investigate the association of ADIPOQ gene 45T > G with risk of obesity and metabolic syndrome (MS) in Egyptian female adolescents.

Methods The cross-sectional study was performed on 285 Egyptian female adolescents (mean age: 15.5 ± 2.3 and mean body mass index: 20.34 ± 5.67). Genotyping of adiponectin 45T > G polymorphism was detected by PCR-RFLP analysis. Anthropometric and biochemical parameters were measured by standard procedures. Insulin resistance was determined by the Homeostasis Model Assessment of Insulin Resistance (HOMA-IR). Body fat was measured by Tanita Body Composition Analyzer.

Results MS cases showed a higher distribution of TG and GG genotypes compared with cases without MS. Carriers of the mutated genotypes (TG+GG) exhibited higher levels of body mass index, body fat percentage, blood pressure, fasting insulin, fasting glucose, HOMA-IR, triglyceride, whereas lower levels of HDL-C and serum concentrations of adiponectin as compared with TT carriers. Association between MS and mutated genotypes of ADIPOQ gene 45T > G was observed (adjusted odds ratios (OR) = 3.65 for TG+GG carriers, OR = 2.25 for GG carriers and OR = 1.9 for G allele carriers).

Conclusions The study suggests that adiponectin 45T > G polymorphism has a significant role in the development of MS in Egyptian female adolescents, possibly through an interaction with increase body weight and hypoadiponectinemia.

Poster symposium

THE EFFECT OF BODY COMPOSITION CHANGES ON BONE METABOLISM IN ADOLESCENTS WITH ANOREXIA NERVOSA

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Background The correlation between body composition changes, osteopenia and alterations of leptin, Insulin-like-Growth Factor-1 (IGF-1) and cortisol levels has been previously found in patients with anorexia nervosa (AN).

Objective The aim of this study was to investigate the relationship between bone formation (osteocalcin-OC) and bone resorption markers (BetaCrossLaps-BCL) and changes in bone mineral density (BMD), body mass index (BMI), body fat percentage (BF %), leptin, IGF-1 and cortisol levels.

Methods BMI, spinal Z-score (DXA), BF% and leptin, IGF-1, OC, BCL, cortisol levels were measured in 2 groups of girls: AN (n = 20, age 17.2 ± 0.3 years, amenorrhoea duration 21.2 ± 0.4 months) and normal weight (n = 20, age 17.5 ± 0.2 years).

Results BMI (14.2 ± 0.86 vs 20.4 ± 0.86, t = -22.77, p = 0.00009), BF% (5.0 ± 1.5 vs 22.9 ± 2.7, t = -25.79, p = 0.0001), Z score (10.5 ± 30.5, Z = -5.41, p = 0.0006) and levels of IGF-1 (308.1 ± 42.6 vs 538 ± 21.6; t = -9.75, p = 0.00007), leptin (10.5 ± 30.5, Z = -5.41, p = 0.0006) and OC (16.0 ± 3.49 vs 37.2 ± 5.34, t = -14.84, p = 0.0002) were significantly lower in AN group while levels of cortisol (713 ± 0.937, p = 0.0006), BF% (0.983, p = 0.0008), Z score (0.967, p = 0.0004), leptin (0.985, p = 0.0001) and IGF-1 levels (t = 0.937, p = 0.0006); negative correlation between OC and cortisol (r = -0.982, p = 0.0005); negative correlation between BCL and BMI (r = -0.764, p = 0.00009), BF% (r = -0.724, p = 0.0001), Z score (r = -0.835, p = 0.0002), leptin (r = -0.777, p = 0.0004) and IGF-1 (r = -0.766, p = 0.0008) and positive correlation between BCL and cortisol (r = 0.815, p = 0.00001).

Conclusion Adolescents with AN have significantly altered body composition, impairment of leptin, IGF-1 and cortisol secretion, alterations in bone turnover and severe osteopenia. There is a correlation between bone turnover markers and Z-score, BMI and BF% in patients with AN. We found a significant relationship between leptin, IGF-1 and cortisol levels and bone turnover markers in AN patients.

IMPACT OF NUTRITIONAL STATUS ON THE PUBERTAL TRANSITION IN A SAMPLE OF EGYPTIAN SCHOOL GIRLS

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Poster symposium

THE EFFECT OF VITAMIN D REPLACEMENT THERAPY ON INSULIN RESISTANCE AND HYPERANDROGENISM IN ADOLESCENTS WITH POLYCYSTIC OVARY SYNDROME

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