INSULIN RECEPTOR (RS2059807) AND INSULIN RECEPTOR SUBSTRATE 1 (RS1801278) GENES POLYMORPHISMSIN POLYCYSTIC OVARY SYNDROME

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Background: Insulin resistance (IR) plays central role in the pathogenesis of polycystic ovary syndrome (PCOS). Alteration of single nucleotide polymorphisms (SNP) of gene encoding insulin receptor (INSR) and insulin receptor substrate 1 (IRS1) may be associated with insulin resistance and development of PCOS. To see the allele frequency of INSR (rs2059807) and IRS-1(rs1801278) genes polymorphisms and their associations with Bangladeshi women with PCOS. **Methods:** This cross-sectional study was done among 93 PCOS women (13-35 years) and 79 of age-matched healthy control in the department of Endocrinology, BSMMU. Clinical, biochemical and hormonal profile were recorded. Venous blood was taken in fasting state to measure blood glucose, insulin and genotypes Blood glucose was analyzed by glucose oxidase and insulin by chemiluminescent microparticle immunoassay. SNP genotyping were done by commercial sequencing services. **Results:** The risk allele (G) frequency for INSR (rs2059807) (p=1.00) and risk allele (T) for IRS-1 (rs1801278) (p=0.367) were statistically similar. Considering dominant, recessive, co-dominant, and over-dominant models, there were no significant differences between the study groups for both genes. Among the different manifestations percentage of IR was significantly raised in wild group of only IRS1 gene. **Conclusion:** This study failed to reveal any association between PCOS and Insulin Receptor (rs2059807), Insulin Receptor Substrate 1 (rs1801278) gene polymorphism. Only the percentage of IR was found higher in wild group than the mutant group in IRS1 gene.

Keywords: Polycystic Ovary Syndrome, Insulin receptor gene, Insulin receptor substrate-1 gene