertise of body injuries in criminal subjects; and providing oral statement and opinion during the criminal procedure.


Polarized IR reflectance spectra of K2Ni(SO4)2.6H2O single crystal (belonging to the group of Tutton salts) were recorded at near-normal incidence. From the dispersion analysis performed on the spectra recorded from the ac crystal plane, mode parameters: transversal frequency, oscillator strength, attenuation con-
stant and the orientation of the transition moment were determined. The polarized spectrum along the b crystallographic axis was also recorded and a dispersion analysis performed. Comparison between the spectroscopically obtained transition moment directions with those obtained from the structure data for various modes is discussed. All dielectric tensor component values were obtained for the whole mid-IR frequency range. Also, the real and the imaginary parts of the complex indexes of refraction for the waves with wave vector in the direction of the b crystallographic axis and in the ac plane (when the direction of the electric vector is oriented along the b axis) were found as functions of frequency. PMID:17584523


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Expressions describing the vortex beams that are generated by the process of Fresnel diffraction of a Gaussian beam incident out of waist on fork-shaped gratings of arbitrary integer charge p, and vortex spots in the case of Fraunhofer diffraction by these gratings, are deduced. The common general transmission function of the gratings is defined and specialized for the cases of amplitude holograms, binary amplitude gratings, and their phase versions. Optical vortex beams, or carriers of phase singularity with charges mp and -mp, are the higher negative and positive diffraction-order beams. The radial part of their wave amplitudes is described by the product of the mpth-order Gauss-doughnut function and a Kummer function, or by the first-order Gauss-doughnut function and the difference of two modified Bessel functions whose orders do not match the singularity charge value. The wave amplitude and the intensity distributions are discussed for the near and far fields in the focal plane of a convergent lens, as well as the specialization of the results when the grating charge p=0; i.e., the grating turns from forked into rectilinear. The analytical expressions for the vortex radii are also discussed. PMID:18978843


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It is well known that factors such as aging and water quality may influence pigmented macrophages (PMacs) in fishes, but it is not established yet if PMacs undergo seasonal and breeding dependent variations. This study explored this caveat and reports qualitative histological and stereological data on liver PMacs from wild female Ohrid trout, Salmo letnica, during the annual breeding cycle. Data showed that a minority of PMacs contained melanin and that the vast majority of them contained only hemosiderin or hemosiderin and lipofuscin/ ceroid pigment. It was suggested that this is the normal scenario for the species. One remarkable result was the demonstration of a striking increase, after spawning, of the relative and total volumes of the hepatic macrophages, both parenchyma and stroma located. Because the melano PMacs did not vary, those changes were due to fluctuations in the hemosiderin-laden PMacs. We concluded that Ohrid trout presented a pigment composition in liver


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OBJECTIVE: An early identification of eventual intrauterine growth retardation (IUGR) and fetus development using an ultrasound method. BACKGROUND: Preeclampsia (PIH) complicates from 5 to 10% of pregnancies and it is a leading cause of maternal and fetal mortality and morbidity. METHODS: The study was conducted during a 2 year period based on patients between 15 and 41 years, divided in two groups: group A based on 67 pre eclamptic patients, and group B based on 129 normotensive pregnancies. RESULTS AND CONCLUSION: The fetuses from group A were suspected from IUGR (p<0.05). Based on our study it can be concluded that IUGR is the main complication of the fetus in the hypertensive pregnancy. The most common type of restriction in PIH was the asymmetric type of IUGR. In PIH pregnancies, there could be a faster aging of the placenta and oligohydramnion. PMID:19040147


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It is well known that factors such as aging and water quality may influence pigmented macrophages (PMacs) in fishes, but it is not established yet if PMacs undergo seasonal and breeding dependent variations. This study explored this caveat and reports qualitative histological and stereological data on liver PMacs from wild female Ohrid trout, Salmo letnica, during the annual breeding cycle. Data showed that a minority of PMacs contained melanin and that the vast majority of them contained only hemosiderin or hemosiderin and lipofuscin/ ceroid pigment. It was suggested that this is the normal scenario for the species. One remarkable result was the demonstration of a striking increase, after spawning, of the relative and total volumes of the hepatic macrophages, both parenchyma and stroma located. Because the melano PMacs did not vary, those changes were due to fluctuations in the hemosiderin-laden PMacs. We concluded that Ohrid trout presented a pigment composition in liver
macrophages that differed from other fish, including salmonids, where most liver phagocytes essentially display melanin. Our quantitative data support interspecies differences in the amount of liver macrophages and also that after spawning expansion of the macrophage pool is crucial and most likely connected with the needs of liver remodeling (leading to a decrease in hepatic mass). So, we suggested that the hormonal (sex steroidal) constellation influenced the liver macrophage pool. Additionally, we proved that the use of fish liver macrophages for biomonitoring should take into account the considerable natural breeding/seasonal dependent variations that are expected to occur. PMID:18767051


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Spinal muscular atrophy (SMA) is the second most common lethal autosomal recessive disorder of childhood, affecting approximately 1 in 6,000-10,000 births, with a carrier frequency of 1 in 40-60. There is no effective cure or treatment for this disease. Thus, the availability of prenatal testing is important. The aim of this study was to establish an efficient and rapid method for prenatal diagnosis of SMA and genetic counseling in families with risk for having a child with SMA. In this paper we present the results from prenatal diagnosis in Macedonian SMA families using direct analysis of fetal DNA. The probands of these families were previously found to be homozygous for a deletion of exons 7 and 8 of SMN1 gene. DNA obtained from chorionic villas samples and amniocytes was analyzed for deletions in SMN gene. SMN exon 7 and 8 deletion analysis was performed by polymerase chain reaction/restriction fragment length polymorphism (PCR/RFLP). Of the 12 prenatal diagnoses, DNA analysis showed normal results in eight fetuses. Four of the fetuses were homozygote for a deletion of exons 7 and 8 of SMN1. After genetic counseling, the parents of the eight normal fetuses decided to continue the pregnancy, while in the four families with affected fetuses, the pregnancy was terminated. The results were confirmed after birth. PMID:18752447


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INTRODUCTION: Premature thelarche presents as an appearance of breasts and glandular tissue in girls before the age of 8 years. It is mostly a benign and transitory variation of premature sexual development. AIM OF THE STUDY: We evaluated a group of girls with premature thelarche for clinical and auxologic characteristics for a period of three years. We investigated the duration of the condition and eventual progression toward true idiopathic central precocious puberty. PATIENTS, MATERIALS, METHODS: At the Department of Endocrinology and Genetics at the Pediatric Clinic in Skopje, 127 girls with premature thelarche, from all over the country, were analyzed and followed-up for a period of 3 years (2000-2003). RESULTS AND CONCLUSIONS: Premature thelarche as a partial form of premature sexual development, in our study included 98 girls, and showed to be a benign condition, the girls are with normal height, slightly elevated weight, but with increased bone maturation and height velocity in the first year. A progression toward central precocious puberty was not registered. The duration of the condition was about two years in most of the girls, with a regression of enlarged breasts in smaller patients and with occurrence of normal puberty in older patients. PMID:18203537


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The determination of the components of the sialoliths is important both from the point of view of chances for a successful medical treatment of the patients and because the prevention of further re-occurrence of sialolithiasis depends upon the knowledge of the nature of the constituents of the concrements. Despite the fact that infrared spectroscopy is widely used for the determination of the composition of sialoliths, urinary calculi and bladder stones, we found no data for any chemometric method developed for such purposes. Here, a method is presented for quantitative
Serum proinflammatory cytokines were found to be altered in Graves disease (GD) and in TED. Serum values of IL1alpha, IL-1beta, IL-6, TNF-alpha were assessed in 22 patients with TED before and after treatment (aged 46.82 +/- 12.47, M:F=16:6). Free thyroxin was high, TSH low, thyroid ultrasound showed diffuse thyroid enlargement, treatment with antithyroid drugs propylthouracil (PTU) or methymasol (MMI) resulted in clinical and hormonal remission. Several months after the initiation of the signs of hyperthyroidism, a progression in the ophthalmopathy was observed (Hertel up to 25 mm: normal 15-17 mm) while patients were clinically and hormonally euthyroid. Blood was collected in euthyroid state (with TED signs present, before corticosteroid therapy (CS) treatment) and after 3 months of treatment (patients without TED and without TED treatment). CS resulted in response in 12/22 patients. Ophthalmic irradiation (O1) given with CS therapy, resulted in a response in twelve patients (12/12). Lack of response to CS treatment, with rapid increase in proptosis, and loss of visual acuity prompted ophthalmic decompression (OD) in two patients. Both recovered visual acuity, while proptosis fell under 25 mm Hertel. The control group had 29 persons (aged 51.86 +/- 10.52, M:F = 16:13). A significant difference was found in the serum levels of IL-1alpha between the groups of controls (0.74 +/- 0.55 pg/ml) and patients before treatment (1.85 +/- 1.85 pg/ml; p < 0.005). This difference further increased after treatment to 5.08 +/- 4.42 pg/ml (p < 0.05). Serum IL-1beta was higher in patients before treatment (0.36 +/- 0.15 pg/ml) in comparison with controls (0.24 +/- 0.43 pg/ml; statistically not significant--NS), and its concentrations remained unchanged after treatment (0.39 +/- 0.18 pg/ml; NS). IL-6 also had lower concentrations in patients at the start of the treatment (1.28 +/- 0.92; controls 1.72 +/- 1.9 pg/ml; NS). After the completion of TED treatment its concentration raised to 2.07 +/- 1.82 pg/ml (higher than the pretreatment; NS). For patients with low Clinical Activity Score (CAS) scores (1-5) there was no change in IL-6 concentrations before (1.03 +/- 0.64 pg/ml) and after treatment (1.07 +/- 0.63 pg/ml). Patients with higher CAS scores (6-10) had a change in IL-6 levels (from 1.32 +/- 1.00 to 2.67 +/- 4.84; p > 0.05). In addition, patients with pathological VEP had no changes in IL-6 (from 0.93 +/- 0.53 to 0.97 +/- 0.32 pg/ml), while patients with normal VEP had increased IL-6 serum concentrations (1.36 +/- 0.98 to 2.32 +/- 4.17 pg/ml; NS). No stimulatory effect of IL-1beta on IL-6 was observed: IL-1beta was unchanged while IL-6 levels were increased after treatment. In general, when compared to controls TNF-alpha was twofold lower in patients than in the controls (0.18 +/- 0.034 and 0.34 +/- 0.41 pg/ml respectively; p < 0.05). In addition, serum TNF-alpha concentration did not change with treatment (0.18 +/- 0.03 pg/ml; p < 0.05). Increasing serum concentrations of TNF-alpha before and after treatment were associated with more severe forms of TED (treated with OD and O1 with CS). Smoking did not alter the serum concentrations of cytokines. PMID:18297990


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Coagulation disorders are a well known complication in patients with head injuries. A prospective study was undertaken to determine the incidence and prognostic value of haemostatic abnormalities in this group of patients. Clotting mechanisms in 105 patients with an isolated head injury were evaluated using platelet count (PC), prothrombin time (PT), activated partial thromboplastin time (APPT), thrombin clotting time (TCT), plasma fibrinogen concentration (Fib), level of fibrin-fibrinogen degradation products (FDP) and increased consumptive coagulopathy grade (ICCG) in the first 24 h after injury. The clinical severity of the head injuries was represented by the post-resuscitation Glasgow coma score (GCS) divided into four coma groups (CG). Test results were compared between two outcome groups of patients: discharged and dead. The incidence of disseminated intravascular coagulation...
(DIC) by laboratory criteria in the two groups was 12% and 38%, respectively. The differences between mean values of the discharged and dead patients for GCS, APTT, FDP and ICCG were statistically significant (P < 0.001). There was a very strong correlation between the GCS and values of the FDP, APTT, TCT and ICCG (P < 0.01). Stepwise logistic regression analysis demonstrated that GCS, FDP level, and ICCG predicted outcome in 84% of cases. Other tests did not provide additional predictive value. We conclude that evaluation of coagulation and fibrinolysis in patients with head injuries is not only important in identifying the occurrence of coagulopathy, but also useful in predicting head injury outcome.


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BACKGROUND: Natriuretic peptides have emerged in the last years as useful diagnostic and prognostic biomarkers in patients with stable CAD. Myocardial ischemia per se might increase NT-proBNP levels. OBJECTIVES: The aim of the present study was to determine whether NT-proBNP levels in patients with stable CAD and preserved left ventricular function are elevated and second, to compare NT-proBNP in patients with verified ischemia on myocardial perfusion imaging (MPI) to non-ischemic subjects with known CAD. METHODS: 117 patients were prospectively included, divided in two groups: group A (26 patients)- -with normal MPI and without known CAD and group B (91 patients)--with abnormal MPI or known CAD. Patients from group B were further divided according to the presence of ischemia on MPI in non-ischemic (29 pts) and ischemic (62 pts) subgroup. RESULTS: Levels of NT-proBNP in group B were significantly higher compared to group A (median 53 vs 21 pg/ml, p = 0.012). End diastolic and end systolic volumes were higher, and ejection fraction after stress and at rest was lower in group B (63% vs 71%, p = 0.0004 and 69% vs 75%, p = 0.008). No significant difference in NT-proBNP levels (median 48 vs 62 pg/ml, p = 0.5) and functional parameters between the ischemic and nonischemic subjects was found. CONCLUSION: Our data show that patients with stable coronary artery disease and preserved left ventricular function have elevated levels of NT-proBNP. We could not demonstrate that the presence of myocardial ischemia per se was an additional factor leading to increase of the natriuretic propeptide. PMID:18792482


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IR and Raman spectroscopy study on two collected cyclosilicate species: schorl (from tourmaline group), Na(Fe,Mg)(3)Al(6)(BO(3))(3)Si(6)O(18)(OH,F)(4) and beryl (Be,Mg,Fe)(3)Al(2)Si(6)O(18) were carried out. Although beryl is nominally anhydrous mineral, vibrational results strongly indicate that H(2)O molecules exist in the structural channels. The number of vibrational bands and their frequencies revealed the presence of H(2)O type II, in which C(2) symmetry axis of the water molecule is parallel to the structural channel (and to the c-axis of beryl). On the other hand, it was found that observed bands in the IR and Raman OH stretching region of the other tourmaline varieties appear as a result of the cation combinations involving dominant presence of Mg and Fe cations in the Y structural sites. The strong indication derived from the vibrational spectroscopic results that the studied mineral represents a schorl variety, coincide very well with the results obtained by powder X-ray diffraction and X-ray microprobe analysis. Both minerals show IR spectral similarities in the region below 1500 cm(-1), whereas the resemblance between the Raman spectra (1500-100 cm(-1)) is less expressed confirming that these spectra are more sensitive to compositional changes and to structural disorder. The identification of both minerals was additionally supported by studying the powder X-ray diffraction diagrams. PMID:18722809


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OBJECTIVES: To determine the prevalence of depressive and high trait anxiety symptoms and substance use, including alcohol and nicotine, in first-year and second-year medical students in Skopje University Medical School, Republic of Macedonia. BACKGROUND: It is important to investigate medical students because they are under significant pressure during early years of medical education, a period during which the attitudes and behaviors of physicians develop. METHODS: A cross-sectional survey in classroom settings, using an anonymous self-administered questionnaire, was performed in 354 participants (181 first-year, 118 females and 63 males and 173 second-year medical students, 116 females and 57 males) aged 18 to 23 years. The Beck Depression Inventory (BDI) and Taylor Manifest Anxiety Scale (TMAS) were used to determine depressive and high trait anxiety symptoms. BDI scores 17 or higher were categorized as depressive and TMAS scores 16 or higher as high anxiety symptoms. A Student t-test was used for continuous data analysis. RESULTS: Out of all participants 10.4% had BDI score 17 or higher and 65.5% had TMAS score 16 or higher. Alcohol was the most frequently used substance in both groups. Smoking prevalence was 25%. Benzodiazepines (diazepam, alprazolam) use was 13.1%. Illicit drug use was rare (1.1% in freshmen and 3.6% in juniors) in both groups. CONCLUSIONS: High frequency of manifest high anxiety symptoms and depressive symptoms and benzodiazepine use among Macedonian junior medical students should be taken seriously and a student counseling service offering mental health assistance is necessary. PMID: 18573747


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This report describes two patients who had developed asthma after working as automobile painters with isocyanate-based aerosol paint for two years or over. In both patients asthma was confirmed using the standard diagnostic procedure. One of the subjects was atopic. One was ex-smoker and the other had never smoked. Neither had a family history of asthma. The symptoms occurred after workplace exposure lasting two years in one patient and three in the other. As both reported work-relatedness of the symptoms, they underwent serial peak expiratory flow rate (PEFR) measurement and bronchoprovocation testing. Significant work-related changes in PEFR diurnal variations and in non-specific bronchial hyperresponsiveness (NSBH) were observed in one patient, suggesting allergic occupational asthma (OA), while the other patient was diagnosed work-exacerbated asthma (WEA). Our data confirm that spray painting is an occupation with increased risk of respiratory impairment and asthma. PMID: 18573749

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We studied the influence of heat acclimation (1 to 48 h and 4 to 60 d at 35 +/- 1 degrees C) on certain hepatic carbohydrate-related enzymes and substrates in rats. The results showed a decrease of liver glycogen content and GPho-ase activity during the period of short-term exposure, followed by normalization to the control level and stabilization to the new level in the period of long-term heat acclimation. Conversely, G-6-P-ase and F-1,6-BP-ase activities increased during the short-term period, followed by a decrease and stabilization to a new, lower level in the prolonged acclimation. The blood glucose level decreased during whole period of acclimation, whereas intermediate substrates increased during the short-term and stabilized at a new, higher level during prolonged acclimation. The time-dependent changes of duration of heat acclimation could be summarized in three phases: short-term heat exposure (1 to 24 h) with intensive glycogenolysis and gluconeogenesis to glucose; a period with temporary changes (24 h to 7 d) with tendency of normalization to control level, and prolonged heat acclimation (7 d to 60 d), which favors both direct and indirect glycogen synthesis. PMID:19024796


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No abstract available. PMID:18678512


Special Hospital for Cardiac Surgery Filip Vtori, Skopje, Macedonia.

We describe a case of a 46-year-old woman with dehiscence and paravalvular leak of a second-time replaced mitral mechanical prosthesis, successfully treated with Amplatzer occlusion of the paravalvular leak, thus avoiding a second reoperation and improving the patient's symptoms. PMID:18614550


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Acute myocardial infarction is a rare condition in young athletes. One of the causes could be a hypercoagulable state due to congenital antithrombin III deficiency, together with a prothrombotic state soon after strenuous physical training. We present the case of myocardial reinfarction in young football player with antithrombin III deficiency, treated with primary percutaneous coronary intervention and drug eluting stent, as well as the functional repercussions of continuous intensive physical activity. PMID:18810723


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BACKGROUND: Myocardial viability is an important parameter, predictive of improvement in left ventricular function after coronary artery bypass surgery (CABG). We wanted to define the relationship between the extent of hibernated myocardium and improvement in ejection fraction function and quality of life after CABG. METHODS: Sixty-five consecutive patients with ischaemic cardiomyopathy (mean LVEF <40%) undergoing surgical revascularization were studied with (99m)Tc-sestamibi myocardial perfusion Gated SPECT imaging (MPI) to assess preoperative myocardial viability. Patients were divided into two groups, based on the extent of viable myocardium before CABG: group 1, 39 patients with more than four viable segments; and

http://www.mjms.ukim.edu.mk
group 2, 26 patients with fewer than four viable segments. Regional and global ejection fraction function, heart failure symptoms and quality of life were measured before and 14 +/- 4 months after revascularization. We used bull’s eye quantitative analysis of MPI scans and a 17-segment model of ejection fraction function and perfusion evaluation. RESULTS: The number of viable segments per patient was directly related to the improvement in LVEF after revascularization (r=0.79, P<0.01). Patients with more than four viable segments representing 24% of the left ventricle yielded the sensitivity of 83% and specificity of 79%, respectively, for predicting improvement in LVEF. Furthermore, the presence of four or more viable segments predicted improvement in heart failure symptoms and quality of life after revascularization. CONCLUSION: The presence of more than four viable segments (24% of the left ventricle) on MPI in patients with ischaemic heart failure before CABG surgery is significantly correlated with the improvement in LVEF, heart failure symptoms and quality of life post-operatively.

**PMID:** 18349791


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**BACKGROUND:** Long-term heroin abuse is related to pathological changes in many organs mediated by oxidative stress (OS). **OBJECTIVES:** Estimation of systemic OS and antioxidant capacity in heroin addiction and detoxification provides information about prooxidant/antioxidant homeostasis in heroin misuse and need for antioxidant supplementation. **METH-ODS:** OS was evaluated by the measurement of plasma reactive oxygen metabolites using spectrophotometric method and plasma lipid peroxidation by its end product—malondyaldehyd using Tiobarbituric Acid Reactions Substances method. The extracellular antioxidant capacity was estimated using OXY-adsorbent test. RESULTS: This cross-sectional study includes 68 patients: 46 heroin addicts (20 patients on chronic heroin abuse, 19 patients on conventional method of detoxification and 7 patients on opioid antagonist—naltrexone (and 22 patients as a control) group. Increased OS was found in the heroin group (d-ROMs 349.3 +/- 102.2 UCarr; MDA 3.7 +/- 0.4 micromol/L) compared to the group on detoxification (d-ROMs 230.2 +/- 96.4 UCarr; MDA 3.6 +/- 0.3 micromol/L) and control group (d-ROMs 264.1 +/- 30.9 UCarr; MDA 3.7 +/- 0.2 micromol/L). TAC was decreased in the heroin group (324.5 +/- 75.0 micromol HClO/ml) and restored during conventional detoxification (371.8 +/- 25.1 micromol HClO/ml), but not completely in the group with naltrexone treatment (335.6 +/- 16.9 micromol HClO/ml) compared with controls (395.4 +/- 35.6 micromol HClO/ml). CONCLUSION: Long-term heroin abuse stimulates a progressive systemic oxidative stress which increases the extracellular antioxidants consumption and develops conditions for chronic heroin toxicity.

**PMID:** 18225476


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A rapid resolution reversed-phase high performance liquid chromatographic (RR RP-HPLC) method has been developed and validated for simultaneous determination of haloperidol and six related compounds. Investigated matrix was a laboratory mixture of a therapeutic active substance haloperidol and its six related compounds in concentration ratio 300:1. Experimental design was used during method optimization (full factorial 23 design) and robustness testing (Central Composite Circumscribed design). Three factors: organic phase variation during gradient elution, flow rate and gradient rise time were independent variables. To estimate the system response during the optimization procedure and robustness testing, resolution (Rs) and a chromatographic response function (CRF) were used. Chromatography was performed with the mobile phase containing phosphate buffer pH 6.5 and acetonitrile as organic modifier. Separation was achieved using gradient elution (organic phase fraction changed linearly from 20 to 72 %) over 7 min. A Zorbax Eclipse XDB C18 Rapid Resolution HT 4.6 mm x 50 mm, 1.8 mum particle size, column was used at 25 degrees C at a flow rate of 1.5 mL min-1. UV detection was performed at 230 nm. The total time for chromatographic separation was 5.5 min with a total analysis time of 7.0 min. The method was validated for its linearity, precision, modal recovery and robust-ness.

**PMID:** 19103562

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The results of the first detailed and systematic investigation of the solid-state forms of sodium valproate, one of the most potent and widely used anticonvulsant medicines, are presented. By using wet and dry methods, eight solid forms of varying stability in air were obtained and characterized. Three extremely hygroscopic polycrystalline hydrates, Na(C8H15O2) X H2O (form A), Na(C8H15O2) X xH2O (form B), and Na(C8H15O2) X yH2O (form D), three acid-stabilized stoichiometric solvates, Na3(C8H15O2)3(C8H16O2)H2O (form C), Na(C8H15O2)(C8H16O2) (form E), and Na3(C8H15O2)3(C8H16O2) X 2H2O (form F), the pure anhydrous salt Na(C8H15O2) (form H), and an additional unstable thermal intermediate Na3(C8H15O2)3(C8H16O2)0.5(form G) were prepared. Under ambient conditions, forms A and B as well as the commercially available compound appear as very hygroscopic white powders. Form C is less hygroscopic, while forms E and F are stable and are not hygroscopic. Partial stabilization of forms A and B can be achieved by evacuation and pressing, which results in a lower hydrate D, or after a heating-cooling cycle, resulting in crystallization of the anhydrous salt H. Addition of one molecule of valproic acid and saturation with one molecule of water of forms A and B results in the less hygroscopic form C. Addition to form C of a second water molecule affords form F, which is not hygroscopic and is indefinitely stable. The symmetric structure and medium alkyl chain length of the valproate ion are some of the probable reasons for the presence of a number of solid solvates: in its most stable conformation, the valproate ion cannot simultaneously pack efficiently and interact strongly through the negatively charged carboxylate group without leaving voids in the crystalline lattice. The conformational flexibility of the aliphatic chains probably aids the penetration of water molecules, which results in a strong affinity for the absorption of water.


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The most common genetic causes of spermatogenic failure are sex chromosomal abnormalities (most frequently Klinefelter's syndrome) and deletions of the azoospermia factor (AZF) regions (AZFa, AZFb, and AZFc) of the Y chromosome. Several studies have proposed that partial AZFc deletions/duplications may be a risk factor for spermatogenic impairment. We describe a multiplex quantitative fluorescent-polymerase chain reaction (QF-PCR) method that allows simultaneous detection of these genetic causes and risk factors of male infertility. The 11-plex QF-PCR permitted the amplification of the amelogenin gene, four polymorphic X-specific short tandem repeat (STR) markers (XHPRT, DXS6803, DXS981, and exon 1 of the androgen receptor gene), nonpolymorphic Y-specific marker (SRY gene), polymorphic Y-specific STR marker (DYS448), and coamplification of DAZ/DAZL, MYPT2Y/MYPT2, and two CDY2/CDY1 fragments that allow for determination of the DAZ, MYPT2Y, and CDY gene copy number. A total of 357 DNA samples from infertile/subfertile men (n = 205) and fertile controls (n = 152) was studied. We detected 14 infertile males with sex chromosome aneuploidy (10 with Klinefelter's syndrome, 2 XX, and 2 XYY males). All previously detected AZF deletions, that is, AZFc (n8), AZFb (n1), AZFb + c (n1), gr/gr (n11), gr/gr with b2/b4 duplication (n3), and b2/b3 (n5), gave a specific pattern with the 11-plex QF-PCR. In addition, 32 DNA samples showed a pattern consistent with presence of gr/gr or b2/b4 and 4 with b2/b3 duplication. We conclude that multiplex QF-PCR is a rapid, simple, reliable, and inexpensive method that can be used as a first-step genetic analysis in infertile/subfertile patients.


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The study of arousal and attention could be of prominent importance for elucidating both fundamental and practical aspects of the mind-brain puzzle. Defined as "general activation of mind" (Kahnemann in Attention and effort. Prentice-Hall, New Jersey, 1973), or "general operation of consciousness" (Thacher and John in
Functional neuroscience: foundations of cognitive processing, Eribaum, Hillsdale, 1977), arousal can be considered as a starting point of fundamental research on consciousness. Similar role could be assigned to attention, which can be defined by substituting the attributes “general” with “focused”. Concerning the practical applications, the empirically established correlation between neuronal oscillations and arousal/attention levels is widely used in research and clinics, including neurofeedback, brain-computer communication, etc. However, the neurophysical mechanism underlying this correlation is still not clear enough. In this paper, after reviewing some present classical and quantum approaches, a transition probability concept of arousal based on field-dipole quantum interactions and information entropy is elaborated. The obtained analytical expressions and numerical values correspond to classical empirical results for arousal and attention, including the characteristic frequency dependence and intervals. Simultaneously, the fundamental (substrate) role of EEG spectrum has been enlightened, whereby the attention appears to be a bridge between arousal and the content of consciousness. Finally, some clinical implications, including the brain-rate parameter as an indicator of arousal and attention levels, are provided. PMID:18975019


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OBJECTIVES: The aim of this report is to present our 30 years experience with various types of urinary diversions, in particular the Bricker and Studer techniques for the management of muscle invasive bladder cancer at our institution. Perioperative, early and late complications are also evaluated. MATERIAL AND METHODS: Between 1977 and 2007, 186 male and 15 female patients underwent combined radical cystectomy, pelvic lymphadenectomy and urinary diversion. In two subgroups of patients we evaluated the complications, divided as early and late, and subdivided as those related or unrelated to the neobladder. Mean follow up time was 28 months (range 12-60 months). RESULTS: Two main types of urinary diversion were performed: the ileal conduit diversion using a technique previously described by Bricker and the ileal neobladder diversion using a technique previously described by a Studer. The ages at surgery ranged from 40 to 82 years with a mean age of 60 years. Histopathologically, transitional cell carcinoma was the most common tumor cell type (93.7%), followed by diffuse papillomatosis (5.5%) and adenocarcinoma (0.7%). The pathological tumor stage was pT1 (4.7%), pT2 (31.4%), pT3 (50.3%) and pT4a (13.3%). Histological evidence of regional lymph node involvement was seen in 25% of the cases. From 52 patients from the Studer subgroup perioperative complications were found in 16 patients (30.7%). Specific early complications directly related to the neobladder occurred in 14 (26.9%) patients. Prolonged ileus in 2 patient (3.8%), ureteral leakage in 9 patients (17.3%), mucus buildup within the diversion in 3 patients (5.7%). Late complications occurred in 10 patients (19.2%): retention of the urine in 4 patients (7.6%) (sticture of the urethra-pouch anastomosis in one patient) and to big reservoir in 3 patients. One patient (1.9%) developed prolonged metabolic acidosis. Stone formation was observed in one patient, two years postoperatively. Unilateral hydroureteronephrosis was observed in 2 patients whereas bilateral hydroureteronephrosis was observed in one patient at one year postoperatively. Perioperative and late complications were similar in the 32 patients from the Bricker subgroup. CONCLUSION: We show that our results with urinary diversion are promising in patients requiring radical cystoprostatectomy. The two methods preferred in our institution offer a sufficient protection of the upper urinary tract with a low complication rate, good voiding function and continence. PMID:18595229


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The stability of proteins is a subject of intense current interest. Aggregation, as a dominant degradation pathway for therapeutic proteins, may cause multiple adverse effects, including loss of efficacy and immunogenicity. In the present study, the formation of aggregates in lenograstim under physiological conditions was monitored. For this purpose, a simple and selective size-exclusion high-performance liquid chromatography method for detection and separation of...
aggregates from intact protein was developed. Sodium dodecyl sulphate-polyacrylamide gel electrophoresis was performed under reducing and non-reducing conditions to determine the nature of aggregate bond formation. Using both techniques, the presence of a low aggregate content attached via disulfide bonds was detected. PMID:18515229


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INTRODUCTION AND OBJECTIVE: To analyze the outcome, complications and functional results in patients undergoing bladder substitution with the Studer continent urinary pouch. MATERIALS AND METHODS: At our Clinic, between January 2005 and December 2006, 20 male patients underwent a radical cystoprostatectomy followed by the Studer orthotopic bladder substitution. RESULTS: The transitional cell carcinoma was found to be the most frequent histopathological type. The distribution by grade and pathological stage showed all were high grade infiltrating tumors localized in the bladder. We observed 3 patients with neobladder-unrelated complications: one patient with a wound infection and 2 patients with a prolonged ileus. CONCLUSION: In conclusion, our results with urinary diversion are promising in patients requiring a radical cystectomy. We believe that the Studer's orthotopic neobladder is an excellent alternative for patients suffering a radical cystectomy and offers a sufficient protection of the upper urinary tract with a low complication rate, good voiding function and continence. PMID:18837243


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During the last decades, the prevalence of various types of renal osteodystrophy has been changed from a high to low bone turnover. Besides the established conventional risk factors, the existence of a dynamic bone disease as most prevalent form of renal osteodystrophy nowadays and its reduced ability to handle an exogenous calcium load has implied a higher risk for vascular calcification, morbidity and mortality in the dialysis population. Calcium-based phosphate binders are inexpensive and efficient but their extended and/or inappropriate use, particularly when used in combination with vitamin D analogues, may contribute to the development of adynamic bone disease and promotion of soft-tissue and vascular calcification. It seems reasonable to reduce the number of calcium carbonate/acetate tablets to only 1 g/day in order to increase serum phosphate and decrease serum calcium, which both in turn might positively stimulate the parathyroid hormone secretion. Low calcium dialysate (1.25 mmol/l) was reported to have an impact on the evolution towards markers reflecting higher bone turnover, most probably by prevention of a positive calcium balance, enabling sustained stimulation of parathyroid


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Using a novel one-step spray-drying process uncoated and Eudragit S 100 coated chitosan-Ca-alginate microparticles efficiently loaded with budesonide (BDS), with bioadhesive and controlled release properties in GIT, were prepared. Microparticles were spherical with mean particle size of 4.05-5.36 microm, narrow unimodal distribution and positive surface charge. A greater extent of calcium chloride limited the swelling ratio of beads, while swelling behaviour of coated beads was mainly determined by properties of enteric coating. Comparing the release profiles of formulations, under different pH conditions, influence of polymer properties and concentration of cross-linker on the rate and extent of drug release was evident. Coating has successfully sustained release of BDS in buffers at pH 2.0 and 6.8, while providing potential for efficient release of BDS at pH 7.4. Release data kinetics indicated influence of erosion and biodegradation of polymer matrix on drug release from microparticles. Prepared formulations were stable for 12 months period at controlled ambient conditions. In conclusion coated microparticles prepared by one-step spray-drying procedure could be suitable candidates for oral delivery of BDS with controlled release properties for local treatment of inflammatory bowel diseases. PMID: 17651952
hormone secretion. Hence, the two reasonable strategies should be employed together in order to prevent consequences related to adynamic bone disease and to contribute to a better long-term quality of life and survival of dialysis patients. PMID:18928151


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Mineral and bone disorders in chronic kidney disease (CKD) patients along with the use of calcium-based phosphate binders may result in vascular calcification (VC) development and associated increase in cardiovascular diseases (CVD) mortality. A few treatment modalities to control hyperphosphatemia, VC and CVD over the years have failed. Recently appeared calcium-aluminum free phosphate binders (sevelamer hydrochloride and lanthanum carbonate) have reduced hypercalcemic adverse events compared to calcium-based binders, although beneficial effects on CVD outcome to justify further widespread utilization of these agents in CKD patients are not reported so far. At present long-term safety of lanthanum administration has been challenged based on its similarities with aluminum and associated liver toxicity reported in experimental rat models. However, recent evidence in CKD patients and the absence of solid arguments for any particular rat organ toxicity, suggest that lanthanum is safe and efficient in treatment of hyperphosphatemia. Classical interventions aimed to reduce PTH concentration are associated with an increase in Ca x P product. A major breakthrough here was achieved with introduction of calcimimetics (cinacalcet). Apart from its effectiveness in reduction of PTH and Ca x P product, a lot of controversy appeared on the cost-effectiveness of this drug in absence of CVD outcome evidence. Hence, adoption of these new therapeutic strategies might be reserved for adamantine cases when there is no economical constraint for this long-term treatment. In this regard, new therapeutic strategies and patents in CKD patients will be discussed in this review. PMID:18204913


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AIM: To analyze the association of methylenetetrahydrofolate reductase polymorphisms (MTHFR-677 and MTHFR-1298) with occlusive artery disease and deep venous thrombosis in Macedonians. METHODS: We examined 83 healthy respondents, 76 patients with occlusive artery disease, and 67 patients with deep venous thrombosis. Blood samples were collected and DNA was isolated from peripheral blood leukocytes. Identification of MTHFR mutations was done with CVD StripAssay (ViennaLab, Labordiagnostika GmbH, Vienna, Austria) and the population genetics analysis package, PyPop, was


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Because of the limited chance of receiving a kidney transplant (for several well-known reasons), a lot of desperate dialysis patients procure an unrelated donor kidney transplant against all medical advice. This type of renal paid transplantation is associated with many surgical complications and invasive opportunistic infections that increase the morbidity and mortality in this group of transplant recipients. In this report, we describe a case of a 22-year-old girl with a segmental infarction of the graft lower pole and a complete pyelo-ureteral necrosis as a consequence of some vascular damage, complicated by a pathohistological finding of an invasive candidiasis. Despite the successful surgical pyelovesical anastomosis and the good recovery of the patient and the kidney, long-term prognosis remains poor. The lack of information from the transplanting center regarding both donor and recipient and the associated, unacceptable risks on the graft and patient survival in unrelated, paid transplant recipients reinforce the standpoint that this practice should be abandoned. PMID:18204913

used for the analysis. Pearson P values, crude odds ratio, and Wald's 95% confidence intervals were calculated. RESULTS: The frequency of C alleles of MTHFR-677 was 0.575 in patients with deep venous thrombosis, 0.612 in patients with occlusive artery disease, and 0.645 in healthy participants. The frequency of T allele of MTHFR-677 was lower in healthy participants (0.355) than in patients with occlusive artery disease (0.388) and deep venous thrombosis (0.425). The frequency of A allele for MTHFR-1298 was 0.729 in healthy participants, 0.770 in patients with occlusive artery disease, and 0.746 in patients with deep venous thrombosis. The frequency of C allele of MTHFR-1298 was 0.271 in healthy participants, 0.230 in patients with occlusive artery disease, and 0.425 in patients with deep venous thrombosis. No association of MTHFR-677 and MTHFR-1289 polymorphisms with occlusive artery disease and deep venous thrombosis was found, except for the protective effect of MTHFR/CA:CC diplotype for occlusive artery disease. CONCLUSION: We could not confirm a significant association of MTHFR-677 and MTHFR-1289 polymorphisms with occlusive artery disease or deep venous thrombosis in Macedonians, except for the protective effect of MTHFR/CA:CC diplotype against occlusive artery disease. PMID:18293456


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The aim was to investigate different genotypes and haplotypes of methylenetetrahydrofolate reductase (MTHFR-677, -1298) and plasma concentration of total homocysteine (tHcy) in Macedonian patients with occlusive artery disease (OAD) and deep venous thrombosis (DVT). Investigated groups consists of 80 healthy, 74 patients with OAD, and 63 patients with DVT. Plasma tHcy was measured with Microplate Enzyme Immunoassay. Identification of MTHFR genotypes and haplotypes was done with CVD StripAssay. The probability level (P-value) was evaluated by the Student's t-test. Plasma concentration of tHcy in CC and CT genotypes of MTHFR C677T was significantly increased in patients with OAD and in patients with DVT. Plasma concentration of tHcy in AC genotype of MTHFR A1298C was increased in patients with OAD and in patients with DVT. Plasma concentration of tHcy was significantly increased in AA genotype of patients with OAD, but not in patients with DVT. We found a significant increase of plasma tHcy in patients with OAD in comparison with healthy respondents for normal:heterozygote (CC:AC), heterozygote:normal (CT:AA), and heterozygote:heterozygote (CT:AC) haplotypes. Plasma concentration of tHcy in patients with DVT in comparison with healthy respondents was significantly increased for normal:normal (CC:AA), normal heterozygote (CC:AC), and heterozygote:heterozygote (CT:AC) haplotypes. We conclude that MTHFR C677T and MTHFR A1289C genotypes and haplotypes are connected with tHcy plasma levels in Macedonian patients with OAD and DVT. PMID:18800176


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Ti(I) and Ti(III) are preconcentrated simultaneously from aqueous solutions by colloid precipitate flotation using two collectors: hydrated iron(III) oxide (Fe(2)O(3).xH(2)O) and iron(III) tetramethylenedithiocarbamate (Fe(TMDTC)(3)). After the coprecipitation step and the addition of foaming agents, Ti(I) and Ti(III) were separated from the water by a stream of air bubbles. Various factors affecting Ti(I) and Ti(III) recoveries during the separation from water, including the collector mass, the nature of the supporting electrolyte, pH, zeta potential of the collector particle surfaces, type of tenside, etc., were investigated. Within the optimal pH range (6-6.5), establishing by a recommended procedure, Ti(I) and Ti(III) were separated from the water by a stream of air bubbles. Various factors affecting Ti(I) and Ti(III) recoveries during the separation from water, including the collector mass, the nature of the supporting electrolyte, pH, zeta potential of the collector particle surfaces, type of tenside, etc., were investigated. Within the optimal pH range (6-6.5), establishing by a recommended procedure, Ti(I) and Ti(III) were separated quantitatively (94.9-100.0%) with 30 mg Fe(III). Both Ti ions were simultaneously separated without any previous conversion of one type of Ti ion to the other. Total Ti determination was performed by electrothermal atomic absorption spectrometry by previous matrix modification of the concentrated samples. The determination limit of Ti by this method is 0.108 mug l(-1). PMID:18967260

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This paper describes a retrospective cohort study comparing 60 workers occupationally exposed to inorganic lead and 60 matched controls. All subjects were assessed using data obtained from a specially designed Questionnaire for lead exposure and toxic effects assessment, physical examination, spirometry, ECG, and laboratory tests including blood lead level (BLL) and biomarkers of lead toxic effects. Muscle pain, droopiness, and work-related nasal symptoms were significantly more frequent in lead workers. The prevalence of lung symptoms was higher in lead workers than in controls, but not significantly (20 % vs. 6.6 %, respectively). Mean values of BLL and delta-aminolevulinic acid (ALA) were significantly higher in lead workers. The activity of delta-aminolevulinic acid dehydratase (ALAD) in lead workers was significantly lower than in controls. Abnormal of BLL, ALAD, and ALA were more frequent in lead workers, with statistical difference for BLL and ALAD. Inverse correlation was found between BLL and ALAD, and positive correlation between BLL and age, years of employment, and years of exposure. Inverse correlation was found between ALAD and age, years of employment, years of exposure, blood pressure, alcohol consumption, and years of alcohol consumption. Changes in spirometry correlated inversely with BLL. A positive correlation was found between BLL and erythrocyte count and haemoglobin concentration, whereas it was inverse for ALAD and haemoglobin concentration. A significant difference was found for BLL and ALAD, with a very high odds ratio (14.64 and 7.23, respectively) and high relative risk (4.18 and 3.08, respectively). Our data have confirmed the association between occupational lead exposure and deviation in specific biological markers of lead effect and between the role of occupational exposure in the development of adverse effects.


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Autoimmune thyroiditis is rarely described in association with nephrotic syndrome. Herein we report a girl who developed autoimmune thyroiditis insidiously during the course of minimal change nephrotic syndrome. She was steroid-sensitive, but developed severe steroid dependency and did not respond to cyclophosphamide therapy. She went into stable remission with levamisole. Five months after introduction of levamisole a mild goiter was found on systematic examination at school. The diagnosis of autoimmune thyroiditis was established with typical ultrasound appearance of the thyroid gland along with significant titers of antithyroid antibodies. It is very unlikely that levamisole was responsible for thyroiditis because experimental animal administration of high doses of levamisole inhibited lymphocyte infiltration of the thyroid. Since levamisole has had a beneficial effect on the nephrotic syndrome in our patient we decided to continue the treatment. She has been receiving levamisole for 3 years, and no adverse effects have been observed during the treatment period. PMID: 18461358


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Primary distal renal tubular acidosis (dRTA) is an inherited disease characterized by the inability of the distal tubule to lower urine pH <5.50 during systemic acidosis. We report two male siblings who presented with severe hyperchloremic metabolic acidosis, high urinary pH, nephrocalcinosis, growth retardation, sensorineural hearing loss, and hypokalemic paralysis. Laboratory investigations revealed proximal tubular dysfunction (low molecular weight proteinuria, generalized hyperaminoaciduria, hyperphosphaturia with hyperuricosuria, and hypouricemia with hyperuricosuria). There was significant hyperoxaluria and laboratory evidence for mild rhabdomyolysis. Under potassium and alkali therapy, proximal tubular abnormalities, muscular enzymes, and oxaluria normalized. A homozygous mutation in the ATP6V1B1 gene, which is responsible for dRTA with early hearing loss, was detected in both siblings. In conclusion, proximal tubular dysfunction and hyperoxaluria may be found in children with dRTA and are reversible under...
appropriate therapy. PMID:18386070


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Bronchial asthma is a multifactorial disease whereby both environmental and genetic factors contribute to its aetiology and/or clinical severity. The aim of this study was to examine the association of 22 cytokine gene polymorphism in the Macedonian population with bronchial asthma (BA). The sample of the population comprised of 301 normal unrelated individuals and 74 patients with BA. Cytokine genotyping was performed by PCR. Susceptible cytokine polymorphisms for BA for ten genotypes (IL-4 -1098/T:T, TNF-alpha -238/A:G, IL-4 -590/C:C, IL-2 +166/T:T, IL-2 -330/T:T, IL-10 -1082/G:G, IFNgamma utr5644/T:T, IL-10 -1082/A:A, IL-1beta +3962/T:T, IL-6 -174/G:G), six diplotypes, four haplotypes, and two alleles were found. Protective cytokine polymorphisms for BA for seven cytokine genotypes (IL-4 -1098/G:T, TNF-alpha -238/G:G, IL-2 -330/G:T, IL-4 -590/C:T, IFNgamma utr5644/A:T, IL-1beta +3962/C:T, IL-10 -1082/A:G), six cytokine diplotypes, four cytokine haplotypes, and four cytokine alleles were found. We concluded that several cytokine polymorphisms are protective, or susceptible associated with BA in population of Macedonians. PMID:18780949


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BACKGROUND: Related to exercise hypothesis, the aim of the present study was to explore the influence of physical activity on asthma and allergic rhinitis in a developing country where publicity campaigns about the benefits of exercise are scarce. METHODS: The analysed data were self-reported and obtained through the standardized International Study of Asthma and Allergies in Childhood Phase Three written questionnaires completed by 3026 adolescents 13/14 year old in Skopje (Republic of Macedonia). Vigorous physical activity and television-watching time both unadjusted and adjusted for confounding factors were used as variables for analysis. Odds ratios (OR, 95 % CI) in binary logistic regression were employed for statistic analysis of the data. RESULTS: Vigorous physical activity both > or = 3 times and 1-2 times per week was associated with an increased risk of current wheeze (aOR: 1.66; 1.08-2.55; p = 0.020 and aOR: 1.70; 1.23-2.36; p = 0.001, respectively), speech-limiting wheeze (aOR: 3.15; 1.13-8.77; p = 0.028 and aOR: 4.62; 2.22-9.62; p = 0.000, respectively) and exercise-induced wheeze (aOR: 2.72; 1.93-3.83; p = 0.000 and aOR: 4.01; 3.12-5.14; p = 0.000, respectively). Frequent physical activity was positively associated only with current allergic rhinitis symptoms (aOR: 1.40; 1.04-1.90; p = 0.029). Television watching > or = 3 hours a day increased the risk of current wheeze (aOR: 3.15; 1.13-8.77; p = 0.028 and aOR: 4.62; 2.22-9.62; p = 0.000, respectively) and exercise-induced wheeze (aOR: 2.72; 1.93-3.83; p = 0.000 and aOR: 4.01; 3.12-5.14; p = 0.000, respectively). Frequent physical activity was positively associated only with current allergic rhinitis symptoms (aOR: 1.40; 1.04-1.90; p = 0.029). Television watching > or = 3 hours a day increased the risk of current wheeze (aOR: 1.34; 1.01-1.77; p = 0.042) and exercise-induced wheeze (aOR: 1.32; 1.05-1.65; p = 0.016). CONCLUSION: The
findings support the aggravating role of sedentary regimen and poor physical fitness on asthma symptoms, but not on allergic rhinitis. Physical activity may trigger asthma symptoms when physical fitness is poor and asthma is not controlled. PMID:19080795


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A method of determination of Co, Cu, Pb and Ni in nanogram quantities from aragonite is presented. Flotation and extraction of Co, Cu, Pb and Ni is suggested as methods for elimination matrix interferences of calcium. The method of flotation is performed by iron(III) hexamethylenedithiocarbamate, Fe(HMDTC)(3), as a colloid precipitate collector. The liquid-liquid extraction of Co, Cu, Pb and Ni is carried out by sodium diethyldithiocarbamate, NaDDTC, as complexing reagent into methylisobutyl ketone, MIBK. The electrothermal atomic absorption spectrometry (ETAAS) is used for determination of analytes. The detection limits of ETAAS followed by flotation are: 7.8 ng.g(-1) for Co, 17.1 ng.g(-1) for Cu, 7.2 ng.g(-1) for Pb and 9.0 mug.g(-1) for Ni. The detection limits of ETAAS followed by extraction are found to be: 12.0 ng.g(-1) for Co, 51.0 ng.g(-1) for Cu, 24.0 ng.g(-1) for Pb and 21.0 ng.g(-1) for Ni. PMID:18968235