

International publications of authors from Bosnia and Herzegovina in Current Contents indexed publications in the first half of 2010

1. Babić D, Martinac M, Bjelanović V, Babić R, Sutović A, Sinanović O. Aggression in war veterans suffering from posttraumatic stress disorder with co-morbid alcoholism. Coll Antropol. 2010 Mar;34 Suppl 1:23-8.

Department of Psychiatry, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

For thousands of years it has been known that aggression as a symptom appears in numerous psychiatric disorders and diseases. During the last decade the appearance of the aggressive behavior related to the posttraumatic stress disorder (PTSD) has been frequently investigated, often associated with war trauma. The goal of this study is to analyze the impact of alcoholism on a way war veterans suffering from chronic PTSD express and control aggression. The sample included 240 war veterans with chronic PTSD. The subjects were divided in two groups. PTSD group (n=147) and controlled group composed of those suffering from alcoholism in addition to PTSD (n=93). In this study, the following psychological instruments were used: The Harvard trauma questionnaire for PTSD diagnosis (HTQ); the questionnaire for self-evaluation of aggression (STAXI); The Profile Index Emotion (PIE); questionnaire for auto-diagnosis of alcoholism (CAGE). The obtained results indicate that subjects who have PTSD with co-morbid alcoholism are more deprived, aggressive ($p < 0.001$) and oppositional ($p < 0.05$) in comparison to subjects whose PTSD is not combined with alcoholism (PIE). The aggression is statistically more expressed in subjects with PTSD who have also been diagnosed with alcoholism on all subscales in comparison to subjects with PTDS

who have not been diagnosed with alcoholism: the current state of aggression, the general state of aggression, aggression towards an unfair treatment, aggression directed inwards and outwards ($p < 0.001$); aggression towards nonspecific provocation and a general way of expressing aggression ($p < 0.05$) (STAXI). Subjects that had PTSD combined with alcoholism show a higher degree of aggression in comparison to subjects with PTDS who are not diagnosed with alcoholism.

2. Bašić B, Beganović A, Samek D, Skopljak-Beganović A, Gazdić-Šantić M. Ten years of monitoring the occupational radiation exposure in Bosnia and Herzegovina. Radiat Prot Dosimetry. 2010 Apr-May;139(1-3):400-2. Epub 2010 Feb 11.

Radiation Protection Centre of the Institute of Public Health of Federation of Bosnia and Herzegovina, M. Tita 9, Sarajevo, Bosnia and Herzegovina.

Monitoring of occupationally exposed persons in Bosnia and Herzegovina started in 1960s and it was interrupted in 1992. Dosimetry service resumed in 1999 when the International Atomic Energy Agency provided Harshaw 4500 TLD-reader and the first set of TLDs for the Radiation Protection Centre (RPC) of the Institute of Public Health of the Federation of Bosnia and Herzegovina. In January 2009, the RPC covered 1279 professionals with personal dosimetry, which is more than 70 % of all radiation workers in the country. Most of the TLD users work in medical institutions. In period 1999-2003 RPC provided 984 workers with dosimeters. In the next 5 y period (2004-2008), the number of persons covered by do-

simetry increased by an average of 51 %. The mean and collective effective dose in the period 1999-2003 were 1.55 mSv and 1.54 personSv, respectively. In the period 2004-2008, the mean doses changed by 1 % on average, but the collective effective dose increased by 53 % for all practices. Mean and collective effective dose were 1.57 mSv and 2.34 personSv, respectively. The highest personal doses are associated with industrial radiography, than exposures in nuclear medicine. Radiology plays a significant role in collective dose only, whereas other exposures are low. Results correspond to results found in the literature. New practices in industry and medicine emphasise the need for more personal dosimeters, as well as specialised dosimeters for extremities monitoring, etc.

3. Beganović A, Kulić M, Spužić M, Gazdić-Šantić M, Skopljak-Beganović A, Drljević A, Džanić S, Bašić B, Lincender L. Patient doses in interventional cardiology in Bosnia and Herzegovina: first results. Radiat Prot Dosimetry. 2010 Apr-May;139(1-3):254-7. Epub 2010 Mar 11.

Department of Medical Physics and Radiation Safety, Clinical Centre of Sarajevo University, Bolnicka 25, 71000 Sarajevo, Bosnia and Herzegovina.

Cardiologists at the Cardiac Centre of the Clinical Centre of Sarajevo University performed invasive cardiology procedures in one room equipped with a Siemens Coroskop (Siemens Healthcare, Erlangen, Germany) unit with the possibility of digital cine imaging. The number of procedures performed with this unit is 1126 per year. The number of adults performing only diagnostic procedures is 816, therapeutic procedures 62 and both diagnostic and therapeutic 228. Twenty diagnostic examinations but no therapeutic procedure are performed on children per year. The workload is increasing year by year, with an average increase of 26 % per year. The X-ray system does not have a kerma area product (KAP) meter installed; therefore an external KAP meter was mounted on the X-ray tube. Gafchromic dosimetry films (International Specialty Products, Wayne, USA) were placed under the patient to record the skin dose distribution. The peak skin dose (PSD) was calculated from the maximum optical density of the dosimetry films. Dose measurements were performed on 51 patients undergoing therapeutic procedures (percutaneous transluminal coronary angioplasty and stent placement). Two patients received doses (KAP) larger than 100 Gy \cdot cm². The PSD was higher than 1 Gy in 3 out of 16 evaluations, and one of these patients received a skin dose >2 Gy. No deterministic skin effects were recorded. The dosimetry results are similar to results reported in other countries. Invasive cardiac procedures deliver high doses to the skin that could cause deterministic effects

(erythema). Physicians performing these procedures should be aware of these risks. More efforts should be put into the training of cardiologists in radiation protection.

4. Curić I, Curić S, Nikolić J, Vasilj I. Public health services in Herzegovina region during 1992-1995 war. Coll Antropol. 2010 Mar;34 Suppl 1:321-4.

Clinic for Infectious Diseases, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to describe the situation and the development of Croatian Defense Council medical corps during the 1992-1995 war in Bosnia and Herzegovina. The paper provides an overview and describes the main events that lead to development of the medical care in the wartime conditions, with special emphasis on the public health system in Herzegovina region. This included the creation of three distinctive public health system settings: initial, integral and post-war period, all marked by certain specificities in organization and delivery of the public health and overall health care to both military and civilians. The knowledge and skills gathered during this period can be useful in situations that involve the need for fast public health actions, such as various natural disasters and disease outbreaks, and could be used for establishing highly mobile response public health teams. Furthermore, the experiences gathered during these periods may be useful during the planning phases of the health care reforms, all aiming to deliver the best possible health care to the entire population.

5. Čarapina M, Jurić M, Bubalo P, Leventić M. Myoepithelial carcinoma of the parotid gland. Coll Antropol. 2010 Mar;34 Suppl 1:283-6.

Clinical Institute of Pathology, Cytology and Forensic Medicine, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

Rare malignant tumor of the salivary gland, a myoepithelial carcinoma, arose de novo in the right parotid gland. The initial tumor was composed predominantly of myoepithelial cells. Subsequently the tumor recurred three times, with infiltration of the bones of the cranial base. Histological examination showed sarcomatoid neoplasm composed of malignant spindle cells with high mitotic rate and perineural invasion. There was no involvement of cervical lymph nodes. Immunohistochemistry demonstrated myoepithelial differentiation: tumor cells were positively stained with vimentin, alpha smooth muscle actin and S-100 protein antibodies, and focal positively was noticed with cytokeratin (AE1/AE3) antibody. Large number of tumor cells nuclei was reactive with the monoclonal anti-p63

antibody, clone 4A4. Myoepithelial carcinomas exhibit a wide spectrum of morphological heterogeneity and for that reason could be confused with many tumors. Cytoarchitectural patterns and immunohistochemical profile are crucial for identification. These tumors are malignant neoplasms with diverse clinical outcomes, sometimes very aggressive.

6. Ćavar M, Sekulić D, Čuljak Z. Complex Interaction of Religiousness with other Factors in Relation to Substance Use and Misuse Among Female Athletes. J Relig Health. 2010 May 6. [Epub ahead of print]

Faculty of Science, Mathematics and Education, University of Mostar, Mostar, 88000, Bosnia and Herzegovina.

Strength of religious faith (SRF) is rarely studied as a protective factor against substance use and misuse in sports. Herein, we studied the potential buffering effect of the complex socio-educational, sports, and religiousness factors in the protection against substance use and misuse, including cigarettes, analgesics, appetite suppressants, potential doping behavior, and binge drinking. The sample of subjects included 40 high-class female athletes (22-26 years of age). Using a strictly anonymous questionnaire, we investigated different social, educational, and sports factors (including SRF measured by the Santa Clara Strength of Religious Faith Questionnaire) in relation to substance use and misuse. Following the calculation of simple correlations, multiple regression analysis revealed that in combination with low sports experience, SRF has a significant buffering effect against binge alcohol drinking and consumption of appetite suppressants. The data are discussed in comparison with previous findings and theoretical background. Future studies should study the topic while observing samples of recreational and competitive athletes of both genders.

7. Đedićbegović J, Marjanović A, Šober M, Škrbo A, Sinanović K, Larssen T, Grung M, Fjeld E, Rognerud S. Levels of persistent organic pollutants in the Neretva River (Bosnia and Herzegovina) determined by deployment of semipermeable membrane devices (SPMD). J Environ Sci Health B. 2010 Feb;45(2):128-36.

University of Sarajevo, Sarajevo, Bosnia and Herzegovina.

The main objective of this study was to determine levels of certain persistent organic pollutants (POPs) in Neretva River, Bosnia and Herzegovina (BiH), which is currently facing implementation of the Stockholm Convention on persistent organic pollutants (POPs)

and environmental protection strategies. This is the very first report on the deployment of semipermeable membrane devices (SPMDs) in BiH. SPMDs were used for continuous 3-weeks sampling of POPs at three locations, covering 220 km long stream of the Neretva River. Water concentrations of polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs) and polybrominated diphenylethers (PBDEs) were calculated using performance reference compounds (PRCs). The total OCP concentrations ranged from 40 to 140 pg L⁻¹ and most of compounds were detected only in lower course of the river. Total PAH ranged from 160 to 4000 pg L⁻¹ and show a clear spatial variation. Dominant PAHs were phenanthrene, fluoranthene, fluorene and acenaphthene. Total PCB ranged from undetectable to 120 pg L⁻¹. From the group of 15 PBDE congeners investigated, only PBDE-47 and PBDE-99 were detected. Since the concentrations of broad spectrum of POPs found in the Neretva River are quite low, future actions should be focused on preservation rather than on sanitation measures. Regular monitoring should anyhow be established.

8. Fajkić A, Lepara O, Voráček M, Kapusta ND, Niederkrotenthaler T, Amiri L, Sonneck G, Dervić K. Child and adolescent suicides in Bosnia and Herzegovina before and after the war (1992-1995). Crisis. 2010;31(3):160-4.

Institute of Pathophysiology, Faculty of Medicine, University of Sarajevo, Sarajevo, Bosnia and Herzegovina.

BACKGROUND: Evidence on youth suicides from Southeastern Europe is scarce. We are not aware of previous reports from Bosnia and Herzegovina, which experienced war from 1992 to 1995. Durkheim's theory of suicide predicts decreased suicide rates in wartime and increased rates afterward. AIMS: To compare child and adolescent suicides in Bosnia and Herzegovina before and after the war. METHODS: Data on youth suicide for prewar (1986-90) and postwar (2002-06) periods were analyzed with respect to prevalence, sex and age differences, and suicide methods. Suicide data from 1991 through 2001 were not available. RESULTS: Overall youth suicide rates were one-third lower in the postwar than in the prewar period. This effect was most pronounced for girls, whose postwar suicide rates almost halved, and for 15-19-year-old boys, whose rates decreased by about a one-fourth. Suicides increased among boys aged 14 or younger. Firearm suicides almost doubled proportionally and were the predominant postwar method, while the most common prewar method had been hanging. CONCLUSIONS: The findings from this study indicate the need for public education in Bosnia and Herzegovina on the role of firearm accessibility

in youth suicide and for instructions on safe storage in households. Moreover, raising societal awareness about suicide risk factors and suicide prevention is needed.

9. Gazibegović-Busuladžić A, Milošević DB, Becker W, Bergues B, Hultgren H, Kiyani IY. Electron rescattering in above-threshold photodetachment of negative ions. Phys Rev Lett. 2010 Mar 12;104(10):103004. Epub 2010 Mar 12.

Faculty of Science, University of Sarajevo, Zmaja od Bosne 35, 71000 Sarajevo, Bosnia and Herzegovina.

We present experimental and theoretical results on photodetachment of Br(-) and F(-) in a strong infrared laser field. The observed photoelectron spectra of Br(-) exhibit a high-energy plateau along the laser polarization direction, which is identified as being due to the rescattering effect. The shape and the extension of the plateau is found to be influenced by the depletion of negative ions during the interaction with the laser pulse. Our findings represent the first observation of electron rescattering in above-threshold photodetachment of an atomic system with a short-range potential.

10. Goletić T, Gagić A, Rešidbegović E, Kustura A, Kavazović A, Savić V, Harder T, Starick E, Prašović S. Highly pathogenic avian influenza virus subtype H5N1 in mute swans (Cygnus olor) in Central Bosnia. Avian Dis. 2010 Mar;54(1 Suppl):496-501.

Sarajevo Veterinary Faculty, National Reference Laboratory for Avian Influenza and Newcastle Disease, Zmaja od Bosne 90, 71000 Sarajevo, Bosnia and Herzegovina.

In order to determine the actual prevalence of avian influenza viruses (AIVs) in wild birds in Bosnia and Herzegovina, extensive surveillance was carried out between October 2005 and April 2006. A total of 394 samples representing 41 bird species were examined for the presence of influenza A virus using virus isolation in embryonated chicken eggs, PCR, and nucleotide sequencing. AIV subtype H5N1 was detected in two mute swans (*Cygnus olor*). The isolates were determined to be highly pathogenic avian influenza (HPAI) virus and the hemagglutinin sequence was closely similar to A/*Cygnus olor*/Astrakhan/ Ast05-2-10/2005 (H5N1). This is the first report of HPAI subtype H5N1 in Bosnia and Herzegovina.

11. Hadžović E, Betz G, Hadžidedić Š, El-Arini SK, Leuenberger H. Roller compaction of different pseudopolymorphic forms of Theophylline: Effect on compressibility and tablet properties. Int J Pharm. 2010 Jun 19. [Epub ahead of print]

Industrial Pharmacy Lab, Department of Pharmaceutical Sciences, University of Basel, Klingelbergstr. 50, 4056 Basel, Switzerland; Bosnalijek d.d., Development Department, Jukićeva 53, 71000 Sarajevo, Bosnia and Herzegovina.

The effect of roller compaction on disintegration time, dissolution rate and compressibility of tablets prepared from Theophylline anhydrate powder, Theophylline anhydrate fine powder and Theophylline monohydrate was studied. In addition, the influence of adding microcrystalline cellulose, a commonly used excipient, in mixtures with these materials was investigated. Theophylline anhydrate powder was used as a model drug to investigate the influence of different compaction pressures on the tablet properties. Tablets with same porosity were prepared by direct compaction and by roller compaction/re-compaction. Compressibility was characterized by Heckel and modified Heckel equations. Due to the property of polymorphic materials to change their form during milling and compression, X-ray diffraction analysis of Theophylline anhydrate powder, Theophylline anhydrate fine powder and Theophylline monohydrate powders and granules was carried out. After roller compaction the disintegration time and the dissolution rate of the tablets were significantly improved. Compressibility of Theophylline anhydrate powder and Theophylline anhydrate fine powder was decreased, while Theophylline monohydrate showed higher compressibility after roller compaction. Microcrystalline cellulose affected compressibility of Theophylline anhydrate powder, Theophylline anhydrate fine powder and Theophylline monohydrate whereby the binary mixtures showed higher compressibility than the individual materials. X-ray diffraction analyses confirmed that there were no polymorphic/pseudopolymorphic changes after roller compaction.

12. Hudić I, Fatušić Z, Kamerić L, Mišić M, Šerak I, Latifagić A. Vaginal delivery after Misgav-Ladach cesarean section - Is the risk of uterine rupture acceptable? J Matern Fetal Neonatal Med. 2010 Jan 19. [Epub ahead of print]

Clinic of Gynecology and Obstetrics, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina.

Objective. To evaluate whether the single-layer closure as is a routine by the Misgav-Ladach method compared to the double-layer closure as used by the Dörfler cesarean method is associated with an increased risk of uterine rupture in the subsequent pregnancy and delivery. **Methods.** The analysis is retrospective and is based on medical documentation of the Clinic for Gynecology and Obstetrics, University Clinical Centre, Tuzla, Bosnia and Herzegovina. All patients with one previous cesarean section who at-

tempted vaginal birth following cesarean section were managed from 1 January 2002 to 31 December 2008. Exclusion criteria included multiple gestation, greater than one previous cesarean section, previous incision other than low transverse, gestational age at delivery less than 37 weeks and induction of delivery. We identified 448 patients who met inclusion criteria. Results. We found that 303 patients had a single-layer closure (Misgav-Ladach) and 145 had a double-layer closure (Dörffler) of the previous uterine incision. There were 35 cases of uterine rupture. Of those patients with previous single-layer closure, 5.28% (16/303) had a uterine rupture compared to 13.11% (19/145) in the double-layer closure group ($p < 0.05$). Conclusion. We have not found that a Misgav-Ladach cesarean section method (single-layer uterine closure) might be more likely to result in uterine rupture in women who attempted a vaginal birth after a previous cesarean delivery. This cesarean section method should find its confirmation in everyday clinical practice.

13. Ibralić I, Sinanović O, Memišević H. Age at menarche and premenstrual syndrome in adolescent girls with intellectual disability in Bosnia and Herzegovina. Res Dev Disabil. 2010 May-Jun;31(3):800-3. Epub 2010 Mar 6.

Center Vladimir Nazor, Sarajevo, Bosnia and Herzegovina.

The issues involving menstruation are the topic of many scientific inquiries in the fields of medicine, psychology, sociology and anthropology. The aim of this study was to determine the age at menarche and the most common symptoms of premenstrual syndrome (PMS) in adolescent girls with intellectual disability. The main method of data collection was through the use of a survey and an interview with the girls. The sample consisted of 31 adolescent girls with intellectual disability and 31 adolescent girls without intellectual disability serving as a control group. Both groups were between the ages of 14 and 18 years. The results of this study revealed higher variability of age at menarche in girls with intellectual disability compared to girls without intellectual disability. The symptoms of PMS were almost equally distributed in both groups of girls. Many girls with intellectual disability do not have enough knowledge about menstruation. More attention needs to be given to treating the symptoms of PMS and educating the girls in a school setting.

14. Ivanković A, Ravlija J, Škobić H, Vasilj I, Ivanković Z, Pejanović-Škobić N, Pavleković G. Health status of population in Federation of Bosnia and Herzegovina in 15 years of transitional period. Coll Antropol. 2010 Mar;34 Suppl 1:325-33.

Medical Faculty, University of Mostar, Mostar, Bosnia and Herzegovina.

War in Bosnia and Herzegovina lasted from 1991 to 1995 and resulted in profound consequences marked by the large number of victims, increase in the diseases and disorders prevalence, that were not common before it occurred. The effects it had on health status of the entire population was reflected through many negative demographic trends, increasing prevalence of chronic diseases and the spread of a number of unhealthy behavioral patterns and a lot of migrations. All this presents a problem for institutions of health system which are attempting to control these negative influences especially during the transition period, marked by the direct adverse consequences of the 1991-1995 war. The present paper presents a summation of various sources which are attempting to provide a synthetic overview and provide basic information in relation to the health status of the population, and also to provide a baseline evaluation for deployment of public health interventions.

15. Jurić M, Čarapina M, Gilja A, Šimić G. Knowledge, attitudes and behaviors of young people related to drinking and driving in Mostar region, Bosnia and Herzegovina. Coll Antropol. 2010 Mar;34 Suppl 1:39-44.

Department of Maxillofacial Surgery, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The traffic accidents became the leading cause of morbidity and mortality among young population groups during the late 60s and early 70s. Among several European countries that are in transition, Bosnia and Herzegovina takes the leading place in fatal traffic accidents. In this study we have investigated knowledge, attitudes and behavior of young people related to alcohol impaired driving. Our aim was to investigate the patterns and behavior among young people that could be useful for public health intervention among them. This is of special interest as there is a lack of such information from Bosnia and Herzegovina. The study was performed in the city of Mostar, Bosnia and Herzegovina. The study included 189 examinees of both genders, aged between 18 and 24 years, who have been divided in two groups: students of the University of Mostar and those who did not go for further education after high school (nonstudents). Sampling was performed in July 2006 in Mostar and surrounding area. The Gallup organization questionnaire was used. Descriptive statistic test and chi-square were used in statistical analysis. Result of this study could be helpful in taking preventive measures for lowering number of traffic accidents among young people or they could be base in some protective programs for increasing traffic safety.

16. Jurić M, Novaković J, Čarapina M, Knežević E. Treatment cost of patients with maxillofacial fractures at the University Hospital in Mostar 2002-2006. Coll Antropol. 2010 Mar;34 Suppl 1:199-203.

Department of Maxillofacial Surgery, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to establish the costs structure of medical treatment for the patients with maxillofacial fractures, to perform a treatment cost evaluation, describe the factors which considerably influence the costs and discover the ways of achieving financial savings in treated patients. The study group consisted of patients with maxillofacial fractures who were admitted and treated at the Department of Maxillofacial Surgery of the University Hospital Mostar in the period from January 2002 until December 2006. Data for the study were collected from the patients' databases, case histories and data obtained on the basis of individual payments for the treatment that was collected by Finance Department of the University Hospital of Mostar. Most patients in this study were men (83%), of average age 34 +/- 19 years. Zygomatic bone fracture was the commonest injury. Open surgical procedure was performed in 84.7% of treated cases. The costs for the open procedure were considerably higher than conservative treatment. Medication cost made up a total of 37.9% and cost of hospital accommodation 27.3% out of total hospital charge. Cost reduction in treated patients with maxillofacial fractures should be achieved through protocols of urgent treatment of maxillofacial trauma patients immediately after sustaining an injury and with earlier discharge of the patients when postoperative complications are not expected.

17. Klarić M, Frančišković T, Pernar M, Nemčić Moro I, Miličević R, Černi Obrdalj E, Salčin Satriano A. Caregiver burden and burnout in partners of war veterans with post-traumatic stress disorder. Coll Antropol. 2010 Mar;34 Suppl 1:15-21.

Department of Psychiatry, Faculty of Medicine, University of Mostar, Mostar, Bosnia and Herzegovina.

War veterans diagnosed with chronic post-traumatic stress disorder (PTSD) experience serious difficulties in social, professional and family life. Consequently, their wives often become indirect victims of their husbands' dysfunction. The purpose of this study was to assess the caregiver burden and burnout level in partners of veterans suffering from PTSD, especially in cases where partners suffer from their own PTSD symptoms. The experimental group consisted of 154 wives or partners of war veterans treated for

PTSD caused by the war trauma in University Hospital Mostar. The control group was made of 77 wives or partners of war veterans without PTSD. The study was based on the General Demographic Questionnaire, the Harvard Trauma Questionnaire, Bosnia-Herzegovina version, Caregiving and the Experience of Subjective and Objective Burden and the Maslach Burnout Inventory. The wives of PTSD affected veterans scored significantly higher in all subscales of the Caregiver Burden Questionnaire and the Burnout Inventory. The results indicated that subjective demand burden, subjective stress and burnout were significantly higher in relationships in which both partners suffer from PTSD compared to couples in which only the veteran suffers from PTSD and couples in which none of the partners has PTSD. Living with a veteran diagnosed with PTSD places a heavy burden on the wife and poses a serious risk of burnout, which has to be taken into account in treatment planning.

18. Klupka-Sarić I, Galić M. Epidemiology of multiple sclerosis in western Herzegovina and Herzegovina--Neretva Canton, Bosnia and Herzegovina. Coll Antropol. 2010 Mar;34 Suppl 1:189-93.

Department of Neurology, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to investigate the selected indicators of multiple sclerosis (MS) in Herzegovina (Western Herzegovina Canton and Herzegovina-Neretva Canton). By using all available health and medical sources in the studied area and using McDonald's criteria, a total of 96 patients were identified in the period from 1996 to 2006. Results of the study show that the crude prevalence of MS was 30.99/100,000 (95% confidence interval [CIC 24.8-37.2]), the highest one in the municipality of Posusje (49.6/100,000) and the lowest one in the municipalities of Neum and Ravno (no recorded cases); the female/male ratio was 1.5; the mean age of the patients on the prevalence day was 41.4 +/- 10.2 years and the mean age at the disease onset was 30.7 +/- 6.4 years; the most often clinical course of the disease was relapsing-remitting (58%), secondary progressive course was present in 28% patients, primary progressive in 9% and progressive relapsing in 1% of patients; the most frequent initial signs of the disease were motor (33%) and sensory ones (24%). According to the results of the study, the south-western part of Bosnia and Herzegovina is an area on the crossing from moderate risk to high risk zone for MS. The distribution of MS is heterogeneous. MS was more prevalent in the municipalities with colder climate and more winter precipitation and it is not present in the coastal region with warmer climate and almost without winter precipitation.

19. Kordić M, Babić D, Petrov B, Kordić J, Jelavić B, Pivić G. The meteorological factors associated with suicide. Coll Antropol. 2010 Mar;34 Suppl 1:151-5.

Health Centre Široki Brijeg, Široki Brijeg, Bosnia and Herzegovina.

Looking through the history, people have always been associating suicide with weather conditions, trying to understand and identify the relationship between meteorological factors and suicide. The aim of this study was to determine and analyze the meteorological conditions in the time of attempted or committed suicides, and examine the possible link between the changes of meteorological factors and the frequency of suicidal behavior. Retrospective study of pairs covered the period from January 2003 to January 2006. Examinees included in the study were persons who committed or attempted suicide in the region of Mostar. Meteorological factors included the days of attempts or committing of suicide, with meteorological factors of the day immediately prior to the days of attempts or committing of suicide, as well as with average monthly values of meteorological factors. Meteorological factors of the days with suicidal behavior were similar to the day prior to the days with suicidal behavior, but there was significant difference between meteorological factors of the days with suicidal behavior and average monthly values of meteorological factors: maximum pressure was significantly lower in the days with suicidal risk, as well as pressure gradient. Regarding the seasonal periods, examinees most frequently attempted to commit suicide in April. Results indicate that meteorological factors do not act as an acute stress factor for suicide behavior, but its change over time may be the trigger for a suicide attempt.

20. Kozomara D, Galić G, Brekalo Z, Šutalo N, Kvesić A, Šoljić M. A randomised two-way comparison of mastectomy performed using harmonic scalpel or monopolar diathermy. Coll Antropol. 2010 Mar;34 Suppl 1:105-12.

Department of Surgery, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The purpose of this study was to perform an overall evaluation and comparison of the success rate of modified radical mastectomy by harmonic scalpel and monopolar electrocauter. The prospective study included all of the patients that were planned for and mastectomized because of breast carcinoma during July 1st 2008 until December 21st 2008 at the Department of Surgery and Urology, University Hospital Mostar. Duration of the surgical procedure, intraoperative blood loss and operational drain secretion was measured and registered. Leukocyte number (Le), interleukin 6 (IL-6), C-reactive protein (CRP) and eryth-

rocyte sedimentation rate was tested and registered out of peripheral venous blood before the operation, 4 hrs after it, as well as on the first, second and third day after the operation. Every patient was tested for postoperative pain intensity, amount of administered analgesics during hospital stay, number and types of postoperative complications; also the time needed for return to everyday activities was registered. 61 patients were included in the study. 31 patients were operated with the harmonic scalpel, and 30 of them with the monopolar electrocauter. There is no statistically significant difference between the operation time in the two groups: 78.50 +/- 17.50 minutes by harmonic scalpel and 82.50 +/- 18.50 minutes by electrocauter ($p = 0.796$). The smaller amount of intraoperative blood loss is statistically significant in the group of patients mastectomized by harmonic scalpel 78 +/- 31 ml compared to 256 +/- 112 ml in the group mastectomized by electrocauter ($p < 0.001$); as is the total operational drain secretion: patients mastectomized by harmonic scalpel 540 +/- 390 mL compared to 960 +/- 710 mL in patients mastectomized by electrocauter ($p < 0.001$). There is no statistical difference in the number of leukocytes in blood after modified radical mastectomy using the harmonic scalpel or electrocauter ($p = 0.957$), or in erythrocyte sedimentation rate ($p = 0.114$), CRP ($p = 0.071$) and IL-6 ($p = 0.082$). The duration of postoperative hospital stay does not differ statistically between the two groups, nor does the postoperative pain intensity, amount of administered analgesics, number or types of postoperative complications, as well as the time needed for return to everyday activities. Therefore using the ultrasound harmonic scalpel in comparison to monopolar electrocauter brings certain advantages, which however do not contribute significantly to the total success rate of the operation.

21. Kvesić A, Šoljić M, Galić G, Lončar Z, Brekalo Z, Martinović Z, Šutalo N, Tomić M, Lekić A. The relation between the serum calcium level and the complication incidence in haemodialysis uremic patients. Coll Antropol. 2010 Mar;34 Suppl 1:173-80.

University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The mineral metabolism disorder is the most influential factor of the morbidity and mortality incidence of haemodialysis uremic patients. The second most influential factor is the infection, which is the most frequent complication with an undesirable outcome. In recent times, the relation of the increased serum calcium and phosphorus level on the one hand, and the morbidity and mortality of that population in case on the other, has been observed. However, insufficient professional and scientific thought has been given to the relation of the lower serum levels of the aforemen-

tioned minerals and the morbidity and mortality incidence. We have researched the relation between lower serum calcium level (hypocalcaemia) and the complication incidence, especially infection. Throughout the time period of 18 months, 120 haemodialysis uremic patients were observed and 76 (63.3%) of them had serum calcium level below the lower threshold of referent values (9.0-9.5 mg/dL). In the patients with a lower serum calcium level (hypocalcaemia) a significant infection incidence ($\chi^2 = 3.99$; $p = 0.0468$), a significant sepsis incidence ($\chi^2 = 8.016$; $p = 0.04$), a significant total complication incidence ($p < 0.05$) were determined, as well as a higher vascular access local infection incidence, but without statistically significant research results of this relation ($\chi^2 = 0.098$; $p = 0.7598$). We are of the belief that the incidence of the vascular access local infection should be examined on a greater number of patients; therefore, the significance of the examined relation in such an instance would be expected. The total infection incidence in all 120 observed patients is 3.8 for 100 months. It is to be concluded that the research findings indicate the association regarding the appearance of low serum calcium concentration (hypocalcaemia) and an increased complication incidence, especially the inflammation that leads to the requirement of further research in order to decrease morbidity, and consequently also the mortality of the observed population of patients by means of programmed therapy approach.

22. Lakičević G, Splavski B, Brekalo Z. The value of stereotactic biopsy in improving survival and quality of life for malignant brain glioma patients. Coll Antropol. 2010 Mar;34 Suppl 1:93-7.

Department of Surgery, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The purpose of the study was to investigate possible differences in the survival and outcome of malignant brain glioma patients when treated by two different methods of surgery. During a 3-year period, 32 glioma patients underwent surgery and oncological protocol afterwards. The patients were divided into two groups according to the surgical method applied. The case group comprised 11 patients in whom a stereotactic biopsy was performed, while the control group consisted of 21 patients who were operated on by radical surgery (craniotomy and maximal reduction of the tumor mass). All survived patients were clinically examined at follow-ups (one year and 2 years following the surgery). The monitored variables for both groups were the tumor pathohistology (the tumor type), the survival rate (time between surgery and follow-up), and the outcome assessed by The Extended Glasgow Outcome Scale. Data statistical analysis was done to compare various investigated variables in two different groups of

patients. The majority of patients treated by a stereotactic biopsy survived for more than 2 years following the procedure. The great part of patients treated by radical surgery died or was severely disabled at follow-up examination. The survival and outcome for the patients in whom a stereotactic biopsy was performed were notably better comparing to the patients who were treated by radical surgery. Consequently, it appears that a stereotactic biopsy is surgical option for primary treatment of selected patients with malignant brain glioma when the survival and quality of life are concerned.

23. Marković-Peković V, Stoisavljević-Šatara S, Škrbić R. Outpatient utilization of drugs acting on nervous system: a study from the Republic of Srpska, Bosnia & Herzegovina. Eur J Clin Pharmacol. 2010 Feb;66(2):177-86. Epub 2009 Oct 9.

Health Insurance Fund, Republic of Srpska, Banja Luka, Bosnia and Herzegovina.

PURPOSE: The aim of this study was to analyse the utilization patterns of drugs acting on the nervous system in the Republic of Srpska, Bosnia & Herzegovina between 2002 and 2008. **METHODS:** This was a retrospective study aimed at analysing outpatient utilization of drugs reimbursed by the Health Insurance Fund, with a focus on the utilization of drugs acting on the nervous system. Anatomical therapeutic chemical/defined daily dose methodology was used to monitor drug utilization, and the drug utilization 90% (DU90%) method was used to assess drug prescribing. **RESULTS:** The most highly used drug subgroups were psycholeptics and antiepileptics followed by the psychoanaleptics. Anxiolytics comprised the most prescribed pharmacological subgroup over the whole study period, but a decrease was observed in 2007 and 2008. Following updating of the list with selective serotonin re-uptake inhibitor drugs, particularly sertraline, antidepressant use increased fivefold in 2008 compared to 2006. Tramadol was the predominant opioid analgesics in terms of utilization, while the use of oral morphine was low. Diazepam was the most highly prescribed drug, followed by phenobarbital and carbamazepine. The list update with the new generation drugs was immediately reflected in the DU90% profile. **CONCLUSIONS:** The observed tendency toward increased total drug utilization observed in our study is comparable to worldwide trends. Implementation of new clinical guidelines for nervous diseases and updating of the list of reimbursable drugs with the addition of new ones contributed to the observed improvement in prescribing patterns in primary healthcare during the study period. The DU90% is shown to be a simple rough method for assessing prescribing quality. More stratified analyses should be performed on a routine basis to ensure a rational use of medicines and a cost-efficient use of limited healthcare resources.

24. Milardović R, Corssmit EP, Stokkel M. Value of 123I-MIBG Scintigraphy in Paraganglioma. Neuroendocrinology. 2010;91(1):94-100. Epub 2009 Sep 25.

Institute of Nuclear Medicine, Clinical Center of the Sarajevo University, Sarajevo, Bosnia and Herzegovina.

AIM: The aim of the study was to evaluate the current role of (123)I-MIBG scintigraphy in the detection and follow-up of patients with paragangliomas. MATERIALS AND METHODS: 117 patients were referred for diagnostic (123)I-MIBG scintigraphy based on a strong clinical suspicion, positive familial history and genetic testing, or for follow-up of paragangliomas. (123)I-MIBG images were analyzed and correlated with (111)In-octreotide scintigraphy, CT or MRI results. Accuracy of the imaging method was calculated per patient and per tumor per site. RESULTS: A total of 117 patients were referred for (123)I-MIBG diagnostic imaging; 80 patients were diagnosed with paraganglioma; 66 patients had a single neuroendocrine tumor and 14 patients multiple tumors. The total number of all lesions in these patients was 172. (123)I-MIBG scintigraphy demonstrated 65 lesions in 56 patients (overall sensitivity: 56.3%, specificity: 84%). Lesion-per-site analysis revealed that sensitivity and specificity significantly varied per tumor site (lowest sensitivity for the head and neck: 17.5% and lowest specificity for the abdomen: 87.5%). Hormones were elevated in 85 patients: 55 (123)I-MIBG tumors were positive and 35 tumors were negative. In 16 patients (13.7%) with a genetic burden and a single neuroendocrine tumor, (123)I-MIBG whole-body imaging was successful at detecting a second tumor. In 2 patients (1.7%) with paragangliomas, (123)I-MIBG unexpectedly detected metastases, so the restaging was properly done. CONCLUSION:(123)I-MIBG scintigraphy remains important in pheochromocytoma and functioning neuroendocrine tumors. The value of (123)I-MIBG scintigraphy is high in familial syndromes with multiple neuroendocrine tumors at different sites, multifocal tumors, and relapsing and metastatic disease. Copyright 2009 S. Karger AG, Basel.

25. Miljko M, Čarapina M, Prlić J, Arapović D. Chronic synovitis after synovial sarcoma resection: a case report. Coll Antropol. 2010 Mar;34 Suppl 1:291-4.

Institute of Radiology, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

We present a diagnostic course and treatment of synovial sarcoma in a young 16-year-old male patient. The clinical course with special emphasis on the imaging techniques is presented here, providing an overview

of this subject and offering a useful educative material. The course of the follow-up is also described, largely relying on MRI in diagnosis course. Changes in the synovial tissue of the knee were recorded, later to be classified as the sarcoma. Post-operative course suggested the existence of chronic synovitis. Further studies are needed to fully understand the changes that may affect knee mechanics after surgery and/or inflammation factors secreted by tumor cells.

26. Mimica M. Implementation of new educational methods: how to overcome obstacles? Coll Antropol. 2010 Mar;34 Suppl 1:11-4.

Clinic for Internal Medicine, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

A presentation of new educational methods was organized for students and teachers of the Faculty of Medicine in Mostar in 2006. Afterwards, the teachers and the students were given a questionnaire to fill on their attitude towards actual, traditional versus new educational methods. According to the results of the questionnaire, a lot of students and the majority of teachers prefer status quo, and, moreover, only 1/3 of teachers support implementation of the new educational methods. Due to the results of this survey, implementation of new educational methods was postponed for the following two years. Since the management of the Faculty of Medicine in Mostar was well aware of the fact that new educational methods help in teaching students about fundamental principles of critical thinking, life-long learning and constructive intellectual conflicts, it was concluded that implementation of new methods should be a necessity. In this academic year (2008/2009), after discussion at the Faculty Council, a new course "Modern educational methods" has been introduced into the curriculum. As the first phase, a new transitional method named "Contradiction with Evidence Based Solution" has been introduced in the workshop session. The proposed new method is a combination of the old, traditional presentation done by a teacher, and new methods which are student-centred. Realistic expectation is that implementation of other new educational methods would be easier after introduction of this transitional method. This implementation trial should be seen as a pilot project that could be introduced to other faculties, at first to those of the University of Mostar, and afterwards to other universities in the region.

27. Novaković J, Mardešić-Brakus S, Vukojević K, Saraga-Babić M. Developmental patterns of Ki-67, bcl-2 and caspase-3 proteins expression in the human upper jaw. Acta Histochem. 2010 Jun 30. [Epub ahead of print]

Department of Anatomy, Histology and Embryology, School of Medicine, University of Mostar, Bijeli brijeg bb, 88000 Mostar, Bosnia and Herzegovina.

The distribution of the Ki-67, bcl-2 and caspase-3 proteins was immunohistochemically analyzed in the developing human upper jaw (5th-10th gestational weeks). During this period, proliferative activity gradually decreased from higher levels at the earliest stages (50-52%) to lower levels, both in the jaw ectomesenchyme and in the epithelium. The highest expression of bcl-2 protein was found in the epithelium and ectomesenchyme of areas displaying lower rates of cell proliferation. High levels of caspase-3 protein were detected during the earliest stages of jaw development, indicating an important role for apoptosis in morphogenesis of early derivatives of the maxillary prominences. The number of Ki-67, bcl-2 and caspase-3 positive cells changed in a temporally and spatially restricted manner, coincidentally with upper jaw differentiation. While apoptosis might control cell number, bcl-2 could act in suppression of apoptosis and enhancement of cell differentiation. A fine balance between cell proliferation (Ki-67), death (caspase-3) and cell survival (bcl-2) characterized early human upper jaw development. A rise in the number of apoptotic cells always temporally coincided with the decrease in number of surviving bcl-2 positive cells within the palatal region. Therefore, the upper jaw development seems to be controlled by the precisely defined expression of genes for proliferation, apoptosis and cell survival.

28. Ostojić L, Damjanović V, Vasilj I, Jančić E, Maslov B. Biomedical scientific productivity of the Mostar University Faculty of Medicine and University Hospital Mostar in 1999-2008. Coll Antropol. 2010 Mar;34 Suppl 1:7-10.

Faculty of Medicine, University of Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to investigate the scientific productivity of the Mostar University Faculty of Medicine and University Hospital Mostar. All articles that were indexed by PubMed with the keyword Mostar were included in the analysis. During 1999-2008, a total of 76 articles were published, with a total of 366 authorships contributed by a total of 228 unique authors, whereas a total of 161 of these authors (70.6%) co-authored a single article only. The average number of co-authors was 4.6 per article. There was a strong increasing linear trend in the total number of published articles. The most published articles were related to clinical research, whereas the least were recorded in the basic biomedical sciences, suggesting the need to increase the research capacity in basic biomedical sci-

ences. The large percent of single-authorship authors that were recorded suggest almost a sporadic rather than systematic publication output. Likely improvements to this situation include the creation of the newly formed doctoral (PhD) course due to start next year and several other ways in which scientific research in biomedicine can be increased in basic, clinical and public health sciences.

29. Ostojić Z, Grle M, Moro G, Zubak Z, Ostojić M. Bone fractures in a 53-year-old patient with parathyroid adenoma--a case report. Coll Antropol. 2010 Mar;34 Suppl 1:295-8.

Department of Orthopedics, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The study reports a case of primary hyperparathyroidism in a middle-aged patient who was first admitted for persistent ankle pain and local swelling. The subsequent clinical procedures suggested cystic changes in several leg bones, which were later shown to be caused by the parathyroid adenoma. Clinical presentation of the primary hyperparathyroidism can be highly misleading, sometimes causing various clinical procedures before it is certainly diagnosed.

30. Ostojić Z, Moro G, Kvesić A, Roth S, Bekavac J, Manojlović S. Treatment of peritrochanteric fractures by the use of gamma nail. Coll Antropol. 2010 Mar;34 Suppl 1:243-6.

Department of Orthopedics, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The Gamma nail was designed to treat unstable intertrochanteric and subtrochanteric fractures. In this study we analysed a total of 60 patients (44 men and 16 women), who were surgically treated for the peritrochanteric fracture in period 2006-2007 at the University Hospital Mostar. After the surgical treatment good bone healing was achieved in 50 patients (83.3%). A total of five patients had delayed healing or protrusion of the cervical screw, and in two patients nails were not appropriately distally locked. During the follow-up period a total of 7 patients died. The average operation time was 40 minutes, and the average blood loss was 400 mL, which is a comparable result with the previously published studies. In conclusion, although most of the peritrochanteric fractures treated at the University Hospital Mostar were fixated by gamma nail, the final decision regarding the operational technique should be left to surgeon's judgment, since the efficacy of the treatment plan is highly dependent on experience of the operational team and surgeon's operational technique.

31. Ostojić Z, Prlić J, Juka K, Ljubić B, Roth S, Bekavac J. Results of treatment of displaced supracondylar humeral fractures in children by K-wiring. Coll Antropol. 2010 Mar;34 Suppl 1:239-42.

Department of Orthopedics, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The supracondylar fracture of the humerus in children remains the most challenging injury for the orthopedic surgeon. It is important to consider the options of treatment very carefully and tailor the treatment according to the characteristics of each fracture. In this study we observed outcomes of surgical procedures using the Kirschner-wire for the dislocated (displaced) supracondylar fractures in 135 children (mean age 6.7 years). In 96 patients closed reposition (reduction) and fixation with crossed K-wire was done. A total of 41 children were operated by the means of open reposition and crossed K-wire fixation. Another 41 underwent similar (1-mm) K-wire application. In classifying the fractures Gartland classification of the supracondylar fractures of the humerus was used. Postoperatively, cubitus varus was found in seven, and cubitus valgus in three children (5% and 2% respectively). Stiffness of the elbow was recorded in 18 patients, while the paresis of the ulnar nerve was recorded in three cases (13 and 2% respectively). In conclusion, we can suggest crossed fixation while applying the K-wire throughout two cortexes, since such technique ensures the most superior fixation and stable osteosynthesis.

32. Perić B, Perko Z, Pogorelić Z, Kraljević J. Laparoscopic cholecystectomy in Cantonal Hospital Livno, Bosnia and Herzegovina and University Hospital Center Split, Croatia. Coll Antropol. 2010 Mar;34 Suppl 1:125-8.

Dr. Fra Mihovil Sučić Cantonal Hospital, Livno, Bosnia and Herzegovina.

Cholecystectomy is the most frequently performed operation in abdominal surgery. The aim of this study was to compare the operative procedure and outcomes of the laparoscopic cholecystectomy in two hospitals, the University Hospital Center Split and the Regional Hospital in Livno. A total of 97 patients who underwent laparoscopic cholecystectomy for cholelithiasis at University Hospital Center Split and 86 patients from Regional Hospital in Livno, both groups sampled in 2005 were included in this study. Differences in patients' age, gender, operation time, total hospital stay, number of trocars ports, antibiotic and parenteral therapy, and complications were analyzed. There were significantly fewer men than women who underwent laparoscopic cholecystectomy in both hospitals. The mean age of the patients undergoing laparoscopic

cholecystectomy at University Hospital Center Split was higher than that of the patients at Regional Hospital in Livno. The operation time was shorter at the University Hospital Center Split than that at Regional Hospital in Livno. There was a significant difference, in favor of the University Hospital Center Split, in the number of patients who received postoperative antibiotics and parenteral therapy, with fewer patients who received postoperative therapy in Split. At the Regional Hospital in Livno fewer trocars were used for laparoscopic cholecystectomy. The average hospital stay of patients undergoing laparoscopic procedures at University Hospital Center Split was shorter than that of patients at Regional Hospital in Livno. Two complications occurred in postoperative period at the University Hospital Center Split and one complication was noticed in hospital in Livno. In conclusion, there were no major complications in postoperative period. It is also encouraging to find that there was significant improvement of surgical approach and technique at the hospital in Livno during the period of time analyzed in this study.

33. Planinić D, Bodina I, Perić B. Prevalence of odontogenic keratocysts associated with impacted third molars. Coll Antropol. 2010 Mar;34 Suppl 1:221-4.

Dental practitioner, Međugorje, Bosnia and Herzegovina.

In this study we analyzed the prevalence of the odontogenic keratocyst (OKC) associated with impacted third molars and evaluated OKC reactivity with the antibodies against cytokeratins (CK), particularly for CK10. Tissue samples were obtained from the proximity of the impacted molar. Differences between genders, age groups and localization of cysts were assessed using the chi2-test and relative risk (RR), and associated confidence interval. Cysts were found in 75 cases, and the radicular ones prevailed (63%), followed by follicular and OKC (13% and 12% respectively). The RR for the upper jaw cysts was almost twice greater than for the mandible. For the OKC exclusively, the upper-lower jaw RR was 1:2. The RR for all cysts increases with age, while decreases for the OKCs. The risk for the OKC occurrence decreased with age, with no significant differences between age groups. Finally, based on the results from this study we cannot suggest that the CK10 staining should be considered a useful marker in differential diagnosis of the OKCs.

34. Resić H, Mašnić F, Kukavica N, Spasovski G. Unusual clinical presentation of brown tumor in hemodialysis patients: two case reports. Int Urol Nephrol. 2010 Apr 28. [Epub ahead of print]

Clinic for Hemodialysis, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina.

Brown tumor or osteoclastoma is a lytic bone tumor, which is common in secondary hyperparathyroidism (1.5-13%) in chronic dialysis patients, mainly in those with untreated renal osteodystrophy. Brown tumor appears as a result from excess osteoclast activity and consists of collections of osteoclasts intermixed with fibrous tissue and poorly mineralized woven bone. It can be manifested as a single or multiple bone lesions. Although invasive, it has no malignant potential and should be distinguished from giant cell tumors of the bone. Two unusual cases of brown tumor in dialysis patients are reported. We present a first patient with five subtotal parathyroidectomies between 2002 and 2009 and a tendency toward recurrence of secondary hyperparathyroidism (sHPTH). The double MRI check up could not reveal any ectopic parathyroid gland. Although the patient had permanently high PTH values, serum calcium level was never above the normal range. However, the brown tumor in the cervical spine was destructing the cervical vertebrae and required surgical intervention. Despite the conservative treatment with calcium and non-calcium-based binders and various forms of vitamin D, the patient's clinical and biochemical condition improved only after the use of cinacalcet. The second patient, a 58-years-old female on chronic hemodialysis since 1998, was found with high PTH serum levels in 2009. The development of sHPTH was scintigraphically confirmed and surgically treated. During the late 2008, she started feeling pain, numbness and swelling of the 3rd right hand finger, prior to the full clinical manifestation of the tumor. The CT scan of the right hand showed osteolytic changes and soft tissue destruction of the middle phalanx of the 3rd right hand finger. This formation corresponded to an unusual presentation of brown tumor associated with sHPTH. As expected, after the parathyroidectomy, there was no marked change in the destructed bone of the 3rd right hand finger middle phalanx, but only a gradual improvement in the subjective clinical condition of the patient. Based on these two reports, we would recommend that in cases of severe or recurrent sHPTH either total parathyroidectomy or early administration of calcimimetics should be considered. Furthermore, the implementation of regular checkup and treatment according to the KDIGO guidelines should be advised and clinical appearance of any bone tumor immediately checked for an association with sHPTH, which is a rather common entity in dialysis patients.

35. Šarac Z, Perić B, Filipović-Zore I, Čabov T, Biočić J. Follicular jaw cysts. Coll Antropol. 2010 Mar;34 Suppl 1:215-9.

Department of Oral and Maxillofacial Surgery, Faculty of Medicine, University of Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to examine the occurrence, localization, size, ways of diagnosing and treatment of a follicular jaw cyst. Assessment of the patients' motives and their earlier health status was recorded, as well as their postoperative clinical course. Most of the patients were admitted because of pain, swelling, trismus, or other difficulties associated with cyst formation. Follicular cysts with persisting primary predecessor had an asymptomatic development, and were discovered after orthodontic examination or by chance. In most cases pathohistological finding and description of the formation have coincided with each other ($p < 0.05$). Cysts of different sizes were treated by different surgical approaches, most commonly alveolotomy and cystectomy in small cysts, while alveolotomy and cystectomy with suction or iodine tampon in large cysts. Cooperation of a dentist, an oral surgeon, a pathologist, and other specialists can lead to early diagnose and prevention of further growth of a follicular jaw cyst, thus preventing substantial bone damage.

36. Šimić D, Prohić A, Šitum M, Zeljko Penavić J. Risk factors associated with the occurrence of basal cell carcinoma. Coll Antropol. 2010 Mar;34 Suppl 1:147-50.

Clinic for Dermatology and Venerology, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

Basal cell carcinoma (BCC) is the most frequent malignant skin tumor, which is associated with both genetic factors and environmental influences. The objective of this study was to investigate the risk factors associated with the occurrence of BCC in the inhabitants of the Western Herzegovina area. The study took place during 1997-2003. We examined the risk factors which are presumably associated with the occurrence of BCC: skin type, exposure to UV rays and family occurrence of BCC, supplemented by the examination of the skin type, UV rays and existence of malignant tumors amongst the family members. We recorded a high correlation between the type of skin and the risk of occurrence of BCC. Long term and frequent skin exposure to UV rays were also associated with BCC. We also recorded increased risk for BCC in persons whose family members suffered from malignant skin tumors. Avoiding exposure to the sun as well as protection from UV rays may decrease the risk of BCC.

37. Šimunović N, Rončević Z. Innocent murmurs: parental viewpoint, what are the most common misconceptions and how to avoid them. Coll Antropol. 2010 Mar;34 Suppl 1:89-92.

Clinic for Pediatrics, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to investigate the parental reaction after they have been informed that their child has a heart murmur. This study also explored whether their reaction was influenced by the fact that the heart murmur is innocent, which actually means that the child is healthy. One hundred parents participated in this cross-sectional study. According to the statistical results, minor parent concern was notable after cardiologist's examination and consulting. Whereas before the cardiologist's examination 98% of parents were concerned about their child's health, later, less than half of them, or to be exact, only 38% of them, were still concerned. Before the questionnaire was filled, according to gender distribution, males were less concerned than females. Regarding the number of children, parents having three or more children were less worried before the medical examination. Before the examination, only 17% of parents were completely confident that their child had no heart complaint, and after a month 60% of parents had the same opinion. After cardiologist's examination and educational consulting, parental concern dropped significantly, which points to an obligatory need to thoroughly familiarize parents with their child's health condition.

38. Škobić H, Sinanović O, Škobić Bovan N, Ivanković A, Pejanović Škobić N. Prevalence of alcohol abuse and alcoholism in general population of Mostar region, Bosnia and Herzegovina. Coll Antropol. 2010 Mar;34 Suppl 1:29-31.

Department of Neurology, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to determine the prevalence of alcohol abuse and alcoholism in the general population of Mostar region, Bosnia and Herzegovina. This study was conducted on a stratified sample of 704 participants. The prevalence of alcohol abuse was determined using standardized questionnaire on alcohol consumption--Michigan Alcoholism Screening Test. Prevalence of alcohol abuse with high risk for alcoholism was 9.9% and prevalence of alcohol addiction was 2.1%. In student population, there were 3.9% of alcohol addicts and 11.1% of persons with high risk of alcoholism. In high school population, there were 1.7% of alcohol addicts and 14.4% of persons with high risk of alcoholism. In Mostar region there was a high prevalence of alcoholism and problematic drinking, especially in high school and student population. There is a need for extensive preventive measures that have to include education, early diagnosis and intervention.

39. Šutalo N, Maričić A, Kozomara D, Kvesić A, Štalekar H, Trninić Z, Kuzman Z. Comparison of results of surgical treatments of primary inguinal hernia with flat polypropylene mesh and three-dimensional prolene (Phs) mesh--one year follow up. Coll Antropol. 2010 Mar;34 Suppl 1:129-33.

Department of General Surgery, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

The aim of this study was to compare the results of the surgery of inguinal hernias using flat polypropylene mesh and three-dimensional prolene (PHS) mesh. The study included two groups of 40 male patients, aged 18-50 years, with the diagnosis of inguinal hernia. One group was operated with a flat polypropylene mesh, while the second group was operated with three-dimensional prolene (PHS) mesh. The study has shown that the operation with three-dimensional prolene mesh lasted 15 minutes longer and that the patients had stronger inflammatory response. Statistically, there was no significant difference in post-operative pain intensity, post-operative use of analgesics, length of hospitalization, return to daily activities, early and late post-operative complications. No recurrence was registered in any of the groups. The analysis of results indicates that there is no difference in treatment of inguinal hernia with flat polypropylene and three-dimensional prolene (PHS) mesh.

40. Tahirović H, Toromanović A. Glycemic control in diabetic children: role of mother's knowledge and socioeconomic status. Eur J Pediatr. 2010 Aug;169(8):961-4. Epub 2010 Feb 19.

Department of Pediatrics, Division of Endocrinology/Diabetes, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina.

The aim of this study is to investigate the role of mother's knowledge and socioeconomic status (SES) of the family on glycemic control in diabetic children. Our sample was taken from successive admissions to the outpatient's diabetes clinics in Tuzla, Bosnia and Herzegovina. Diabetes knowledge was assessed using the Michigan Diabetes Research and Training Center Diabetes Knowledge Test. Glycemic control was assessed by glycosylated hemoglobin (HbA(1C)). The mother's demographics were obtained by self-report. To categorize families' SES, parents' level of education, and current employment were recorded and analyzed using the Hollingshed two-factor index of social position. As expected, higher mother's knowledge was significantly associated with lower HbA(1C) ($r = -0.2861705$, $p = 0.0442$). Also, a significant correlation was found between the families' SES and HbA(1C) levels ($r = 0.4401921$; $p = 0.0015$). Mothers with more knowledge have children with better metabolic con-

trol, and low SES is significantly associated with higher levels of HbA1c. Improvement of mothers' knowledge and family SES may improve glycemic control and ultimately decrease acute and chronic complications of diabetes in children.

41. Tulumović D, Imamović G, Mešić E, Hukić M, Tulumović A, Imamović A, Zerem E. Comparison of the effects of Puumala and Dobrava viruses on early and long-term renal outcomes in patients with haemorrhagic fever with renal syndrome. *Nephrology (Carlton)*. 2010 Apr;15(3):340-3.

University Clinical Centre Tuzla, Tuzla, Bosnia and Herzegovina.

AIM: The clinical course and outcome of patients with haemorrhagic fever with renal syndrome (HFRS) caused by Puumala (PUUV) and Dobrava viruses (DOBV) were analyzed and whether it left long-term consequences on kidney function after 10 years was evaluated. METHODS: Cross-sectional studies were conducted to test the kidney function and blood pressure of HFRS-affected patients and to follow them up 10 years after. Eighty-two PUUV- and 53 DOBV-induced HFRS patients and 14 and 31 participants 10 years after having contracted PUUV- and DOBV-related diseases, respectively were evaluated. RESULTS: Serum creatinine concentrations were 279.5 and 410 $\mu\text{mol/L}$ in PUUV and DOBV groups, respectively ($P = 0.005$). There were six and 13 anuric ($P < 0.05$), none and seven dialysis-dependant ($P < 0.05$), and nine and 18 hypotensive patients ($P < 0.05$) in PUUV and DOBV groups, respectively. After 10 years, glomerular filtration rates were 122.1 ± 11.1 and 104.7 ± 20.2 mL/min ($P < 0.05$) in PUUV and DOBV groups, respectively. CONCLUSION: During the acute phase, DOBV causes more severe renal impairment than PUUV infection. After 10 years follow up, renal function was found within normal limits, although after DOBV infection glomerular filtration rate (GFR) was significantly lower than after PUUV infection.

42. Vulić D, Lee BT, Dede J, Lopez VA, Wong ND. Extent of control of cardiovascular risk factors and adherence to recommended therapies in US multiethnic adults with coronary heart disease: from a 2005-2006 national survey. *Am J Cardiovasc Drugs*. 2010;10(2):109-14.

Department of Internal Medicine, University of Banja Luka, Banja Luka, Bosnia and Herzegovina.

Guidelines for cardiovascular risk factor control in people with coronary heart disease (CHD) focus on compliance with beta-adrenoceptor antagonists (beta-blockers), angiotensin receptor blockade (ACE

inhibitors/angiotensin II receptor antagonists [angiotensin receptor blockers; ARBs] [ACE/ARBs], and lipid-lowering agents, with goals for BP of $<140/90$ mmHg and low-density lipoprotein cholesterol (LDL-C) levels of <2.6 mmol/L (100 mg/dL). Most data derive from registries of hospitalized patients or are from clinical trials. Little data exist on goal attainment and adherence with therapy among CHD survivors of major US ethnic groups in the real-world setting. We assessed levels of cardiovascular risk factor control and adherence with recommended therapies among US CHD survivors. We identified 364 US adults (representing 12.8 million in the US with CHD) aged 18 years and over in the National Health and Nutrition Examination Survey 2005-6 with known CHD. We calculated proportions of patients who were receiving recommended treatments, and who achieved goal targets for BP, LDL-C levels, glycosylated hemoglobin (HbA(1c)), and nonsmoking status, and differences between actual and goal levels ('distance to goal'), stratified by sex and ethnicity. Overall, 58%, 38%, and 60% of CHD survivors were receiving beta-adrenoceptor antagonists, ACE/ARBs, and lipid-lowering medications, respectively (22% received all three). However, treatment rates for beta-adrenoceptor antagonists and lipid-lowering agents were lower ($p < 0.05$ to $p < 0.01$) in Hispanics (36% and 27%, respectively) and non-Hispanic Blacks (47% and 42%, respectively) than in non-Hispanic Whites. Moreover, lipid-lowering treatment rates were lower in females (50%) than in males (67%) [$p < 0.01$]. Overall, 78% were nonsmokers while 68% achieved goal levels for BP, 57% for LDL-C levels, and, if diabetic, 67% for HbA(1c). Only 12% met all four goals. Non-Hispanic Whites had the lowest SBP and DBP as well as HbA(1c) ($p < 0.05$ to $p < 0.01$ across ethnicity). In those who did not achieve goal levels, distance to goal averaged 1.0 mmol/L (37.0 mg/dL) for LDL-C levels, 15.6 mmHg for SBP, and 1.3% for HbA(1c). Despite clear treatment guidelines, we show that many US adults with CHD, especially Hispanics and non-Hispanic Blacks, are neither receiving recommended treatments nor adequately treated in terms of BP, LDL-C levels, and HbA(1c). Greater efforts by healthcare systems to disseminate and implement guidelines are needed.

43. Zeljko-Penavić J, Šitum M, Šimić D, Vurnek-Živković M. Quality of life in psoriatic patients and the relationship between type I and type II psoriasis. *Coll Antropol*. 2010 Mar;34 Suppl 1:195-8.

Department of Dermatology and Venerology, University Hospital Mostar, Mostar, Bosnia and Herzegovina.

Psoriatic patients, along with skin changes, frequently show various psychological changes such as depres-

sion, anxiety and have overall lower quality of life. The aim of this study was to evaluate the quality of life in patients with psoriasis compared to other dermatological patients, as well as to investigate the differences between the two subgroups--type I and type II psoriasis. A total of 94 dermatological patients were included. The patients were divided into two groups, the first group made of psoriatic patients which was further divided into two subgroups, and the second, control group made of patients with other skin diseases. DSQL quality of life questionnaire was used. The study showed that among psoriatic patients there was no significant difference in the quality of life, but there was a significant difference between the psoriasis type I and the control group, which could be explained by the strong influence of the disease on the quality of life in psoriatic patients.

44. Zerem E, Imamović G. Comments on the article about the treatment of peripancreatic infection. *World J Gastroenterol.* 2010 May 14;16(18):2321-2.

*University Clinical Centre Tuzla, Tuzla,
Bosnia and Herzegovina.*

We read with great interest the article by Tang et al published in issue 4 of World Journal of Gastroenterology 2010. The results of their study indicate that percutaneous catheter drainage in combination with choledochoscope-guided debridement is a simple, safe and reliable treatment procedure for peripancreatic infections secondary to severe acute pancreatitis. However, there are some points that need to be addressed, including data about the patients in the study and their clinical characteristics, data about infection and superinfection during the treatment and type of treatment of patients with acute necrotizing pancreatitis.

by Nerma Tanović