

Polycystic Ovarian Syndrome

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INSULIN RESISTANCE AND METABOLIC SYNDROME AMONG DIFFERENT PHENOTYPES OF WOMEN WITH POLYCYSTIC OVARY SYNDROME

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Background: Polycystic ovary syndrome (PCOS) is a heterogeneous disorder of uncertain etiology.

Objectives: To see the phenotypes and frequencies of insulin resistance and metabolic syndrome in PCOS.

Materials & Methods: This study included 100 PCOS women (age, mean±SD: 23±5 years; body mass index, BMI: 27.6±4.6 kg/m²), recruited on the basis of Rotterdam criteria and 25 healthy controls (age, mean±SD: 24±5 years; BMI: 24.2±4.9 kg/m²). Hormonal analysis was done using chemiluminescent immunoassay. PCOS phenotypes were defined as: A (oligo-anovulation + hyperandrogenism + PCO), B (oligo-anovulation + hyperandrogenism), C (hyperandrogenism + PCO) and D (oligo-anovulation + PCO).

Results: Frequency of PCOS phenotypes were highest for A (57%), followed by D (16%), B (14%) and C (13%). BMI, waist circumference (WC), waist/hip ratio and Ferriman-Gallwey (FG) score showed statistically significant difference when control group was included, but not among the PCOS phenotypes. Highest value of fasting insulin was observed in A followed by D, B and C, and all were higher than control. Frequencies for pre-diabetes, insulin resistance and metabolic syndrome were significantly higher in PCOS. Phenotypes (A vs. B vs. C vs. D) also showed difference for total testosterone (85.82±28.44

vs. 82.84±22.7 vs. 76.09±27.5 vs. 34.35±5.17 ng/dl; p<0.001); testosterone was higher in A, B, C but all had significantly higher level than D (p<0.001 for all). Homeostatic model assessment (HOMA-IR) significantly correlated with BMI, fasting blood glucose, 2-h glucose, total cholesterol and triglyceride in PCOS. Logistic regression showed that age > 25 years, WC > 80 cm, BMI > 25 kg/m², and FG score were risk factors for metabolic syndrome. Using IR as a dependent variable, A and C was associated with 17-fold, 13-fold and 11-fold increased risk of developing insulin resistance, while phenotype D with 9-fold compared to control.

Conclusions: Phenotype A is the most common, followed by others, while A and B have adverse metabolic outcome.

Biography

Hurjahan Banu is presently working in the PCOS Study Group and holds an FCPS Degree in Endocrinology. She is currently a Post-graduate Fellow and a permanent Staff Researcher in the Department of Endocrinology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh. Her research interests are in PCOS, Infertility, Obesity, Diabetes and Thyroid Disorders. She has already published few articles in national and international journals.

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