

## Lipid Profile and Leptin Levels in Patients with Metabolic Syndrome

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**Abstract**

**Background and Objective:** Metabolic syndrome called a cluster of several metabolic disorders is associated with increased risk of cardiovascular diseases. Genetic differences in leptin receptor gene are related with the concentration and activity of leptin in that these discrepancies can influence lipid levels. We aimed to determine the association between the leptin receptor gene polymorphism on serum lipid profile and leptin activity in metabolic syndrome patients.

**Material and Methods:** This case-control study was conducted on 200 patients with metabolic syndrome and 200 healthy individuals. Polymerase Chain Reaction (PCR) and Restriction Fragment Length Polymorphisms (RFLP) were used to determine genotypic distribution and allelic frequencies of polymorphisms, respectively. The plasma leptin activity was measured by a kit in a fluorescence spectrometer, and Lipid concentration by routine biochemical and enzymatic assays.

**Results:** Two groups had significant differences in all measured factors such as lipid profiles, fast blood sugar, waist circumference, blood pressure and leptin concentration ( $P < 0.05$ ).

**Conclusion:** Given that the two groups had significant differences in blood and body measurements, no role of K656N polymorphism was observed. Overall, Lys656Asn (K656N) polymorphism of leptin receptor gene is not associated with serum lipid profile and leptin activity with metabolic syndrome.

**Keywords:** Metabolic Syndrome, Leptin Receptor Gene, PolymorphismK656N