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ABSTRACTS VOLUME



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T055

DOES FERRITIN AND LEPTIN LEVEL IN YOUNG WOMEN WITH POLYCYSTIC OVARY SYNDROME DEPEND ON THE NUTRITIONAL STATUS?

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Background: Polycystic ovary syndrome (PCOS) is one of the pathological conditions associated with inflammation and oxidative stress. Ferritin was considered as one of the inflammatory reactants or markers of oxidative status. The question remains whether elevated serum ferritin levels representing iron overload in patients with PCOS are the cause or consequence of insulin resistance existing in these subjects. The aim of this study was to test the hypothesis that serum ferritin, like the leptin levels in young women with polycystic ovary syndrome depend on the nutritional status.

Methods: Study included 54 female patients, in the age of 18 to 40 years, with proven PCOS (among whom 32 lean, with body mass index-BMI <25 kg/m², and 22 overweight or obese, with BMI>25 kg/m²) and 46 healthy control female patients, in the age of 20 to 36 years (among whom 29 lean and 17 overweight or obese). PCOS was diagnosed based on well-known clinic, biochemical and ultrasonographic criteria. Ferritin was measured by immunochemiluminescence method, while leptin was measured in blood samples by sandwich enzyme-linked immunosorbent assay (ELISA).

Results: In all the subjects included in this investigation there was a strong positive correlation between leptin and ferritin levels ($r=0.429$, $P<0.001$), as well as between leptin and BMI ($r=0.930$, $P<0.001$) and ferritin and BMI ($r=0.467$, $P<0.001$). However, while leptin levels differed significantly between lean and overweight healthy control ($P<0.001$) and PCOS ($P<0.001$) subjects, this could not be demonstrated for ferritin. Ferritin levels did not differ significantly neither between lean and overweight healthy control, nor between lean and overweight PCOS subjects. At the same time, ferritin levels were significantly higher in lean subjects with PCOS than in lean healthy control subjects ($p=0.025$), as well as in overweight patients with PCOS than in overweight healthy control subjects ($P=0.018$).

Conclusions: Results of this investigation have suggested that while leptin levels depend almost solely on nutritional status, ferritin levels were determined by some additional factors in young women with PCOS. Role of inflammation, oxidative stress and/or insulin resistance in this context has to be determined in future investigations.

T056

CHRONIC MAGNESIUM SUPPLEMENTATION INFLUENCES BASAL BLOOD LEVEL OF CORTISOL AND TESTOSTERONE/CORTISOL RATIO IN RUGBY PLAYERS

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Background: There is a special interest during last years on the effects that certain diet supplements may have on endocrine responses of physically active persons during intense exercise and competition. Magnesium ion is known to influence the secretion of certain steroid hormones and by its role in the pathophysiology of physical exercise. The purpose of this study was to investigate if a four-week administration of magnesium oral supplement affects basal serum values of ACTH, cortisol (C), FSH, LH, testosterone (T), and T/C ratio in male rugby amateur players.

Methods: Blood samples were collected from 13 rugby players (22.9±4.6 years) before and 28 days after magnesium oral supplementation (2x250 mg of Magnesium 250mg[®], Natural Wealth[®], NBTY Inc.). Serum levels of hormones were measured using Beckman Coulter immunoassays on Access[®] 2 analyzer. Statistical significance between hormone levels obtained prior and after magnesium administration was calculated using Student's t-test.

Results: Even though there was no change in the serum level of ACTH, our study showed significant reduction in C level ($P<0.01$) after Mg supplementation. Analysis of pituitary-gonadal axis hormones levels didn't show any statistically significant changes apart from trend in reduction LH level ($P=0.062$). The T/C ratio was significantly increased ($P<0.01$) comparing to values measured prior magnesium supplementation.

Conclusion: Results of our study imply that oral magnesium supplementation in persons regularly subjected to intense physical and psychological stress, reduces basal level of stress hormone cortisol without affecting level of pituitary ACTH. This change in cortisol level is mainly responsible for an increase in T/C ratio, which is known to be significantly diminished after intense physical exercise.