Relation of anthropometric measures and insulin resistance with anti-mullerian hormone in premenopausal women

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Introduction: It has been suggested that obesity is associated with decreased level of anti-mullerian hormone (AMH) which considered as a good marker of ovarian reserve.

Aim: The aim is to evaluate the association between obesity and AMH and whether there is relation of the anthropometric measures and insulin resistance with the level of AMH in Egyptian premenopausal women.

Subjects & Methods: Eighty premenopausal women with BMI more than 30 (obese group) and 80 age-matched healthy lean women (control group). BMI, waist circumference (WC), blood pressure (BP) were measured. Fasting blood glucose (FBS), fasting insulin (FI), insulin resistance (HOMA-IR), high sensitive C-reactive protein (hs-CRP) and AMH were analyzed.

Results: AMH levels in obese group were significantly lower than control group. There were significant negative correlations between each of BMI, WC, FBG, hs-CRP, FI and HOMA-IR with AMH (r =-0.214, -0.226, 0.141, -0.264, -0.241 and -0.258 respectively) (all p values ≤ 0.05). With forward stepwise linear regression analysis we found that HOMA-IR was significantly and independently related to AMH; (B=-0.172; 95% CI -0.273: -0.071). Furthermore, HOMA-IR was confirmed to be an independent predictor of AMH after adjustment of age and BMI; (B = - 0.173; 95% CI − 0.274; - 0.072) and also by adjustment of age and WC; (B= -0.135 95%CI -0.268; -0.001).

Conclusion: Obesity and insulin resistance are associated with decreased ovarian reserve among Egyptian premenopausal women.

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