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렙틴 수용체 유전자 다형성과 이식후 당뇨병 발생과의 관련성

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Gene Polymorphisms of Leptin Receptor (LEPR) are associated with the Risk of Post-transplantation Diabetes Mellitus

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Background: Posttransplantation diabetes mellitus (PTDM) is a serious metabolic complication after renal transplantation. Leptin has an important role in the regulation of fat metabolism and glucose uptake. Although the links of insulin resistance and genetic variants at leptin (LEP) and leptin receptor gene (LEPR) were reported, relatively no studies have investigated the associations of PTDM. In this study, we investigated whether single nucleotide polymorphisms in LEP and LEPR have any association with PTDM in renal transplant recipients.
Methods: A total of 301 patients who had received kidney transplants without previously diagnosed diabetes were included. We analyzed the association between the PTDM development and the 5 SNPs within LEP and LEPR.
Results: Of 301 subjects, PTDM developed in 48 patients (15.9%). Patients in the PTDM group were older than those in the non-PTDM group. The sex ratio and BMI between two groups were similar. The percentage of steroid-treated acute rejection episodes and using tacrolimus were not significant different between the two groups. The patients with PTDM had significantly higher allele frequency of the LEPR rs1137100*G allele. We also observed significant higher distribution of A/A plus G/A genotypes of LEPR rs1137100 in PTDM subjects than in control subjects under a dominant model. Of four SNPs, the rs2167270 and rs13228377 of the LEP gene and the rs1327118 and rs3806318 of the LEPR were not significantly associated with the development of PTDM.
Conclusion: Our data suggests that genetic variants of LEPR might have an essential role in the pathogenesis of PTDM.

Key Words: 렙틴, 렙틴 수용체 다형성, 이식후 당뇨병, 이식
Leptin, Leptin receptor polymorphism, Post-transplantation