

## International publications of authors from Bosnia and Herzegovina in Current Contents indexed publications in 2008

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**1. Imamović G, Batuman V, Sinanović O, Trnačević S, Mesić E, Zerem E, Osmanović E. Microalbuminuria as a possible marker of risk of Balkan endemic nephropathy. *Nephrology (Carlton)*. 2008;13(7):616-21.**

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AIM: To evaluate whether microalbuminuria could be a marker of early tubular damage in individuals at risk of developing Balkan endemic nephropathy (BEN). METHODS: A cross-sectional study was used to determine urinary albumin-to-creatinine ratio (UACR) in a test group of 61 participants from a BEN endemic region and control group of 64 participants from a nearby non-endemic region, both recruited from the general population of Bosnia and Herzegovina. The correlation between UACR and urinary b2 microglobulin-to-creatinine ratio (UBCR) and the receiver operating characteristic curve for UACR were analyzed in the test groups of 58 participants. The correlation analysis was also performed in a subset of nine subjects with elevated UBCR. RESULTS: Medians, interquartile ranges and confidence intervals (CI) for medians of UACR in the test and control groups were 2 mg/mmol, 0.975-8.247 mg/mmol, 1.3472-3.2691 mg/mmol and 1 mg/mmol, 0.695-1.41 mg/mmol, 0.8466-1.2053 mg/mmol, respectively (P = 0.0001). Microalbuminuria was found in 30 of the 61 examinees in the test group, in contrast to six of the 64 examinees in the controls (P < 0.0001). Participants from the endemic region had 9.3 times the odds of having microalbuminuria in contrast to participants from the

non-endemic region. Pearson's correlation coefficients r of the log-transformed ratios and Kendall-tau coefficients of rank correlation in the group of 58 and in a subset of nine subjects with elevated UBCR were: 0.55 (P < 0.0001); 0.317 (P = 0.0005) and 0.59 (P = 0.045); 0.48 (P = 0.037), respectively. The area under the curve for UACR was 0.882 (P = 0.0001), sensitivity 100% and specificity 67.3%. CONCLUSION: Microalbuminuria may be a useful marker of early tubular injury in individuals at risk of developing BEN.

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**2. Martinović Z, Valjan V, Kvesić A, Kristo B, Vuckov S, Bakula B. War surgical care--experience from Franciscan Hospital "dr. fra Mato Nikolić" in Nova Bila during conflict in Central Bosnia (1993-1994). *Coll Antropol*. 2008 ;32(4):1221-7.**

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This report presents experience in treatment of war injuries in Franciscan hospital "dr. fra Mato Nikolić" in Nova Bila, during the war in Central Bosnia from 1993 to 1994, in conditions of encirclement and typhoid fever outbreak. Descriptive-retrospective analysis of organization, implementation and outcomes of surgical care for patients treated from January 1, 1993 till August 20, 1994. In this period, the hospital took care of 2500 wounded persons, 2286 (91.4%) of them male and 214 (8.6%) female, their the average age being 31.5 +/- 12.8. There were 1412 gunshot injuries (56.5%), 1022 explosive injuries (40.9%), and 66 blunt injuries (2.6%). There were 1250 injuries to extremities (50.0%), 349 injuries to head and neck (14%), 233 chest injuries (9.3%) and 193 injuries to abdomen

(7.7%). There were also 475 multiple injuries (19%). Surgical operations were performed in 1498 patients (60%), with surgical mortality rate of 4.5%. Total hospital mortality rate was 11.4 percent (n = 286). Despite extremely difficult conditions of work and lack of doctors, we achieved a low hospital mortality rate. The hospital continued to work after the war. Today, it is a modern health institution in Lasva Valley, Central Bosnia.

**3. Huskić J, Mulabegović N, Alendar F, Ostojić L, Ostojić Z, Simić D, Milicević R, Naletilić M. Serum and tissue angiotensin converting enzyme in patients with psoriasis. Coll Antropol. 2008;32(4):1215-9.**

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Recent evidence suggests that the angiotensin converting enzyme (ACE) is present in skin. The real value of the determination of ACE activity as a clinical-biochemistry test for the diagnosis of psoriasis has not been attained. Serum and tissue ACE were measured in 60 patients with psoriasis, 20 patients with lichen planus, 20 patients with seborrheic dermatitis and in 20 healthy individuals. The serum and tissue ACE activity was determined before and after therapy, using the spectrophotometric method and hippuryl-l-histidyl-l-leucine as a substrate. The results showed that serum ACE activity before therapy was significantly increased in both groups--patients with psoriasis ( $p < 0.001$ ) and patients with lichen planus ( $p < 0.001$ ) in comparison to healthy individuals. However, there were no significant differences in serum ACE activity among patients with seborrheic dermatitis and healthy individuals. After therapy, serum ACE activity significantly decreased in both groups of patients with psoriasis and patients with lichen planus comparing it to the level found in the control group. The values in both were similar. The tissue ACE activity in altered skin was significantly increased only in the patients with psoriasis in comparison to uninvolved skin of these patients, as well as the skin of healthy individuals. After therapy, there were no significant differences in tissue ACE activity between the treated skin and the healthy skin. In conclusion, determination of tissue angiotensin converting enzyme activity can be used in the differential diagnostic of indistinct clinical forms of psoriasis.

**4. Novo A, Jokić I. Medical audit of diabetes mellitus in primary care setting in Bosnia and Herzegovina. Croat Med J. 2008;49(6):757-62.**

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AIM: To assess the quality of diabetes care provided by family medicine teams in primary health centers in Bosnia and Herzegovina (BH) through a medical audit, addressing the extent to which clinical practice complied with pre-determined explicit criteria of long-term management. METHOD: Retrospective analysis included randomly selected medical records of patients with type 1 or 2 diabetes mellitus treated by 18 family medicine teams at 5 locations in BH, included in the Canadian International Development Agency/World Health Organization project "Strengthening health care systems in BH with focus on primary health care/family medicine model." Audit record form contained 24 questions on sex, age, diabetes type, body mass index (BMI), hypertension, family anamnesis, annual examinations (HbA1C, BMI, lipid profile or total cholesterol, blood creatinine, neurological examination, urinalysis for albuminuria, foot care, and examination of ocular fundus), smoking habits, alcohol consumption, patient education, prescribed insulin and other drugs, and patient's health care-seeking behavior. Standardized and record forms were returned anonymously with 99.3% response rate. RESULTS: Records of 536 patients with diabetes were analyzed (64% women and 87% patients with diabetes mellitus type 2). Family medicine teams showed poor compliance with established criteria for diabetes control. Metabolic control (69.5%) was acceptable, but the level of monitoring complications of diabetes (foot and ocular fundus examined in 53.4% and 53% of patients, respectively) was low. There were also considerable variations in diabetes management between different centers as well as between the teams in the same center. CONCLUSION: The audit revealed deficiencies in the quality of diabetes care and variations in care provision between primary care teams. Clinical guidelines and continuing education about acceptable diabetes care should be developed and implemented in BH.

**5. Muratbegović A, Zukanović A, Marković N. Molar-incisor-hypomineralisation impact on developmental defects of enamel prevalence in a low fluoridated area. Eur Arch Paediatr Dent. 2008;9(4):228-31.**

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AIM: This was to study the impact of molar-incisor-hypomineralisations on developmental defects of enamel (DDE) prevalence. Additionally, to present the prevalence of DDE and molar-incisor-hypomineralisations (MIH) in 12-year old children in Bosnia and Herzegovina (BH) who live in an area with low

natural fluoride content in the drinking water (less than 0.1 ppm). **METHODS:** As a part of the oral health study of 12-year-olds, information about DDE and MIH were collected from a random sample of 560 children. To study the impact of MIH on DDE, a secondary database was developed to determine if and to what extent did MIH affect epidemiological parameters of DDE. The analyses focused on differences in DDE values between the main sample and sub-sample of participants in which those diagnosed with both MIH and DDE were excluded. Research results were analysed using percentages, arithmetic mean value, standard deviation and linear regression. **RESULTS:** In the main sample MIH prevalence was 12.3%. The DDE prevalence was 32.8% with the highest frequency being demarcated opacities. DDE prevalence, calculated without MIH examinees, was 21.4%. A strong positive correlation was found between MIH and DDE prevalence in different geographic locations ( $r=0.9$ ,  $p=0.0008$ ). **CONCLUSIONS:** Molar-incisor-hypomineralisation prevalence has a strong positive correlation with prevalence of developmental defects of enamel. Prevalence of DDE after excluding MIH examinees fell from 32.8% to 21.4%, which was a noticeable difference. Separate registration of these two conditions should be considered.

**6. Marjanović D, Pojskić N, Kapur L, Haverić S, Durmić-Pasić A, Bajrović K, Hadziselimović R. Overview of human population-genetic studies in Bosnia and Herzegovina during the last three centuries: history and prospective. Coll Antropol. 2008;32(3):981-7.**

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Modern Bosnia and Herzegovina is a multi-ethnic and multi-religion country, with a very stormy history. Certain archaeological findings indicate continuous population of its territory since the Paleolithic. In time, vast number of different factors jointly influenced fascinating diversity of local human populations. A great number of small, more or less isolated, indigenous populations, make this area quite attractive for population-genetic surveys of different levels and approaches. Austro-Hungarian military physicians conducted the very first known bio-anthropological analyses of Bosnia-Herzegovina population at the end of the 19th century. Thus, the first step towards resolving the genetic structures of local B&H human populations was made. The studies that followed (conducted throughout most of the 20th century) were primarily based on the observation of various phenotypic traits. This stage was followed by the examination of various cytogenetic and fundamental DNA based mo-

lecular markers. The efforts undertaken over the last three centuries revealed "human genetic treasure" in Bosnia and Herzegovina. However, even now, after all the studies that were conducted, many interesting features remain to be discovered and described within the existing local human populations.

**7. Biscević M, Ljuca F, Biscević A, Gavrankapetanović I, Smrke BU, Ozturk C, Smrke D. Morphometric alteration of femoral condyles due to knee osteoarthritis. Coll Antropol. 2008;32(3):875-9.**

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Aim of this study was to estimate how knee osteoarthritis (OA) affects the shape of femoral condyles by comparing the radiuses of condylar curves between healthy and OA knees. Seventeen female and five male patients with established diagnosis of knee OA were included in the study. Radiuses of medial and lateral condylar curves were calculated from the side view knee X-ray by original mathematical equation and compared to referent values of healthy knees, after adjusting to body height. The average radiuses of condylar curves were between 52.6 +/- 6.2 and 17.6 +/- 3.5 mm medially, and between 43.3 +/- 8.4 and 15.4 +/- 3.7 mm laterally for 0 degrees and 90 degrees femoral flexion contact points, respectively. The OA knees had longer curve radiuses medially and laterally at 0 degrees, 10 degrees, and 20 degrees femoral flexion contact points in comparison to the healthy sample ( $P < 0.001$ ; t-test). Our results suggest that the shape of the femoral condyles in OA knees is changed. It should be aware not only in researching of OA etiology, but also in designing of knee endoprostheses, in a manner to achieve better individual sizing.

**8. Prohić A, Alendar F, Simić D, Mašić I. The first dermatovenerologic institution in Bosnia and Herzegovina. Arch Dermatol. 2008;144(10):1366.**

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**9. Tomić M, Galesić K, Markota I. Endothelin-1 and nitric oxide in patients on chronic hemodialysis. Ren Fail. 2008;30(9):836-42.**

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**AIM:** To establish the role of endothelin-1 and nitric oxide in the pathogenesis of hypertension in patients

on chronic hemodialysis by correlating endothelin-1 and NO plasma concentrations to the level of arterial hypertension with respect to angiotensin-converting enzyme (ACE) inhibitor therapy. **METHODS:** We determined plasma concentrations of endothelin-1 and NO in patients on chronic hemodialysis (CHD) before and after hemodialysis treatment. The study included 30 CHD patients and 20 healthy participants as controls. Correlation to blood pressure was determined, as well as the effect of ACE inhibitors on the relationship between both endothelin-1 and NO in correlation with arterial hypertension. **MAIN FINDINGS:** Endothelin-1 plasma concentration was significantly higher in CHD patients before hemodialysis treatment than in healthy controls. Endothelin-1 plasma concentration was also significantly higher in CHD patients after hemodialysis than in healthy controls. There was a significant decrease in endothelin-1 plasma concentration after hemodialysis in comparison with its values before hemodialysis. In CHD patients, a positive correlation was found between endothelin-1 plasma concentration and systolic blood pressure after hemodialysis, irrespective of ACE inhibitors therapy. In CHD patients taking ACE inhibitors, systolic blood pressure increased with increasing endothelin-1 plasma concentration before as well as after hemodialysis. In patients taking ACE inhibitors, there was a tendency for diastolic blood pressure to increase with an increase in endothelin-1 plasma concentration after hemodialysis and to decrease with an increase in NO plasma concentration. **CONCLUSION:** NO and endothelin-1 play a significant role in etiology of the hemodynamic changes of blood pressure during the dialysis.

**10. Zukanović A, Muratbegović A, Kobaslija S, Marković N, Ganibegović M, Beslagić E. Relationships between socioeconomic backgrounds, caries associated microflora and caries experience in 12-year-olds in Bosnia and Herzegovina in 2004. Eur J Paediatr Dent. 2008;9(3):118-24.**

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**AIM:** To present the prevalence of dental caries in Bosnia and Herzegovina (BH), to estimate the levels of salivary mutans streptococci and lactobacilli and compare them with caries prevalence in 12-years-old children from different socioeconomic backgrounds. **STUDY DESIGN AND METHODS:** A survey was carried out in 8 cantons of the Federation of BH (FBH) and in Republic Srpska (RS) in 2004. The final sample included 560 12-year-olds. The clinical examinations focused on dental status, expressed as DMFT index,

and they were carried out by one examiner, following WHO standard methodologies. Additionally, the study involved 109 12-years old children from Sarajevo, divided in three groups, based on their socioeconomic background. For measuring lactobacillus and mutans streptococci (MS) count in saliva Dentocult LB and Dentocult SM-Strip Mutans were used. Levels of MS and lactobacilli were expressed as a score between 0 and 3, indicating very low to very high levels of SM and lactobacilli. **RESULTS:** The average DMFT of the 12-year-olds was 4.16+/-2.92. On average, 91% of the 12-year-olds were affected with dental caries. The SiC Index was 7.41+/-3.31. Investigating the relationship between caries associated microflora and caries experience in children of different socioeconomic status showed the following: significant difference in caries prevalence was found in children with different living conditions, where children with high socioeconomic status had better oral health compared to the other two groups. For mutans streptococci, 25.7% of the children had mutans class 0, 24.8% class 1, 34.9% class 2 and 14.6% class 3. The mean DMFT for mutans class 0 was 3.50, for class 1 was 4.30, for class 2 was 5.62 and for class 3 was 6.0. For lactobacilli, 38.5% of the children had lactobacilli class 0, 25.7% class 1, 23.9% class 2 and 11.9% class 3. The mean DMFT for lactobacilli class 0 was 4.3, for class 1 was 4.9, for class 2 was 4.8 and for class 3 was 6.0. No significant differences in the level of mutans streptococci and lactobacilli were found between the groups. **CONCLUSION:** There is moderate caries prevalence among BH 12-year-olds (DMFT 4.16+/-2.92). Caries experience varies between children with different living condition but no relation between levels of salivary mutans streptococci and lactobacilli and socioeconomic status of children could be found.

**11. Curić I, Curić S, Bagarić I, Bradarć N. Alimentary infections during war conditions: Mostar and Tomislavgrad, Bosnia and Herzegovina, 1992-1995. Coll Antropol. 2008;32(2):571-5.**

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The aim of this study was to assess the outcome of sanitary and epidemiologic measures undertaken in relation to alimentary infections in the military corps of the Croatian Defense Council (Hrvatsko vjeće obrane) and civilian population in Mostar and Tomislavgrad regions during the 1992-1995 War in Bosnia and Herzegovina. A total of 25 (4.8%) of soldiers and 7 (7.1%) of non-military personnel were not being granted medical clearance to be employed in the food

provision services. We recorded a total of 68 alimentary infections cases in military personnel (with an incidence of 536.2 per 100,000 persons), and 436 in civilian population (573.9 per 100,000 person), without significant difference between them ( $p=0.647$ ). We did not record any alimentary infection outbreak in the military personnel, while two smaller epidemics of the abdominal typhus were recorded among civilian populations, but without lethal outcomes. The results of this study suggest that even the most basic adherence to the principle of standard sanitary and epidemiologic preventive measures may substantially reduce the probability of alimentary infections outbreaks, even in the highly disruptive, warfare environment.

**12. Džubur Kulenović A, Kučkalić A, Malec D. Changes in plasma lipid concentrations and risk of coronary artery disease in army veterans suffering from chronic posttraumatic stress disorder. *Croat Med J.* 2008;49(4):506-14.**

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AIM: To test the differences in serum lipid concentrations between veterans with chronic posttraumatic stress disorder (PTSD) and veterans without PTSD. METHODS: We determined plasma lipid parameters and calculated risk factors for 50 veterans in the PTSD group and 50 veterans in the non-PTSD group. Trauma exposure, coping strategies, and quality of life were assessed with Life Stressor List, Manchester Short Assessment of Quality of Life Scale, and Folkman-Lazarus Coping Strategies Questionnaire. RESULTS: There was no difference between the groups in the exposure to combat trauma. PTSD group had significantly lower education than non-PTSD group (10.6 $\pm$ 1.8 vs 12.4 $\pm$ 2.6 years,  $P=0.007$ ) and lower monthly income per family member (euro67.8 $\pm$ 51.3 vs euro281.9 $\pm$ 208.2,  $P<0.001$ ). PTSD group had significantly higher levels of all plasma lipid parameters (cholesterol: 6.54 $\pm$ 1.24 vs 5.40 $\pm$ 1.09 mmol/L,  $P<0.001$ ; triglycerides: 2.55 $\pm$ 0.68 vs 1.73 $\pm$ 0.77 mmol/L,  $P<0.001$ ; very low density lipoprotein-cholesterol: 1.14 $\pm$ 0.32 vs 0.78 $\pm$ 0.35 mmol/L,  $P<0.001$ ; low density lipoprotein-cholesterol: 4.49 $\pm$ 1.06 vs 3.46 $\pm$ 0.93 mmol/L,  $P<0.001$ ). High-density lipoprotein cholesterol concentration was significantly lower in PTSD group (0.96 $\pm$ 0.18 vs 1.15 $\pm$ 0.24 mmol/L,  $P<0.001$ ). Established risk factor for arteriosclerosis (6.96 $\pm$ 1.19 vs 4.71 $\pm$ 0.88,  $P<0.001$ ) and Adult Treatment Panel III ten years risk for coronary disease (19.44 $\pm$ 7.27% vs 9.74 $\pm$ 4.10%,  $P<0.001$ ) were significantly higher in the PTSD group. Secondary traumatization was significantly more frequent in the PTSD group (3.8 $\pm$ 5.7 vs 1.3 $\pm$ 4.7 events;  $P<0.001$ ).

CONCLUSIONS: Chronic PTSD is associated with dyslipidemia, leading to an increased risk of coronary artery disease. Environmental factors and coping strategies should be considered as important factors for the occurrence and persistence of PTSD.

**13. Klarić M, Francisković T, Klarić B, Kvesić A, Kastelan A, Graovac M, Lisica ID. Psychological problems in children of war veterans with posttraumatic stress disorder in Bosnia and Herzegovina: cross-sectional study. *Croat Med J.* 2008;49(4):491-8.**

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AIM: To assess psychological problems in children as reported by their veteran fathers with war-related posttraumatic stress disorder (PTSD). METHOD: The study group consisted of 154 veterans with war-related PTSD who were treated at the Mostar University Hospital. The control group consisted of 77 veterans without war-related PTSD who were selected from veteran associations by the snowball method. General Demographic Questionnaire, the first and fourth module of the Harvard Trauma Questionnaire-Bosnia and Herzegovina version, and the Questionnaire on Developmental, Emotional, and Behavioral Problems in Children, created specifically for the needs of this study, were used to collect data on veterans' perception of psychological problems in their children. RESULTS: In comparison with veterans without PTSD, veterans with PTSD reported significantly more developmental (odds ratio [OR], 2.37; 95% confidence interval [CI], 1.51-3.73), behavioral (OR, 3.92; 95% CI, 1.53-10.03), and emotional problems (OR, 17.74; 95% CI, 2.40-131.10) in their children. CONCLUSION: Veterans with war-related PTSD more often reported developmental problems in their children. Father's PTSD may have long-term and long-lasting consequences on the child's personality.

**14. Radončić F, Hudić I, Balić A, Fatusić Z. Perinatal outcomes during 1986-2005 in Tuzla Canton, Bosnia and Herzegovina. *J Matern Fetal Neonatal Med.* 2008;21(8):567-72.**

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AIM: To determine the incidence rate and causes of perinatal mortality and make a comparison between the incidence rate and causes of perinatal mortality in

the prewar (1986-1991), war (1992-1995) and postwar (1996-2005) periods in Tuzla Canton, Bosnia and Herzegovina. **METHODS:** We retrospectively collected data from the databases of University Department for Gynecology and Obstetrics Tuzla. Data on the number of live births, stillbirths, early neonatal deaths, causes of death, gestational age and birth weights were collected. **RESULTS:** There were 101712 deliveries all together in the above mentioned period, out of which 101638 resulted in liveborn children. Perinatal mortality gradually declines in the period of 1986-2000. The decline owns mostly to early neonatal mortality more than to fetal which also shows the trend of decrease. Statistically significant difference in perinatal mortality was found between period 2001-2005 and another analysed periods, and the most difference was found between 1991-1995 and 1996-2000 ( $p < 0.01$ ). Statistically significant difference in fetal mortality was found between period 2001-2005 and 1986-1990. Statistically significant difference in early neonatal mortality was found between period 2001-2005 and 1986-1990 ( $p = 0.005$ ;  $p < 0.005$ ). **CONCLUSION:** Perinatal mortality in Tuzla Canton were significant higher during the war, mainly due to lower adequacy and accessibility of perinatal health care. During the peace period a significant decline of perinatal mortality is registered, due to early neonatal death.

**15. Pavlović-Čalić N, Salkić NN, Gegić A, Smajić M, Alibegović E. Crohn's disease in Tuzla region of Bosnia and Herzegovina: a 12-year study (1995-2006). Int J Colorectal Dis. 2008;23(10):957-64.**

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**BACKGROUND:** Bosnia and Herzegovina (B&H) is one of the Eastern European countries with lacking data on Crohn's disease (CD) epidemiology. **GOAL:** We aimed to assess incidence of CD in Tuzla Canton of B&H during a 12-year period (1995-2006). **METHODS:** We retrospectively evaluated hospital records of both CD inpatients and outpatients residing in Tuzla Canton of B&H (total of 496,280 inhabitants) between 1995 and 2006. Patient that satisfied previously described criteria were included in the study. Incidence rates were calculated with age standardisation using European standard population. Trends in incidence were evaluated as moving 3-year averages. **RESULTS:** During the observed period, 140 patients met the diagnostic criteria for CD. Mean annual incidence was found to be 2.3/10(5) (95% CI=1.6-3.0) inhabitants ranging from 0.20 to 6.45 per 10(5). Mean annual crude incidence during the last 5 years of study (2002-2006) was 4.15/10(5) (95% CI=3.35-4.95). The prevalence of CD, at the end of the observed period

was found to be 28.2/10(5) (95% CI=23.5-32.9). CD incidence increased dramatically from 0.27/10(5) in 1995-1997 to 4.84/10(5) in 2004-2006, as well as did the number of colonoscopies performed; from 29 in 1995 to 850 in 2006. We observed almost constant trend of around three new cases of CD per 100 colonoscopies performed. **CONCLUSIONS:** (1) Our area is the region of moderate incidence of CD with the trend that remains toward continuing increase in the rates of CD, which is most likely a direct consequence of the growing number of performed colonoscopies. (2) We believe that in the future years, CD incidence in our region will probably further increase and stabilise at a level of around five cases per 10(5) inhabitants.

**16. Šapčanin A, Sofić E, Tahirović I, Salković-Petrišić M, Hoyer S, Riederer P. Antioxidant capacity in rat brain after intracerebroventricular treatment with streptozotocin and alloxan-a preliminary study. Neurotox Res. 2008;13(2):97-104.**

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Intracerebroventricular (icv) administration of beta-cytotoxic drug streptozotocin (STZ) produces long-term and progressive cognitive deficits in rats, as well as deficits in cerebral glucose and energy metabolism. These changes resemble those found in the brain of patients with sporadic Alzheimer's disease (sAD), and therefore, STZ-icv treated rats have been proposed as an experimental model of sAD. In this study the antioxidant capacity (AC), using manual oxygen radical absorbance capacity (ORAC) assay, was measured in the rat brain frontoparietal cortex (FC) and brainstem-cerebellum region (BS-CB) after administration of STZ and another betacytotoxic drug alloxan (AL). Region-specific differences of AC were found, which were more expressed when hydroxyl radical (ORAC(-OHO)) generator was used in the assay. AC against ORAC(-OHO) was significantly lower in BS-CB than in FC of the control rats. Furthermore, ORAC(-OHO) significantly decreased in BS-CB 3-months following the icv administration of AL, but significantly increased following the TG+AL combined treatment in comparison with the controls. However, 3-months following the icv treatment of AL combination with a different glucose transport inhibitor, 3-O-methyl-D-glucose, ORAC(-OHO) values in BS-CB and ORAC(-ROOo) values in FC were significantly decreased in comparison to the controls. Our results suggest that betacytotoxic-icv treatment alters antioxidant defense systems in the brain, which particularly regarding the STZ-icv treatment, could be a useful tool in search for possible new antioxidant treatments of the neurodegenerative disorders such as sAD.

**17. Sesar K, Živčić-Bećirević I, Sesar D. Multi-type maltreatment in childhood and psychological adjustment in adolescence: questionnaire study among adolescents in Western Herzegovina Canton. Croat Med J. 2008;49(2):243-56.**

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AIM: To determine the prevalence and intercorrelation of different forms of childhood maltreatment and psychological problems in adolescents in Western Herzegovina Canton. METHOD: A questionnaire study was conducted in March 2003 on a convenient sample of 458 third-grade high-school students (39% boys) aged between 15 and 20 (median age, 17). Data were collected using a sociodemographic questionnaire, Family Adaptability and Cohesion Evaluation Scales III, Child Maltreatment Questionnaire, Youth Self-Report, and Rosenberg Self-Esteem Scale. Sociodemographic and family characteristics and exposure to maltreatment were analyzed as possible predictors of exposure to a particular type of abuse and subsequent psychological adjustment problems. RESULTS: Out of 458 students, 77% were emotionally abused, 52% physically abused, 30% neglected, 20% witnessed family violence, and 13% of girls and 21% of boys were sexually abused before the age of 14. Significant association between the maltreatment by a mother, father, and other adults were found for emotional and physical abuse and for neglect and witnessing family violence ( $r=0.413-0.541$ ,  $P<0.001$  for all). Significant correlation was found between all forms of abuse ( $r=0.163-0.594$ ,  $P<0.05$ ), except between sexual abuse and witnessing family violence ( $r=0.048$ ,  $P=0.351$ ). Almost two-thirds of students were exposed to multi-type maltreatment in childhood. Family characteristics and maltreatment scores significantly predicted anxiety/depression ( $R=0.456$ ,  $R(2)=0.076$ ), withdrawal ( $R=0.389$ ,  $R(2)=0.049$ ), somatic complaints ( $R=0.437$ ,  $R(2)=0.059$ ), social problems ( $R=0.417$ ,  $R(2)=0.063$ ), attention deficit and hyperactivity disorder ( $R=0.368$ ,  $R(2)=0.045$ ), rule-breaking behavior ( $R=0.393$ ,  $R(2)=0.045$ ), aggression ( $R=0.437$ ,  $R(2)=0.078$ ) ( $P<0.001$  for all), as well as self-esteem ( $R=0.371$ ,  $R(2)=0.035$ ,  $P=0.003$ ). CONCLUSION: Most third-grade high-school students in Western Herzegovina Canton were exposed to multi-type maltreatment in childhood, regardless of the war experience. Emotional and physical abuse were most frequently combined forms of maltreatment. Sociodemographic and family characteristics and exposure to some forms of abuse were significant predictors of exposure to other forms of abuse. Exposure to mal-

treatment in childhood predicted difficulties in psychological adjustment in adolescence.

**18. Balić D, Latifagić A, Hudić I. Insulin-like growth factor-binding protein-1 (IGFBP-1) in cervical secretions as a predictor of preterm delivery. J Matern Fetal Neonatal Med. 2008;21(5):297-300.**

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OBJECTIVE: The objective of this study was to investigate the level of insulin-like growth factor-binding protein-1 (IGFBP-1) in cervical secretions and Bishop score as predictors of preterm delivery in asymptomatic pregnant women. METHODS: This was a prospective study at the Clinic for Gynecology and Obstetrics at the University Clinical Center in Tuzla, on a sample of 80 healthy pregnant women at between 24 and 34 gestational weeks. After interview every woman underwent IGFBP-1 concentration measurement by the 'Actim Partus' test. The Bishop score was determined by the author (A.L) during vaginal examination. Rates among groups were compared using arithmetic mean and standard deviation, Student's t-test, Mann-Witney U-test, and Spearman-Rank correlation test. Statistical importance was determined at the variation levels of 5% and 1%. RESULTS: Eight (10.00%) women in the study group had a positive Actim Partus test and six (7.50%) of them had a preterm delivery. The positive predictive value was 44.44% and negative predictive value was 98.59%. The specificity of the Bishop score in the study group was 83.78% and the sensitivity was 50.00%. The positive predictive value of the Bishop score in this group was 20.00% and the negative predictive value was 95.36%. There was no correlation between the Bishop score and Actim Partus test ( $p = 0.15$ ). CONCLUSIONS: If the concentration of IGFBP-1 is  $<10$  microg/L (negative Actim Partus test) in asymptomatic pregnant women, the risk of preterm delivery is low. The Actim Partus test could be used as a screening test for preterm delivery in asymptomatic pregnant women.

**19. Ceklić L, Mađar N, Neubauer AS. Optical coherence tomography fast versus regular macular thickness mapping in diabetic retinopathy. Ophthalmic Res. 2008;40(5):235-40.**

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OBJECTIVE: The purpose of the study was to investigate if absolute values and reproducibility of thickness

maps obtained from 2 optical coherence tomography (OCT) scanning protocols, regular high-resolution and fast low-density mode, differ in patients with diabetic macular edema. **METHODS:** A total of 26 consecutive patients undergoing fluorescein angiography and Stratus OCT scanning for the evaluation of diabetic macular edema at the Departments of Ophthalmology in Munich and Vienna were included. **RESULTS:** Retinal thickness of the central field of the thickness map measured by fast retinal thickness protocol was 287 +/- 97 and 290 +/- 113 microm by the regular protocol. This difference as well as that for all other fields was not statistically significant. Three times repeated measurements applying both OCT scanning modes in 10 patients yielded very good intrasession correlation coefficients between 0.70 and 0.99, with corresponding intrasession standard deviations ranging between 6 and 16  $\mu\text{m}$ . The fast mode yielded slightly less reproducible values than the regular mode. Visual acuity did not influence the results. **CONCLUSION:** In practice both scanning modes can be interchanged and absolute values can be compared directly. Best reproducibility is obtained with higher sampling density even in patients with reduced visual acuity due to diabetic macular edema. Copyright 2008 S. Karger AG, Basel.

**20. Zerem E, Imamović G, Omerović S. Symptomatic simple renal cyst: comparison of continuous negative-pressure catheter drainage and single-session alcohol sclerotherapy. AJR Am J Roentgenol. 2008;190(5):1193-7.**

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**OBJECTIVE:** The purpose of this study was to evaluate whether continuous percutaneous catheter drainage with negative pressure yields better results than single-session alcohol sclerotherapy in the management of symptomatic simple renal cysts. **SUBJECTS AND METHODS:** Eighty-five patients with 92 simple renal cysts were randomly assigned to two groups in a prospective controlled trial. One group was treated with sonographically guided continuous catheter drainage with negative pressure and the other group with single-session alcohol sclerotherapy. Patient demographics, clinical characteristics, treatment outcome, and complications were analyzed. **RESULTS:** The initial volume of the cysts did not differ significantly between the groups, but the final volume was significantly smaller in the continuous drainage group ( $p = 0.026$ ). During the 24-month follow-up period, 37 (40%) of the cysts disappeared completely: 24 (52%) of the 46 cysts in the drainage group and 13

(28%) of the 46 cysts in the sclerotherapy group ( $p = 0.033$ ). In the sclerotherapy group, the probability of disappearance of the cysts was highly dependent on cyst size, being less for giant cysts ( $p = 0.01$ ). Cyst size was not a significant factor in probability of disappearance in the drainage group ( $p = 0.15$ ). The probability of disappearance of giant cysts (volume > 500 mL) differed significantly between the groups ( $p = 0.009$ ), but there was no difference in probability of disappearance of moderately large cysts ( $p = 0.16$ ). Three of 14 patients with giant cysts in the drainage group and 10 of 13 such patients in the sclerotherapy group had recurrences that necessitated additional treatment ( $p = 0.007$ ). They were successfully treated with continuous catheter drainage. **CONCLUSION:** Continuous catheter drainage with negative pressure is more efficient than single-session alcohol sclerotherapy in the management of giant cysts. For moderately large cysts, the two methods have similar results.

**21. Šumanović-Glamuzina D, Čulo F, Čulo MI, Konjevoda P, Božić T, Robović A, Vuksić, I, Bilinovac Z, Kuzman Z. Vasodilatory prostaglandins in perinatal hypoxic brain damage. Coll Antropol. 2008;32 Suppl 1:183-7.**

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Prostaglandin (PGE2 and PGI2) synthesis was determined in the cerebrospinal fluid (CSF) and serum of 19 hypoxic neonates at the age of 5-96 hours by using Enzyme Linked Immunosorbent Assay (ELISA) method. Control group consisted of 8 children of the same age whose samples were taken due to initial suspicion of neonatal meningitis. The prostaglandin concentrations in CSF were correlated with initial hypoxic-ischemic encephalopathy (HIE) stage and neurological findings of patients at the age of 12 months. The values of PGE2 and PGI2 in the CSF of children with perinatal hypoxia (PNH) were significantly higher than in the children from the control group. The values of PGI2 in serum were significantly higher than in "CSF" of patients with PNH. Although average values of PGE2 and PGI2 in the liquor were higher in children with advanced stage of HIE, the differences between different stages were not statistically significant. We did not find any significant correlation between average concentrations of prostaglandins and neurological findings of the 12-month-old children.

**22. Prohić A. An epidemiological survey of tinea capitis in Sarajevo, Bosnia and Herzegovina over a 10-year period. Mycoses. 2008;51(2):161-4.**

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The aim of this study was to determine the incidence and aetiological agents of tinea capitis in Sarajevo area, Bosnia and Herzegovina, during a 10-year period (1997-2006). A total of 707 patients with suspected dermatophyte infections of scalp was analysed. Tinea capitis was determined in 241 (34.1%) of these patients, in whom causative agents were identified in 209 (29.6%). Zoophilic dermatophytes (91.8%) prevailed over anthropophilic (7.2%) and geophilic (1.0%) dermatophytes. *Microsporum canis* was the most frequent dermatophyte isolated (90.4%), followed by *Trichophyton schoenleinii* (2.4%) and *Trichophyton violaceum* (1.9%). The majority of infections occurred in males (56.5%) and in children with age less than 10 years (52.6%).

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**23. Zildžić M, Salkić N, Eminović I, Mesic D.  
Fractured rib as a foreign body of the colon.  
Gastrointest Endosc. 2008;67(1):186-8.**

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**24. Zerem E, Imamović G, Omerović S.  
Percutaneous treatment of symptomatic non-  
parasitic benign liver cysts: single-session alcohol  
sclerotherapy versus prolonged catheter drainage  
with negative pressure. Eur Radiol. 2008;18(2):400-6.**

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To evaluate whether prolonged catheter drainage with negative pressure yields better results than single-session alcohol sclerotherapy in the treatment of symptomatic non-parasitic benign liver cysts. Forty patients were randomly assigned to two groups in a 24-month prospective controlled trial. One group was treated with ultrasound-guided prolonged catheter drainage with negative pressure (20 patients with 24 cysts) and the other group with single-session alcohol sclerotherapy (20 patients with 23 cysts). Patient demographics, clinical characteristics, treatment outcome, and complications were analyzed. The median volumes and 95% CI (confidence interval) for the medians and interquartile ranges of all 47 cysts before treatment and on last follow-up were: 389 ml, 143-1,127 ml, 136-1,300 ml, and 0 ml, 0-10 ml, and 0-23 ml, respectively ( $P < 0.0001$ ). The average volume reduction was 92.4% (range, 74.9-100%), 94.2% (range, 74.9-100%) in the drainage and 90.2% (range, 76.9-100%) in the sclerotherapy group. Twenty-seven cysts (57.4%) disappeared completely, 16 (66.7%) in the drainage and 11 (47.8%) in the sclerotherapy group. No differences in average volume reduction, final volume and disappearance of the cysts between the groups were noted. The hospital stay was 1 day for all patients. Percutaneous treatment is safe and effective for hepatic non-parasitic cysts. Prolonged catheter drainage with negative pressure and single-session alcohol sclerotherapy had similar results.

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**25. Zerem E, Delibegović S. Professor Marusić  
placed his editorial board at disposal of  
postgraduate students of Tuzla University School  
of Medicine. Croat Med J. 2008;49(1):101.**

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