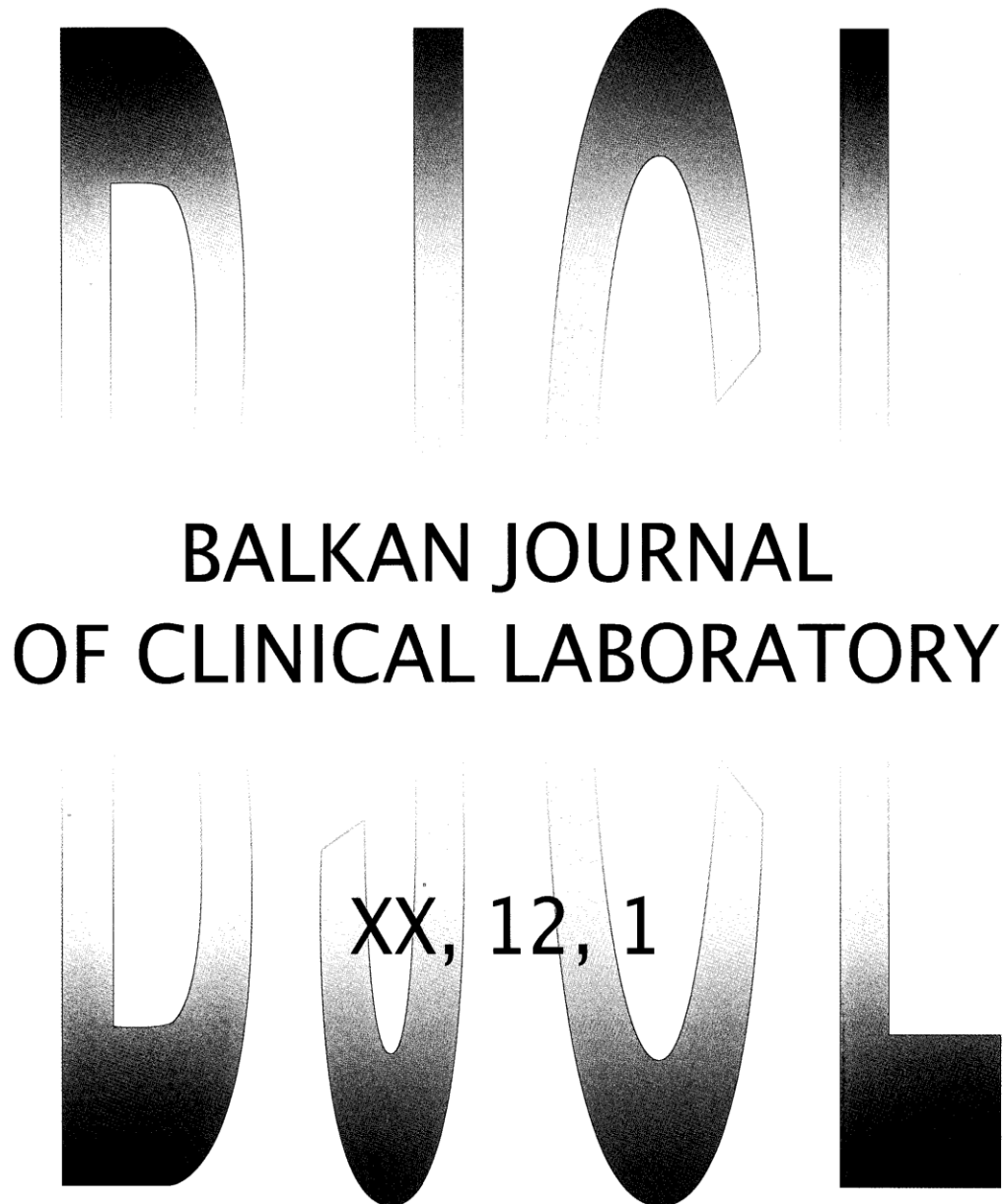


ISSN 1452-8258



**BALKAN JOURNAL  
OF CLINICAL LABORATORY**

**XX, 12, 1**

In this issue 20<sup>th</sup> Meeting of Balkan Clinical Laboratory Federation  
September 19-22, 2012, Belgrade, Serbia

# BJCL

BALKAN JOURNAL  
OF CLINICAL LABORATORY

Journal of the Balkan Clinical Laboratory Federation

VOLUME XX – 2012 – NUMBER 1

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ified bread for one month. Serum zinc and iron e measured before and after the study. ANOVA, t-test, paired t test and Food Processor were d for statistical analyses.

**Results:** Results showed a significant increase in zinc and iron levels in all the groups ( $p < 0.001$ ) compared to control ( $p > 0.05$ ). Absorption of zinc and iron in the group that consumed high-zinc bread was sig-

nificantly greater than that in the group that received low-zinc bread ( $p < 0.01$  and  $p < 0.05$  respectively).

**Conclusion:** It can be concluded that fortification of flour with 50–100 ppm zinc plays an important role in achieving adequate zinc intake and absorption in zinc-deficient people. It also appears that consuming zinc-fortified bread improves iron absorption.

### P111

#### THE IMPACT OF THE GHRD3(-)/D3(+) AND TCF7L2 GENE VARIANTS ON THE INSULIN DISPOSITION INDEX

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**Introduction:** The GH/IGF-I axis has a major impact on insulin sensitivity, while potential studies show that TCF7L2 influences T2D via its role on insulin secretion. This study presents an overview of the effect and analyzes the impact of the GHR exon-3 deletion/full length [GHRd3(-)/d3(+)], and TCF7L2 polymorphisms on the insulin disposition index.

**Methods:** The presence of GHRd3(-)/d3(+) was determined by affinity purified growth hormone binding protein (GHBP). To analyze the TCF7L2 gene polymorphism, genomic DNA was extracted from blood and genotyped by PCR-RFLP. The Hardy–Weinberg equilibrium and the  $\chi^2$  test were calculated by SPSS.

**Results:** The mirror image of GHRd3(+)/d3(-) are observed in plasma. The protein patterns show that they are variable in size (50 and 52 KD), for purified GHBP in subjects which belong to the extracellular

domain of GHRd3(-)/d3(+). The frequency of the T allele of rs7903146 (C/T) polymorphism was significantly higher in diabetic subjects ( $48 \pm 2\%$ ) compared to that in normal subjects ( $37 \pm 2.4\%$ ).

**Conclusion:** The GHRd3(+)/IGF-I axis has an important role in insulin resistance. The results show that the rs7903146 of TCF7L2 is an important susceptibility gene for T2D in our population. Consequently, this polymorphism is important in T2D patients carrying GHRd3(+)/d3(+) which expose pancreatic  $\beta$ -cell activity and capacity. We hypothesize that the combination of the GHRd3(-)/d3(-) that express the IGF-I together with the absence of T-allele of TCF7L2 increases the insulin disposition index as a protective index against T2DM. Further studies should be carried out to show the relationship between GHRd3 and TCF7L2 in T2DM.

### P112

#### TOTAL ANTIOXIDANTS IN THE PLASMA OF HEMODIALYSED PATIENTS AND HEALTHY CONTROLS AS MEASURED BY TWO COMMERCIAL ASSAYS

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**Introduction:** As a result of an increased interest in oxidative stress research, in both basic and clinical research, numerous commercial test kits became available. The aim of this study was to evaluate the results

for total antioxidants as measured by two commercial assays in a complex clinical condition such as single hemodialysis session in patients on chronic hemodialysis treatment, in comparison to healthy controls.

**Methods:** The level of plasma total antioxidants was measured by BAP (Biological Antioxidant Potential; Diacron, Grosseto, Italy) and TAS (Total Antioxidant Status; Rel Assay Diagnostics, Gaziantep, Turkey) commercial test kits. Thirty-two patients, adults with end-stage renal disease, on chronic hemodialysis treatment for more than 1 year, and treated with a protocol of three hemodialysis sessions a week, were included in the study. The control group consisted of 47 volunteers selected from healthy candidates for military service.

**Results:** Patients before hemodialysis had significantly higher BAP values compared to the healthy controls ( $p < 0.01$ ). As a result of the hemodialysis session the average BAP value dropped by 12.6% ( $p < 0.001$ ) when compared to the values before hemodialysis. The BAP values measured after the hemodialysis were

significantly lower than those of healthy controls ( $p < 0.01$ ). When measured by the TAS assay, patients before hemodialysis again had higher values of total antioxidants than controls, but the difference showed higher statistic significance:  $p < 0.001$ . As a result of the hemodialysis session the average TAS value decreased more (35.2%) than that of BAP ( $p < 0.001$ ) when compared to the values before hemodialysis. The TAS values measured after the hemodialysis were lower than those measured in healthy controls, but this difference was not statistically significant.

**Discussion:** From our results it is clear that for the same set of samples tested in parallel by two commercial methods for the measurement of total antioxidants sometimes different conclusions can be drawn.

### P113 TOTAL PSA, DIGITAL RECTAL EXAMINATION, ULTRASONOGRAPHY, AND PSA DENSITY AS CRITERIA FOR A PROSTATE BIOPSY REQUEST

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**Introduction:** The widespread use of the prostate specific antigen (PSA) has largely improved the early diagnostics of prostate carcinoma. However, prostate biopsy remains the most accurate method for diagnosing the disease. The aim of this study was to elucidate the criteria for requesting a prostate biopsy in patients with symptoms in the lower urinary tract and a concomitant finding of an enlarged prostate, as measured by ultrasound (prostate volume greater than 25 ccm).

**Methods:** The study included 35 patients with symptoms in the lower urinary tract on their first visit to the urologist, who were further diagnosed with benign prostate hyperplasia. The diagnosis was confirmed by a negative result of the biopsy. We have analyzed the PSA values (Total PSA), the findings of digital rectal examination (DRE) and the PSA density [PSA (ng/mL) /prostate volume (ccm)].

**Results:** One of the patients had the PSA value lower than 4 ng/mL, 16 of them were in the »grey« zone, and 18 had PSA values above 10 ng/mL. Regarding the DRE findings, 3 patients had a normal result, whereas the rest (32) were suspect. In contrast to PSA and DRE, the results for PSA density showed the following: 15 patients had PSA density of up to 0.15, which is considered as a cut-off value and a normal result, and 20 patients had PSA density of more than 0.15.

**Discussion:** From these results we can conclude that PSA density can discriminate between benign prostate hyperplasia and prostate carcinoma better than PSA and DRE, and its use could reduce the number of negative biopsies.