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LEPR p.Q223R polymorphism influences plasma leptin levels and body mass index in Uzbek obese women of childbearing age.

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Background and objectives:
The leptin receptor (LEPR) plays a crucial role in the regulation of body weight. Several common polymorphisms have been described in the human LEPR gene including the p.Q223R polymorphism (rs1137101). The association of this polymorphism with obesity or related metabolic phenotypes has been controversial. The aim of this study was to investigate the impact of the LEPR p.Q223R polymorphism on body mass index (BMI), plasma leptin and lipid parameters in a sample of the Uzbek women.
Methods:
The study included 186 obese and 50 normal weight childbearing age women. LEPR p.Q223R genotypes were identified by the PCR-RFLP analysis.
Results:
Obese women homozygous for RR genotype showed lower leptin levels than those with other genotypes ($p = 0.005$) adjusted for BMI. In obese women, the LEPR p.Q223R polymorphism was found associated with lower leptin concentrations ($p = 0.05$). After adjustment for BMI, the association between the LEPR variant and plasma leptin remained significant within obese women with BMI > 35 kg/m2 ($p = 0.027$). The results showed that the LEPR p.Q223R polymorphism is independently associated with leptin levels in obese women ($p = 0.026$).
Conclusions:
Our findings suggest that the LEPR p.Q223R polymorphism influences plasma leptin levels and BMI in Uzbek obese childbearing age women. The mechanisms associated with these findings require further investigations.

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