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Association of Genetic Variants of Apolipoprotein A5 Gene with the Metabolic Syndrome in the Pakistani Population

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Abstract : Background: Association of C allele of rs662799 SNP of APOA5 gene with metabolic syndrome (MetS) has been reported in different populations around the world. A case control study was conducted to explore the relationship of rs662799 variants (T/C) with the MetS and the associated risk phenotypes in a population of Pakistani origin. Methods: MetS was defined according to the IDF criteria. Blood samples were collected from the Pakistan Institute of Medical Sciences, Islamabad, Pakistan for biochemical profiling and DNA extraction. Genotyping of rs662799 was performed using mass ARRAY, iPEX Gold technology. A total of 712 unrelated case and control subjects were genotyped. Data were analyzed using Plink software and SPSS 16.0. Results: The risk allele C of rs662799 showed highly significant association with MetS (OR=1.5, P=0.002). Among risk phenotypes, dyslipidemia, and obesity showed strong association with SNP (OR=1.49, p=0.03; OR =1.46, p=0.01) respectively in models adjusted for age and gender. Conclusion: The rs662799C allele is a significant risk marker for MetS in the local Pakistani population studied. The effect of the SNP is more on dyslipidemia than the other components of the MetS.

Keywords : metabolic syndrome, APOA5, rs662799, dyslipidemia, obesity
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