Types of reproductive disorders in underweight and overweight young females since childhood and correlations of respective hormonal changes with BMI

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Context: Higher risks of reproductive problems have been found in underweight and overweight women with rapid weight gain or loss but evidence is inconsistent especially in relation to the effect of the age of body weight changes.

Objective: Detection of the prevalence of different reproductive disorders and correlations of respective hormonal changes with BMI in young females with thinness or obesity since childhood.

Methods: BMI, waist-to-hip ratio, age of body weight changes, assessment of hirsutism, acne, stretch marks and hyperpigmentation, menstrual disturbances or fertility problems were recorded. Gynecological ultrasound was performed. FSH, LH, E2, TT, FT, PRL, SHBG, DHEA-S, 17?-OHP, COR, HOMA-IR were measured.

Patients: 48 underweight and 55 overweight/obese young females with different reproductive problems were investigated.

Results: 74.5% of overweight and obese patients had upper body fat distribution, whilst underweight patients had mostly equal (66.7%) or lower body fat distribution (31.3%) (P=.000). PCOS and metabolic syndrome was the most frequent in overweight/obese patients, whilst NCAH and ovarian dysfunction prevailed in underweight patients (P<.05). Infertility was mostly observed in patients with high BMI (P<.05). Hypogonadotropic hypogonadism was not found in females who were lean from childhood. Correlation was established between the onset of menstrual disruption and progression of BMI changes (R=.448, P=.005).

FSH and SHBG levels were higher in low BMI patients, whilst FT and TT levels were higher in high BMI females. BMI negatively correlated with FSH and SHBG and positively correlated with FT and TT (P<.05).

Conclusions: Peculiarities of menstrual function and hormonal changes in young females with thinness or obesity since childhood are related to the types of reproductive disorders and their childhood BMI.