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## PS020

### Influence of energy drinks on hemodynamic parameters in young healthy adults – Randomized double-blind placebo controlled cross-over study

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**Aim:** Assessment of the influence of single dose of energy drink on blood pressure, heart rate, ECG, cardiac output and vascular compliance in healthy volunteers.

**Introduction:** An energy drink (ED) is a type of beverage containing stimulant drugs, caffeine, taurine, which is marketed as providing mental and physical stimulation. The popularity of product is increasing especially among teenagers and young adults. Some research suggest that its consumption may have negative effect on cardiovascular system.

**Methods:** A randomized double-blind placebo controlled cross-over study was conducted on 18 healthy volunteers (7 female, 11 male, mean age  $23.67 \pm 1.19$ ). Subjects received: 500 ml of energy drink containing 160 mg of caffeine, 2 g of taurine and 50 mg of guarana or 500 ml of placebo. Participants drank beverages in random order during two different meetings. Drinks did not differ in taste, smell and color. In all participants before and after consumption of a drink following procedures were performed: peripheral and central systolic and diastolic blood pressure (SBP and DBP) measurement, ECG recording, echocardiography, and pulse wave velocity analysis – in the same sequence and time intervals for every participant.

**Results:** ED consumption was related to significant increase of SBP in 75 min of observation compared to placebo ( $\Delta$ SBP for ED  $5.7 \pm 10.2$  mmHg vs  $-0.3 \pm 7.2$  mmHg for P,  $p=0.03$ ). ED caused increase in central SBP ( $107.8 \pm 13.2$  vs  $115.6 \pm 12.1$  mmHg,  $p=0.0005$ ), and central DBP ( $73.9 \pm 11.9$  vs  $78.1 \pm 10.2$  mmHg,  $p=0.02$ ). However comparison between placebo and ED revealed no significant differences in these parameters. The ECG parameters (HR, PQ, QRS and QTc intervals, axis of P wave, QRS complex, T wave) did not reveal significant differences between groups. There were no differences in echocardiographically determined cardiac output and LVEF.

**Conclusion:** Single dose ED consumption increases peripheral and central SBP. This effect is probably mediated by vascular wall properties and not by cardiac performance.

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## PS055

### Analysis of genetic polymorphism 4a/b of the eNOS gene in infertile men

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**Aim:** The aim of our study was the analysis of genetic polymorphism 4a/b of the eNOS gene in infertile men with idiopathic infertility, correlation of genotype and phenotype in infertile men and comparing the results of testing of genetic polymorphism 4a/b with the results from the control group.

**Introduction:** Male infertility of unknown etiology represents a common medical and social problem, in whose basis lies a combination of genetic and environmental factors. Several recent studies have pointed to the possible connection of polymorphisms in eNOS gene and idiopathic male infertility.

**Methods:** The study included 50 infertile men with idiopathic infertility and 50 fertile controls. 4a4b polymorphism was detected by polymerase chain reaction (PCR).

**Results:** 4b4b genotype was detected in 27 (54%) patients and 36 (72%) controls, 4a4b genotype in 21 (42%) patients and 13 (26%) controls and 4a4a genotype detected in 2 (4%) patients and 1 (2%) control group participant. 4b allele frequency was 75% in the patient population and 85% in the control population, and frequency of allele 4a was 25% with patients and 15% in the control group. There was no statistically significant difference in the distribution of genotypes ( $p=0.062$ ) nor alleles ( $p=0.111$ ) between these two populations. Comparing 4a/b genotypes and serum concentration of FSH within patient group, we've detected a highly significant correlation ( $p<0.001$ ), where all carriers of 4b4b genotype had physiological concentration of serum FSH, while most of 4a4a and 4a4b carriers had higher serum FSH values.

**Conclusion:** Per our results VNTR (4a/b) is not connected to idiopathic male infertility in Serbian men, but they did show a highly significant correlation between serum FSH concentration and 4a/b genotype of infertile men.

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## PS115

### Intravenous iron treatment effect to patients on hemodialysis



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**Aim:** To evaluate the coherence between intravenous iron therapy and the inflammatory indicators to patients on hemodialysis.

**Introduction:** when the kidney function is failing, the number, of patients who has a final stage kidney disease with anemia, is increasing. One of the most important reasons of anemia is iron deficiency. The iron treatment may be intravenous or oral. Though the oral treatment is cheaper, it may cause gastrointestinal disorders. Intravenous iron therapy has a better tolerance, but earlier studies had showed that it increases the risk of infections to patients on hemodialysis.

**Methods:** The retrospective study included 33 hemodialysis patients who undergone the intravenous therapy during the 2016-10 and 2016-12 in Vilnius university hospital. The absolute numbers of neutrophils and lymphocytes, C-reactive protein and procalcitonin were assessed before the treatment with intravenous iron and a month after it.

**Results:** we analyzed 13 men and 20 women, the mean age 59 years, the mean creatinine  $760 \mu\text{mol/l}$ , the mean hemoglobin  $105 \text{g/l}$ . By the test of Wilcoxon signed rank the means of neutrophils and C-reactive protein increased after the start of the treatment with iron (the mean of C-reactive protein increased

