

Study of four SNPs in SLC6A14, INSR, TAS2R38 and OR2W3 genes for association with Iranian idiopathic infertile men.

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Abstract

Back ground- Genome wide SNP association study (GWAS) has reported several SNPs that had potential relevance to oligospermia and azoospermia in idiopathic infertile men in European population. Four of these relevant SNPs are in INSR (T132903C), SLC6A14 (C109869T), OR2W3 (T824C) and TAS2R38 (T886C) genes have reported to cause oligospermia and azoospermia in European populations.

Objective- This is the first association study to evaluated their relationships with oligospermia and azoospermia in idiopathic infertile men in Iranian population.

Methods- Their polymorphisms have been compared in 96 male cases with idiopathic infertility and 100 normal control fertile men. SNPs analysis were performed using Real Time High Resolution Melt analysis (PCR-HRM) and confirmed by PCR-RFLP and sequencing analysis.

Results- The frequency of two SNPs, T132903C in INSR gene and C109869T in SLC6A14 gene were statistically significant between infertile patients and fertile control groups. Their statistical analysis showed significant associations with idiopathic male infertility with $P=0.02$ and $P=0.04$ respectively. The SNPs frequency for T824C in OR2W3 gene and T886C in TAS2R38 gene were approximately similar among case and control groups with $P=0.2$ and $P=0.9$ respectively.

Conclusion- These results indicated that T132903C SNP in INSR gene and C109869T SNP in SLC6A14 gene play role in spermatogenesis defect in idiopathic infertility in Iranian case with oligospermia and azoospermia similar to that observed in European population.

Key words: idiopathic male infertility, SNPs, oligospermia, azoospermia, genes.