9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Poster Presentations

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The hormone-sensitive lipase polymorphism (C-60G) is related with recurrent pregnancy loss in women with polycystic ovary syndrome

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Background: Lipid metabolism disruption is related to the development of polycystic ovary syndrome (PCOS) in women of reproductive age. Hormone-sensitive lipase (HSL) is an intracellular lipase that has a crucial role in normal lipid metabolism.
Objective: This study aimed to assess the frequency of C-60G polymorphism of HSL in healthy women and PCOS women, and its correlation with infertility and abortion in PCOS patients.
Materials and Methods: A total of 324 PCOS patients (including 199 infertile patients and 125 patients with a history of recurrent abortion) and 144 healthy controls enrolled in this study. Biochemical parameters were measured and the genotypes of C-60G polymorphism of the *HSL* gene were determined using PCR-restriction fragment length polymorphism techniques.
Results: There was no significant differences in the genotype and allele frequencies of C-60G polymorphism between PCOS, PCOS-infertile woman and non-PCOS subjects. However, a higher percentage of combined variants (CG+GG) and CG genotypes, as well as G allele was found in the PCOS-abortion group in comparison with non-PCOS women. The presence of the G allele conferred a 2.4-fold risk for abortion in women with PCOS (OR: 2.4, 95% CI [1.22-4.70], p = 0.011). Furthermore, a significant correlation between CG or GG genotype of HSL and the level of free testosterone was observed.
Conclusion: According to the obtained results, the C-60G polymorphism in the HSL promoter was associated with PCOS-related abortion, possibly through increasing the level of free testosterone. Therefore, the rs34845087 polymorphism may be considered as a promising prognostic biomarker for abortion in women with PCOS.

Key words: *Polycystic ovary syndrome, Hormone-sensitive lipase, Infertility, Abortion.*