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.

PS-005 THE EFFECT OF BODY COMPOSITION CHANGES ON BONE METABOLISM IN ADOLESCENTS WITH ANOREXIA NERVOSA

¹N Paunovic, ²V Bembo, ¹V Culačić-Vojinovic. ¹Endocrinology Division Internal Medicine Department, Railway Health Care Institute, Belgrade, Serbia; ²Department of Pediatrics and Neonatology, Hospital in Fondi ASL Latina, Fondi Latina, Italy

10.1136/archdischild-2014-307384.300

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, amenorrhea 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 , $t = -22.77$, $p = 0.0009$), BF% (5.0 ± 1.5 vs 22.9 ± 2.7 , $t = -25.79$, $p = 0.0001$), Z score (10.5 vs 30.5 , $Z = -5.41$, $p = 0.0006$) and levels of IGF-1 (308.1 ± 42.6 vs 538 ± 21.6 ; $t = -9.75$, $p = 0.0007$), leptin (10.5 vs 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 ± 69.1 vs 451 ± 15.9 ; $t = 11.82$, $p = 0.0003$) and BCL (28.1 vs 12.9 , $Z = -4.1$, $p = 0.0004$) were higher. In AN group we found: positive correlation between OC and BMI ($r = 0.984$, $p = 0.0008$), BF% ($r = 0.983$, $p = 0.0008$), Z score ($r = 0.967$, $p = 0.0004$), leptin ($r = 0.985$, $p = 0.0001$) and IGF-1 levels ($r = 0.937$, $p = 0.0006$); negative correlation between OC and cortisol ($r = -0.982$, $p = 0.0005$); negative correlation between

BCL and BMI ($r = -0.764$, $p = 0.0009$), 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 ($r = 0.815$, $p = 0.0001$).

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.

PS-006 IMPACT OF NUTRITIONAL STATUS ON THE PUBERTAL TRANSITION IN A SAMPLE OF EGYPTIAN SCHOOL GIRLS

¹NE Hassan, ¹SA El-Masry, ²MM Abu shady. ¹Biological Anthropology, National Research Centre, Giza, Egypt; ²Child Health, National Research Centre, Giza, Egypt

10.1136/archdischild-2014-307384.301

Pubertal growth is influenced by many factors including environmental and nutritional.

Objective To assess impact of nutritional status on pubertal staging, ovarian and uterine volumes among school girls.

Method Study was cross sectional carried out on 1000 healthy school girls, aged 8–18 years selected randomly. They were categorised: according to their ages into three groups : 8–12 years, 13–15 years and 16–18 years ± 6 months, then according to their body mass index percentile to normal weight : (≥ 15 – <85), overweight (≥ 85 – <95) and Obese: (≥ 95). All girls were subjected for physical, anthropometric [weight, height, body mass index], nutritional markers (WAZ (weight/age Z score), HAZ (height/age Z score) and BMI-Z (body mass index Z score), pubertal assessment (Tanner stage) and pelvic trans abdominal sonography (uterine and ovarian volumes).

Results Highly significant differences in ovarian and uterine volumes and nutritional markers (WAZ, HAZ and BMI-Z score) were detected among different grades of puberty in the two age groups (8–12 years, 13–15 years) coming in advance of obese girls (with increase of BMI); except HAZ in the second age group. Girls aged 16–18 years reached to final volume for the uterus and ovary with insignificant differences. Pubertal stage, ovarian and uterine sizes were highly significantly correlated with nutritional markers. Mean ages of onset: of puberty, menarche and complete puberty were, 11.65 ± 1.84 , 14.79 ± 1.75 and 15.02 ± 1.68 years respectively.

Conclusion Nutritional status has a crucial role in determining pubertal stage, ovarian and uterine volumes among Egyptian girls during the pubertal process.

PS-007 THE EFFECT OF VITAMIN D REPLACEMENT THERAPY ON INSULIN RESISTANCE AND HYPERANDROGENISM IN ADOLESCENTS WITH POLYCYSTIC OVARY SYNDROME

¹N Paunovic, ²V Bembo, ¹V Culačić-Vojinovic, ³A Stevanovic. ¹Endocrinology Division Internal Medicine Department, Railway Health Care Institute, Belgrade, Serbia; ²Department of Pediatrics and Neonatology, Hospital in Fondi ASL Latina, Fondi Latina, Italy; ³Cardiology Division Internal Medicine Department, Railway Health Care Institute, Belgrade, Serbia

10.1136/archdischild-2014-307384.302