

## The role of Bulimia Nervosa in hormonal and metabolic profile, as well as in menstrual pattern, of overweight and obese adolescents

*V Karountzos (GR) [1], P TSIMARIS (GR) [2], K D DIMOPOULOS (GR) [3], E STERGIOTI (GR) [4], F BACOPOULOU (GR) [5], G PANOTOPOULOS (GR) [6], E PAPACHATZOPOULOU (GR) [7], N ATHANASOPOULOS (GR) [8], A GIANNOULI (GR) [9], A VATOPOULOU (GR) [10], D APOSTOLAKI (GR) [11], I IORDANIDOU (GR) , K PANOULIS (GR) [12], E DELIGEOROGLOU (GR) [13]*

**Context - Objective:** The aim of this study is to assess the differences between overweight (OW) and obese (OB) adolescents with (BN+) or without (BN-) Bulimia Nervosa regarding menstrual patterns, Sex Hormone-Binding Globulin (SHBG), Testosterone (T), Free Androgen Index (FAI), Insulin and ovarian ultrasonographic (U/S) characteristics.

**Methods - Patient(s) - Intervention(s):** Prospective study of 32 BN+ compared to 67 BN- OW & OB adolescents matched for age, BMI, WHR and Waist Circumference. Menstrual patterns were recorded, SHBG, T, FAI, glucose and Insulin were measured, while ovarian U/S characteristics were assessed in all girls.

**Main Outcome Measure(s) - Result(s):** 21/32 BN+ and 26/67 BN- girls reported oligomenorrhea, amenorrhoea or polymenorrhea (65,6% vs 38,8%,  $p=0.012$ ). Mean fasting Insulin levels (27.32 vs 22.74 mIU/L), mean fasting Glucose levels (107.7 vs 96.16 mg/dl) mean serum T levels (1.46 vs 1.12 ng/ml), mean FAI (7.6 vs 4.6) and mean SHBG (66.65 vs 84.34 nmol/l) were significantly different in BN+ compared to BN- OW and OB adolescents (all  $p<0.05$ ). There was no significant difference in U/S ovarian characteristics between the two Groups.

**Conclusions:** BN+ OW and OB adolescents, independently of body weight or fat distribution, are in greater risk to present menstrual disorders, fasting glucose and Insulin disorders, as well as hyperandrogenemia compared to controls. A multidisciplinary approach is always indicated for these patients with a seriously unhealthy hormonal and metabolic profile, while further studies, with greater sample are needed to confirm these results.

- [1] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, ,  
[2] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [3] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [4] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [5] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [6] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [7] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [8] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [9] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [10] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department

of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [11] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [12] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital, [13] Division of Pediatric-Adolescent Gynecology & Reconstructive Surgery, 2nd Department of Ob/Gyn, Medical School, University of Athens, "Aretaieion" Hospital