

## International publications of authors from Bosnia and Herzegovina in Current Contents indexed publications in the first half of 2011\*

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**Bogunić F, Šiljak-Yakovlev S, Muratović E, Ballian D. Different karyotype patterns among allopatric *Pinus nigra* (Pinaceae) populations revealed by molecular cytogenetics. *Plant Biol (Stuttg)*. 2011 Jan;13(1):194-200. doi: 10.1111/j.1438-8677.2010.00326.x.**

*Faculty of Forestry, University of Sarajevo, Sarajevo, Bosnia and Herzegovina.*

To examine variation and taxonomic recognition of *Pinus nigra* (European black pine) at the intraspecific level, chromosomal distribution of 5S and 18S-5.8S-26S rDNA loci revealed by fluorescent in situ hybridisation (FISH) and fluorochrome banding with chromomycin A(3) and DAPI were analysed among allopatric populations belonging to different subspecies. Despite prevalent opinion on predominantly conserved and homogenous conifer karyotypes, several patterns were observed. Surprisingly, interstitial 18S rDNA loci and DAPI heterochromatin staining after FISH showed variations in distribution and localisation. Three subspecies shared a pattern with nine 18S rDNA loci (*ssp. nigra*, *pallasiana* and *laricio*) while *ssp. dalmatica* and *salzmannii* had eight rDNA loci. DAPI banding displayed two patterns, one with a high number of signals (*ssp. nigra*, *pallasiana* and *dalmatica*) and the other with a lower number of signals (*ssp. salzmannii* and *laricio*). We conclude that our results cannot provide proof for either classification scheme for the *P. nigra* complex, but rather demonstrate the variability of different heterochromatin fractions at the intraspecific level.

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**Delibegović S, Iljazović E, Katica M, Koluh A. Tissue reaction to absorbable endoloop, nonabsorbable titanium staples, and polymer Hem-o-lok clip after laparoscopic appendectomy. *JSLs*. 2011 Jan-Mar;15(1):70-6.**

*Department of Surgery, University Clinic Center Tuzla, Tuzla, Bosnia and Herzegovina.*

**BACKGROUND AND OBJECTIVES:** The standard technique for securing the base of the appendix during laparoscopic appendectomy is by absorbable endoloop ligature, although clinical reports favor the use of the stapler. Nonabsorbable Hem-o-lok clips have been shown to be an alternative technique to this. However, it is currently not clear whether nonabsorbable clips have any effects on the intestine or promote infection in the surgical area. **MATERIALS AND METHODS:** Sixty Wistar albino rats were randomized into 3 treatment groups: group I (n=20) the base of the appendix was secured by endoloop 2-0 ligature; group II (n=20) dissection of the appendix was performed by a 45-mm thick stapler; and group III (n=20) the base of the appendix was secured by a Hem-o-lok plastic clip. The animals were sacrificed on the 14th and 28th days after surgery. The secured stump was used for histopathological examination. **RESULTS:** There were no significant differences in histopathological changes observed on the 14th postoperative day between the groups. On the 28th postoperative day, it was proved that mild and moderate inflammation is more frequent in the endoloop and Hem-o-lok groups than in the stapler group. Reaction to a foreign

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\*Data for this survey were collected from PubMed database using the keywords Bosnia and Herzegovina and 2011.

body is more frequent in the endoloop than in stapler and Hem-o-lok groups. **CONCLUSION:** The mildest postoperative inflammatory changes were seen in the stapler group, followed by the Hem-o-lok group. However, because of the price of the plastic clip and the simplicity of its application, its use is still favored during laparoscopic appendectomy.

**Dilić M, Nalbantić AD, Arslanagić A, Huskić J, Brđanović S, Kulić M, Hodžić E, Sokolović Š, Zvizdić F, Džubur A. Biphasic and monophasic pattern of brain natriuretic peptide release in acute myocardial infarction. Coll Antropol. 2011 Mar;35(1):155-9.**

*Sarajevo University Clinical Centre, Institute for Vascular Disease, Sarajevo, Bosnia and Herzegovina.*

This study evaluated brain natriuretic peptide (BNP) release in acute myocardial infarction (AMI), absolute values as well as pattern of its release. There are two different patterns of BNP release in AMI; monophasic pattern--concentration in the first measurement is higher than in the second one, and biphasic pattern--concentration in the first measurement is lower than in the second one. We observed significance of biphasic and monophasic pattern of BNP release related to diagnostic and prognostic value. We included in this prospective observational study total of 75 AMI patients, 52 males and 23 females, average age of 62.3 +/- 10.9 years with range of 42 to 79 years. BNP was measured and pattern of its release was evaluated. In AMI group BNP levels were significantly higher than in controls (462.88 pg/mL vs. 35.36 pg/mL,  $p < 0.001$ ). We found statistically significant real negative correlation ( $p < 0.05$ ) between BNP concentration and left ventricle ejection fraction (LVEF) with high correlation coefficient ( $r = -0.684$ ). BNP concentrations were significantly higher among patients in Killip class II and III compared to Killip class I; Killip class I BNP = 226.18 pg/mL vs. Killip class II 622.51 pg/mL vs. Killip class III 1530.28 pg/mL,  $p < 0.001$ . BNP concentrations were significantly higher in patients with; (i) myocardial infarction vs. controls; (BNP 835.80 pg/mL vs. 243.03 pg/mL); (ii) in pts with positive major adverse cardiac events (MACE) vs. negative MACE (BNP 779.08 pg/mL vs. 242.28 pg/mL,  $p < 0.001$ ); (iii) in pts with positive compared to negative left ventricle (LV) remodelling (BNP 840.77 pg/mL vs. 341.41 pg/mL,  $p < 0.001$ ). Group with biphasic pattern of BNP release had significantly higher BNP concentration compared to monophasic pattern group. In biphasic pattern group we found significant presence of lower LVEF, Killip class II and III, LV remodelling and MACE. We found that BNP is strong marker of adverse cardiac events in patients presenting with a myocardial infarction. In our AMI group we found

significant elevation of BNP and it is suspected that second peak secretion is not only due to systolic dysfunction and subsequent remodeling of LV but also due to impact of ischaemia. Patients with biphasic pattern probably have worse prognosis due to severe coronary heart disease. Besides its diagnostic role as a simple blood marker of systolic function, BNP is also important prognostic marker who helps making clinical decision about early invasive vs. conservative management.

**Fatušić Z, Hudić I, Sinanović O, Kapidžić M, Hotić N, Musić A. Short-term postnatal quality of life in women with previous Misgav Ladach caesarean section compared to Pfannenstiel-Dorffler caesarean section method. J Matern Fetal Neonatal Med. 2011 Sep;24(9):1138-42. Epub 2011 Jan 13.**

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

**Objective.** To examine whether short-term postnatal health-related quality of life differed among women after different methods of cesarean sections. **Methods.** One hundred forty-five women were evaluated with previous CS (85 by Misgav Ladach and 60 by Pfannenstiel-Dörffler). Short-time quality of life was measured using the Croatian version of Short Form Health Survey (SF - 36). Short-term postoperative recovery was assessed using two criteria: febrile morbidity and degree of pain. Incidence of peritoneal adhesions was assigned using Bristow scoring system. **Results.** Four weeks after delivery women with previous Misgav Ladach cesarean section significantly scored higher on the bodily pain (72.4 vs. 56.7,  $p < 0.05$ ), social functioning (71.5 vs. 60.4,  $p < 0.05$ ), and the vitality (61.7 vs. 50.3,  $p < 0.05$ ) subscales. These differences disappeared in the second assessment (12-weeks postpartum) except in the bodily pain (74.7 vs. 61.2,  $p < 0.05$ ) subscale. There was a significant trend toward a higher requirement for postoperative analgesics in the Pfannenstiel-Dörffler group (doses: 5.4 vs. 8.7,  $p < 0.05$ ; hours: 17.9 vs. 23.3,  $p < 0.05$ ), and they had a significantly higher rate of febrile morbidity than the Misgav Ladach group (5.7 vs. 9.4%,  $p < 0.05$ ). Hospitalization time was reduced in the Misgav Ladach group (4.2 vs. 7.3,  $p < 0.05$ ). The incidence of adhesions was significantly lower in patients who had undergone a previous operation using the original Misgav Ladach method (0.47 vs. 0.77,  $p < 0.05$ ). **Conclusion.** Misgav Ladach cesarean section method might lead to better short-time quality of life resulting in reducing postoperative complications compared to Pfannenstiel-Dörffler cesarean section method.

**Galić G, Tomić M, Galešić K, Kvesić A, Šoljić M,**

**Lončar Z, Valenčić M, Martinović Ž, Vučkov Š. The etiological relation between serum iron level and infection incidence in hemodialysis uremic patients. Coll Antropol. 2011 Mar;35(1):93-101.**

*University of Mostar, Mostar University Clinical Hospital, Mostar, Bosnia and Herzegovina.*

Through the treatment of anaemia in dialysis patients part of the iron ions remain free in the serum which is at the bacterias disposal for growth and the strengthening of their virulence. The linear relation of the increased serum iron level and tissue iron stores in the body and the infection incidence in dialysed patients has become more emphasised. The need of a clearly defined upper threshold of the serum iron concentration limit has been mentioned in scientific journals intensely, and consequently the demand for more precise professional instructions for anaemia treatment. For the purpose of participating in these professional and scientific discussions, we have observed the relation between the iron overload of the organism and complication incidence in 120 of our haemodialysis uremic patients, with special emphasis on infections. It has been established that the sepsis incidence is much higher in patients with a serum ferritin concentration above 500 microg/L, than in those patients with a ferritin level lower than the mentioned value ( $2 = 7.857$ ,  $p = 0.005$ ). The incidence of vascular access infection is significantly higher in those patients with a serum ferritin level above 500 microg/L than in those patients with a ferritin level lower than the mentioned value ( $\text{Chi}^2 = 23.186$ ,  $p = 0.001$ ). Furthermore, it has been determined that the incidence of total infection in patients is 3.8 episodes per 100 patients months, which is in accordance to the referral values of other authors. **CONCLUSION**--In the analysis of the achieved results, it has been determined that the infection incidence is significantly higher in dialysed patients with a serum iron level higher than 500 g/L, than in those patients with lower values.

**Hodžić S, Hukić M, Franciosa G, Aureli P. The pathogenic potential of different pulsed-field gel electrophoresis types of *Listeria monocytogenes* strains isolated from food in Northeast Bosnia and Herzegovina. Vector Borne Zoonotic Dis. 2011 Sep;11(9):1279-83. Epub 2011 May 25.**

*Faculty of Science, University of Tuzla, Tuzla, Bosnia and Herzegovina.*

*Listeria monocytogenes* is often present in meat and meat products that are sold in the area of northeast Bosnia and Herzegovina. The major objective of this study was to examine the virulence of *L. monocytogenes* strains isolated from these types of food in that geographic area. Polymerase chain reaction was used

to detect eight genes responsible for virulence of this pathogen, namely, *prfA*, *inlA*, *inlB*, *hly*, *plcA*, *plcB*, *actA*, and *mpl*. All examined isolates were confirmed to possess the eight virulence genes. Ten different pulsed-field gel electrophoresis (PFGE) macrorestriction profiles were recognized among 19 *L. monocytogenes* strains after restriction with two different endonucleases (*ApaI* and *AscI*). The pathogenicity of three different PFGE types of *L. monocytogenes* was confirmed through in vivo tests, which were performed on female white mice (Pasteur strain), and it ranged from  $3.55 \times 10(8)$  LD50 to  $1.58 \times 10(10)$  LD50. All of the three different PFGE types of *L. monocytogenes* were regarded as moderately virulent in relation to the reference strain *L. monocytogenes* Scott A. This result might be one of the reasons for the absence of reported listeriosis in northeast Bosnia and Herzegovina, despite the high degree of food contamination with this pathogen.

**Hudić I, Radončić F, Fatušić Z. Incidence and causes of maternal death during 20-year period (1986-2005) in Tuzla Canton, Bosnia and Herzegovina. J Matern Fetal Neonatal Med. 2011 Oct;24(10):1286-8. Epub 2011 Feb 28.**

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

The purpose of this study was to determine how increased inaccessibility of health care during the war reflected on maternal outcomes in Tuzla Canton, Bosnia and Herzegovina. We retrospectively collected data from the databases of University Department for Gynecology and Obstetrics and Department of Pathology. During war years (1992-1995), the rate of maternal mortality was 87/100,000 births, in the prewar (1986-1991) was 49/100,000 births, in the postwar (1996-2000) was 50/100,000 births, and in the 2001-2005 period was 23/100,000 births. Maternal mortality was significantly higher during the war, mainly due to lower adequacy and accessibility of health care, explosive injuries, and inadequate nutrition.

**Hukić M, Hübschen JM, Šeremet M, Salimović-Bešić I, Mulaomerović M, Mehinović N, Karakaš S, Charpentier E, Muller CP. An outbreak of rubella in the Federation of Bosnia and Herzegovina between December 2009 and May 2010 indicates failure to vaccinate during wartime (1992-1995). Epidemiol Infect. 2011 Apr 28:1-7. [Epub ahead of print]**

*Institute of Clinical Microbiology, Clinical Centre University of Sarajevo, Sarajevo, Bosnia and Herzegovina.*

SUMMARYA rubella outbreak involving 1900 cases was recorded in the Federation of Bosnia and Herzegovina between mid-December 2009 and the end

of May 2010. Sera from 389 suspected rubella cases were examined for the presence of rubella-specific IgM and IgG antibodies. A total of 32 throat swabs from suspected rubella cases were tested by RT-PCR and were used to attempt virus isolation. Most patients (945/1900, 49.73%) had never received rubella vaccination or had an unknown vaccination status (563/1900, 29.63%). About 45% (178/389) of suspected rubella patients were IgM positive. From 13 of the throat swabs a virus isolate and E1 gene sequences attributed to genotype 2B were obtained. The rubella outbreak was due to failure to vaccinate during the war period (1992-1995) and emphasizes the need for additional vaccination opportunities.

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**Imamović G, Zerem E, Osmanović E. Survival of living-related kidney graft recipients in the era of modern immunosuppressive treatment. *Ann Saudi Med.* 2011 May-Jun;31(3):279-83.**

*Department of Nephrology and Dialysis, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina, Bosnia.*

**BACKGROUND AND OBJECTIVES:** Currently, there is no consensus about immunosuppressive therapy following kidney transplantation. Acute rejection rates and allograft survival rates are the clinical outcomes traditionally used to compare the efficacy of various immunosuppressive regimens. Therefore, we conducted this study to evaluate whether patient survival rates improved in the era of modern immunosuppressive treatment during living-related kidney transplantation. **DESIGN AND SETTING:** Retrospective cohort study in a university-based tertiary internal medicine teaching hospital performed between 1999 and 2009 and patients followed up to 7 years. **PATIENTS AND METHODS:** Survival rates were assessed in 38 patients receiving basiliximab and mycophenolate mofetil (regimen A) and 32 patients receiving antithymocyte globulin and azathioprine (regimen B). The rest of the regimen (cyclosporine A and steroids) remained the same. A secondary end point was acute rejection episode. **RESULTS:** Seven-year survival rates were 100% and 72% ( $P=.001$ ) and 7-year acute rejection-free survival rates were 82% and 53% ( $P=.03$ ), in groups A and B, respectively. **CONCLUSION:** Long-term survival after living-related kidney transplantation has improved in the era of modern immunosuppressive treatment.

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**Klupka-Sarić I, Peterlin B, Lovrečić L, Sinanović O, Vidović M, Sehanović A, Čizmarević NS, Sepčić J, Kapović M, Ristić S. Angiotensin-Converting Enzyme Gene Polymorphism in Patients with Multiple Sclerosis from Bosnia and Herzegovina.**

**Genet Test Mol Biomarkers.** 2011 Jun 23. [Epub ahead of print]

*Department of Neurology, School of Medicine, University of Mostar, Mostar, Bosnia and Herzegovina.*

**Background:** Increased activity of angiotensin-converting enzyme (ACE) in the blood and cerebrospinal fluid of patients with multiple sclerosis (MS), and the inhibition of ACE in experimental autoimmune encephalomyelitis, suggested that ACE may play a role in the pathogenesis and progression of MS. We recently published the first report on the potential association of MS and ACE I/D polymorphism in Slovenian and Croatian patients with MS, in which it was shown that the DD genotype might contribute to a higher risk of developing MS in men. To confirm these findings in a similar ethnic population, we analyzed ACE I/D gene polymorphism in patients with MS from Bosnia and Herzegovina. **Subjects and Methods:** One hundred and seventy patients with MS and 170 healthy controls were genotyped by the polymerase chain reaction method. **Results:** There was no significant difference in the distribution of ACE I/D genotypes ( $p=0.783$ ) or in the allelic frequencies ( $p=0.538$ ) between patients with MS and control subjects. When patients with MS were stratified by sex, no statistically significant differences in allele or genotype distributions were observed. Finally, there was no indication of an impact of the ACE I/D genotype on disease course or severity. **Conclusion:** The ACE I/D polymorphism is not a risk factor for development of MS, nor does it contribute to disease severity in this Bosnia and Herzegovina population.

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**Lukić-Bilela L, Perović-Ottstadt S, Walenta S, Natalio F, Pleše B, Link T, Müller WE. ATP distribution and localization of mitochondria in *Suberites domuncula* (Olivi 1792) tissue. *J Exp Biol.* 2011 May 15;214(Pt 10):1748-53.**

*Laboratory for Molecular Genetics of Natural Resources, Institute for Genetic Engineering and Biotechnology, Gajev Trg 4, Sarajevo, Bosnia and Herzegovina.*

The metabolic energy state of sponge tissue *in vivo* is largely unknown. Quantitative bioluminescence-based imaging was used to analyze the ATP distribution of *Suberites domuncula* (Olivi 1792) tissue, in relation to differences between the cortex and the medulla. This method provides a quantitative picture of the ATP distribution closely reflecting the *in vivo* situation. The obtained data suggest that the highest ATP content occurs around channels in the sponge medulla. HPLC reverse-phase C-18, used for measurement of ATP content, established a value of 1.62  $\mu\text{mol ATP g}^{-1}$  dry mass in sponge medulla, as opposed to 0.04

$\mu\text{mol ATP g}^{-1}$  dry mass in the cortex, thus indicating a specific and defined energy distribution. These results correlate with the mitochondria localization, determined using primary antibodies against cytochrome oxidase c subunit 1 (COX1) (immunostaining), as well as with the distribution of arginine kinase (AK), essential for cellular energy metabolism (in situ hybridization with AK from *S. domuncula*; SDAK), in sponge sections. The highest energy consumption seemed to occur in choanocytes, the cells that drive the water through the channel system of the sponge body. Taken together, these results showed that the majority of energetic metabolism in *S. domuncula* occurs in the medulla, in the proximity of aqueous channels.

**Marjanović D, Konjhodžić R, Butorac SS, Drobnič K, Merkaš S, Lauc G, Primorac D, Anđelinović Š, Milosavljević M, Karan Ž, Vidović S, Stojković O, Panić B, Vučetić Dragović A, Kovačević S, Jakovski Z, Asplen C, Primorac D. Forensic DNA databases in Western Balkan region: retrospectives, perspectives, and initiatives. Croat Med J. 2011 Jun;52(3):235-44.**

*Institute for Genetic Engineering and Biotechnology, Sarajevo, Bosnia and Herzegovina.*

The European Network of Forensic Science Institutes (ENFSI) recommended the establishment of forensic DNA databases and specific implementation and management legislations for all EU/ENFSI members. Therefore, forensic institutions from Bosnia and Herzegovina, Serbia, Montenegro, and Macedonia launched a wide set of activities to support these recommendations. To assess the current state, a regional expert team completed detailed screening and investigation of the existing forensic DNA data repositories and associated legislation in these countries. The scope also included relevant concurrent projects and a wide spectrum of different activities in relation to forensic DNA use. The state of forensic DNA analysis was also determined in the neighboring Slovenia and Croatia, which already have functional national DNA databases. There is a need for a 'regional supplement' to the current documentation and standards pertaining to forensic application of DNA databases, which should include regional-specific preliminary aims and recommendations.

**Pašić A, Tahirović H, Hadžibeganović M. Incidence of asthma in children in Tuzla Canton--Bosnia and Herzegovina. Coll Antropol. 2011 Jun;35(2):299-303.**

*Tuzla University Clinical Center, Department of Pediatrics, Tuzla, Bosnia and Herzegovina.*

Asthma is one of the most common chronic diseases

whose incidence shows constant growth in childhood. The objective of this work was to look into asthma incidence in children in relation to their age group and sex in a retrospective study, at Tuzla Canton area. The study comprised children of both sexes, age 0-14 who fell sick with asthma within the period from January 1st 2003 to December 31st 2007. The overall incidence and the incidence in relation to age group and sex was calculated as the number of children suffering from asthma, within the age group 0-14 years per 1000 children of the same age group in the Tuzla Canton. Asthma was diagnosed in 277 children (66.1% male and 33.9% female). The difference between asthma frequency in boys and girls was significant ( $\chi^2 = 56.16$ ;  $df = 1$ ;  $p < 0.0001$ ). The average difference in proportion between the boys and girls was 32.2% (95% CI = 24.32-40.08). From this sample group the boys had a 3.8 times greater risk (OR = 3.79; %95 CI = 2.67-5.39) of contracting asthma. The average rate of incidence of asthma for both sexes in the observed period was 0.67/1000 (95% CI; 0.6-0.7; for boys 0.86/1000; for girls 0.47/1000). There was a statistically significantly higher incidence of asthma in boys in relation to girls ( $t = 6.3836$ ,  $df = 32$ ;  $p < 0.0001$ ). The epidemiological data obtained could be useful for early detection and adequate treatment of children with asthma in the mentioned area.

**Prohić A, Kasumagić-Halilović E. Identification of Malassezia species from immunocompetent and immunocompromised patients with seborrheic dermatitis. Eur Rev Med Pharmacol Sci. 2010 Dec;14(12):1019-23.**

*Department of Dermatovenerology, University Clinical Center of Sarajevo, Sarajevo, Bosnia and Herzegovina.*

**BACKGROUND AND OBJECTIVES:** Differences in prevalence, clinical and histological manifestations between seborrheic dermatitis (SD) in immunocompetent and immunocompromised patients suggest that these two populations might also differ in a spectrum of isolated *Malassezia* species. The purpose of our study was to analyse the prevalence of *Malassezia* species in immunocompromised and non-immunocompromised patients with SD and to examine if the range of isolated yeasts varies between these two study groups. **PATIENTS AND METHODS:** Specimens were taken from 50 patients with SD: 30 without any underlying disease and 20 with confirmed immunosuppression. The samples were obtained by scraping the skin surface of the scalp and trunk lesions of all subjects and then incubated on modified Dixon agar. The yeasts isolated were identified by their morphological and physiological properties according to Guillot et al method. **RESULTS:** In both groups, the most commonly isolated species from the scalp

lesions were *Malassezia restricta* and *Malassezia globosa*, the later being the most common species isolated from lesional trunk skin. No significant differences were found between immunocompromised and immunocompetent patients from both sampled sites. **CONCLUSIONS:** There is no difference in the distribution of *Malassezia* species isolated from SD lesions between immunocompetent and immunocompromised patients. However, the much higher percentage of positive cultures in immunocompromised patients confirms that impaired cellular immunity may facilitate fungal survival on the skin.

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**Redžić A, Smajilagić A, Aljičević M, Berberović Lj. In vivo osteoinductive effect and in vitro isolation and cultivation bone marrow mesenchymal stem cells. Coll Antropol. 2010 Dec;34(4):1405-9.**

*Institute for Biology and Human Genetics, Medicine Faculty, University of Sarajevo, Sarajevo, Bosnia and Herzegovina.*

Bone marrow contains cell type termed mesenchymal stem cells (MSC), first recognized in bone marrow by a German pathologist, Julius Cohnheim in 1867. That MSCs have potential to differentiate in vitro in to the various cells lines as osteoblast, chondroblast, myoblast and adipoblast cells lines. Aims of our study were to show in vivo capacity of bone marrow MSC to produce bone in surgically created non critical size mandible defects New Zeland Rabbits, and then in second part of study to isolate in vitro MSC from bone marrow, as potential cell transplantation model in bone regeneration. In vivo study showed new bone detected on 3D CT reconstruction day 30, on all 3 animals non critical size defects, treated with bone marrow MSC exposed to the human Bone Morphogenetic Protein 7 (rhBMP-7). Average values of bone mineral density (BMD), was 530 mg/cm<sup>3</sup>, on MSC treated animals, and 553 mg/cm<sup>3</sup> on control group of 3 animals where non critical size defects were treated with iliac crest autologous bone graft. Activity of the Alkaline Phosphatase enzyme were measurement on 0.5, 14, 21, 30 day and increased activity were detected day 14 on animals treated with bone marrow MSCs compared with day 30 on iliac crest treated animals. That results indicates strong osteoinduction activity of the experimental bone marrow MSCs models exposed to the rhBMP-7 factor Comparing ALP activity, that model showed superiorly results than control group. That result initiates us in opinion that MSCs alone should be alternative for the autologous bone transplantation and in vitro study we isolated singles MSCs from the bone marrow of rat's tibia and femora and cultivated according to the method of Maniatopoulos et al. The small initial colonies of fibroblast like cells were photo-documented after 2 days of primary culture.

Such isolated and cultivated MSCs in future studies will be exposed to the growth factors to differentiate in osteoblast and indicate their clinically potential as alternative for conventional medicine and autologous bone transplantation. That new horizons have potential to minimize surgery and patient donor morbidity, with more success treatment in bone regenerative and metabolism diseases.

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**Rifatbegović M, Maksimović Z, Hulaj B. Mycoplasma ovipneumoniae associated with severe respiratory disease in goats. Vet Rec. 2011 May 28;168(21):565. Epub 2011 May 24.**

*Department of Microbiology and Immunology, Veterinary Faculty, University of Sarajevo, Bosnia and Herzegovina.*

No abstract available.

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**Selimović E, Ibrahimagić-Šeper L, Petričević N, Nola-Fuchs P. Pain relieve after impacted wisdom teeth extraction dependent on the drug therapy. Coll Antropol. 2011 Mar;35(1):133-6.**

*Public Institute Health Center Zenica, Zenica, Bosnia and Herzegovina.*

Purpose of this study was to compare the effects of combined therapy using nonsteroid anti-inflammatory analgetics and corticosteroids, and the effects of the mono-therapy with same drugs for post-operative pain after surgical removal of the impacted mandibular third molar. The study was completed at the Department of Oral Surgery and at the Department of Dental Medicine of the Public Institute Health Center Zenica in Zenica. The research included 60 patients divided into 3 groups using random selection, including both sexes. Age range was between 18 and 45 years. All participants came without any pain or other inflammatory symptoms at the time of oral surgical intervention. Two medicaments were prescribed after the impacted tooth removal: 15 mg of nonsteroid anti-inflammatory analgesic drug (Meloxicam, Bosnalijek, BiH) and 32 mg Methylprednisolone (corticosteroid, Bosnalijek, BiH). Both medicaments were applied per os, according to schedule determined by the research protocol. The level of post-surgical pain was evaluated by the 1-10 visual analog scale (VAS). One way ANOVA was made with Tuckey post-hoc tests. Statistically significant difference ( $p < 0.05$ ) was found between the group treated with mono therapy and the group treated with combined therapy. Application of monotherapy using only corticosteroids or only nonsteroid anti-inflammatory pain-killers was less effective compared to the combined therapy with both medicaments after surgical removal of the impacted

mandibular third molar.

**Semiz S, Dujčić T, Ostanek B, Velija-Ašimi Z, Prnjavorac B, Bego T, Malenica M, Mlinar B, Heljić B, Marc J, Čaušević A. Association of NAT2 polymorphisms with type 2 diabetes in a population from Bosnia and Herzegovina. Arch Med Res. 2011 May;42(4):311-7.**

*Department of Biochemistry and Clinical Analysis, Faculty of Pharmacy, University of Sarajevo, Bosnia and Herzegovina.*

**BACKGROUND AND AIMS:** N-acetyltransferase 2 (NAT2) is a drug-metabolizing enzyme, which is genetically variable in human populations. Polymorphisms in the NAT2 gene have been associated with drug efficacy and toxicity as well as disease susceptibility. Recently, an association of NAT2 gene variation with risk of type 2 diabetes mellitus (T2DM) has been suggested. This is the first study performed in a population from Bosnia and Herzegovina (BH) in which the frequency of two common NAT2 polymorphisms, 341T>C (NAT2\*5) and 590G>A (NAT2\*6) was determined in diabetic patients. **METHODS:** The frequency of the NAT2\*5 (341T>C) and NAT2\*6 (590G>A) polymorphisms was analyzed by employing TaqMan SNP Genotyping Assays (Applied Biosystems) in a group of 63 patients with T2DM and 79 nondiabetic subjects. **RESULTS:** Our data demonstrated that the frequencies of NAT2\*5 (341T>C) and NAT2\*6 (590G>A) polymorphisms in BH population were in line with the Caucasians genotype data. The NAT2\*5 and NAT2\*6 alleles were in high linkage disequilibrium ( $D' = 0.969$ ). Strikingly, there was a significant difference in genotype frequencies for NAT2\*5 ( $p < 0.05$ ) and NAT2\*6 ( $p < 0.001$ ) polymorphisms between diabetic and nondiabetic subjects. NAT2\*5 polymorphism was associated with 2.4-fold increased risk for developing T2DM (adjusted OR = 2.40, 95% CI = 1.10-5.25,  $p = 0.028$ ). On the contrary, NAT2\*6 variant significantly decreased by 5-fold susceptibility to the disease (adjusted OR = 0.20, 95% CI = 0.09-0.43,  $p < 0.001$ ). **CONCLUSIONS:** Our data demonstrated that NAT2 genetic variation appeared to be an important risk factor in development of T2DM.

**Švraka E, Loga S, Brown I. Family quality of life: adult school children with intellectual disabilities in Bosnia and Herzegovina. J Intellect Disabil Res. 2011 Jun 13. doi: 10.1111/j.1365-2788.2011.01434.x. [Epub ahead of print]**

*Faculty of Health Studies, University of Sarajevo, Sarajevo, Bosnia and Herzegovina; Academy of Sciences and Arts of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina; Faculty of Social*

*Work, University of Toronto, Toronto, Ontario, Canada.*

**Aims:** This study endeavours to provide initial data on quality of life for families with adult children who have intellectual disabilities (ID) in the Canton of Sarajevo. **Methods:** The principal measure used was the Family Quality of life Survey 2006 - main caregivers of people with intellectual or developmental disabilities. The sample consisted of the main caregivers of 35 families with adult school children with ID who attended classes in a specially adapted programme in the Center of Vladimir Nazor and in the Vocational Secondary School in Sarajevo. Of the 35 participants, 21 were male and 14 female. Students with disabilities ranged from 19 to 32 years old (mean 21.45). **Results:** Consistent with previous research, the nine domains measured by the scale were all rated high for Importance. Opportunities were considered to be particularly low for Financial Well-Being and Support from Others. These domains were also rated lowest for Attainment and Satisfaction. Initiative was relatively high across all domains, and Stability (the degree to which things were seen as likely to improve or decline) varied slightly across domains but the means indicated that things are expected to stay almost the same or improve slightly. **Conclusions:** This research provides initial data for family quality of life in Bosnia and Herzegovina. It also provides suggestions for improving quality of life for families that have one or more members with ID. The results should also contribute to rejecting stereotypes and promoting inclusion of children with ID as well as the rights of their families.

**Zalihić D, Zalihić A. Comparison of the results of surgical and non-surgical treatment of combat urogenital injuries in Bosnia war 1992-1995. Coll Antropol. 2011 Mar;35(1):227-33.**

*University of Mostar, School of Medicine, Mostar, Bosnia and Herzegovina.*

Goal was to compare the results of surgical and non-surgical treatments of combat injuries of genitourinary system and to compare our data with data collected in the recent studies. The study was designed as a retrospective review of data collected in prospective databases. The data extracted from inpatients' medical records included demographics, mechanisms and type of injury, distribution of the lesions, clinical presentation features, applied diagnostic studies, treatment modalities, types of complication and results of treatment. Among 4.125 patients treated in the Mostar War Hospital, 111 had injury of genitourinary tract: 62 underwent a surgical and 49 non-surgical treatment. Mortality among operated patients was 16 (26%). Complications were noted in 47 patients (42%); in 33

(70%) were manifested as early complications, and 14 (30) as delayed ones ( $p = 0.006$ ). Among the surgically treated patients, 40 (36%) had some complication, in comparison to 8 (7.2%) patients with complications among non-surgically treated patients; which represent a statistically significant difference ( $p < 0.05$ ). In this study, there was a surprisingly high number of non-surgically treated patients, and this sub-group of UGT trauma patients had in some ways the superior treatment results in comparison with surgically treated patients. Conservatively treated patients had lower rate of complications, no mortality, and no patients with permanent disability.

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**Zerem E. Comment on the article about the evaluation of transabdominal ultrasonography performed by a gastroenterologist in his office: why should not all clinicians use transabdominal ultrasonography on a routine basis? J Clin Gastroenterol. 2011 May-Jun;45(5):476-7.**

No abstract available.

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**Zerem E, Imamović G, Mavija Z, Haračić B. Comments on the article about correlation between computerized tomography and surgery in acute pancreatitis. World J Gastroenterol. 2011 Jan 21;17(3):407-8.**

We read with great interest the article by Vege et al published in issue 34 of World J Gastroenterol 2010. The article evaluates the ability of contrast-enhanced computerized tomography (CECT) to characterize the nature of peripancreatic collections found at surgery. The results of their study indicate that most of the peripancreatic collections seen on CECT in patients with severe acute pancreatitis who require operative intervention contain necrotic tissue and CECT has a limited role in differentiating various types of collections. However, there are some points that need to be addressed, including data about the stage of acute pancreatitis in which CECT was done and the time span between CECT examination and surgery

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**Zerem E, Imamović G, Omerović S. What is the optimal treatment for pancreatic pseudocysts? Scand J Gastroenterol. 2011 Jun 30. [Epub ahead of print]**

*University Clinical Center Tuzla, Trnovac bb, Tuzla, Bosnia and Herzegovina.*

No abstract available.

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**Zerem E, Imamović G, Sušić A, Haračić B. Step-up approach to infected necrotising pancreatitis: a 20-year experience of percutaneous drainage in a single centre. Dig Liver Dis. 2011 Jun;43(6):478-83. Epub 2011 Apr 8.**

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

AIM: To evaluate the efficacy of step-up approach to infected necrotising pancreatitis. METHODS: Retrospective analysis of 86 patients treated by step-up approach from 1989 to 2009. Infection was confirmed by examination of aspirated material or by presence of free pancreatic gas at contrast-enhanced computed tomography. Conservative treatment was initially attempted in all patients; percutaneous catheter drainage was performed when conservative therapy failed; surgery was planned only if no clinical improvement was observed. Primary outcome was mortality. RESULTS: Fifteen patients (17.4%) were successfully treated with conservative treatment only. Percutaneous catheter drainage was performed in 69 (80.2%). Eight patients (9.3%) died, two at week 1 without drainage or surgery and six after percutaneous catheter drainage and surgery. Eleven patients were converted to surgery (12.8%). Organ failure occurred in 59/86 (68.6%) and multiorgan failure in 25/86 (29.1%). Median (interquartile ranges) hospital stay and catheter dwell times were 13 (9-47) and 15 (7-34) days, respectively. There were 2.61 catheter problems and 1.68 catheter changes per patient. CONCLUSIONS: The step-up approach is an effective and safe strategy for the treatment of infected necrotising pancreatitis. Percutaneous drainage can avert the need for surgery in the majority of patients.

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**Zerem E, Salkić N, Sušić A, Haračić B. Comments on the article about recurrence after surgical management of liver hydatid cyst. J Gastrointest Surg. 2011 Mar;15(3):536-7; author reply 538-9. Epub 2011 Jan 5.**

No abstract available.

by Nerma Tanović