Objectives:
To investigate serum levels of inhibin B (INHB) in women with polycystic ovary syndrome (PCOS) comparing with normal women, and the relationship with body mass index (BMI).

Methods:
Within this prospective study, 150 PCOS cases according to the Rotterdam Criteria and 150 healthy women matched by age and weight as controls were included. 75 normal-weight (BMI: 18-25 kg/m²) and 75 obese or overweight (BMI >= 25 kg/m²) women were included in PCOS and healthy women respectively. In all subjects, INHB, follicle-stimulating hormone (FSH); luteinizing hormone (LH), total testosterone (T), prolactin (PRL), fasting plasma glucose (FPG), fasting insulin (FINS) were measured in early follicular phase. Insulin resistance indexes (Homeostatic Model Assessment) (HOMA-IR) and Quantitative Insulin Sensitivity Check Index (QUICKI) were calculated by the values of FPG and FINS. Additionally ovarian volume and No. of follicles 2-9 mm were assessed.

Results:
INHB levels were significantly higher in PCOS cases compared with healthy women (p<0.05) and lower in obese group than those in normal-weight women both for PCOS cases and healthy women (p<0.05). No significant difference was found regarding age, the mean levels of FSH, total T, PRL, ovarian volume and No. of follicles 2-9 mm between obese and normal-weight both for PCOS cases and healthy women. LH levels and the values of QUICKI were significantly lower and levels of FPG, FINS and HOMA-IR were significantly higher in obese women than those in normal-weight women both for PCOS cases and healthy women (p<0.05). In PCOS cases, INHB levels were significantly positively correlated with mean ovarian volume, total number of 2-9mm follicles and levels of LH, and negatively with BMI.

Conclusions:
INHB is significantly increased in PCOS cases and closely related to the development of PCOS. Moreover, INHB levels are negatively affected by increased adiposity in both women with the syndrome and normal control subjects. Increased INHB levels in women with PCOS are the results of polycystic ovary and increased LH mainly.