

KTP 환자에서 ACE, ATG SNP에 따른 신이식 후 당뇨병 발생 여부

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Significant Associations between Angiotensin Converting Enzyme and Angiotensinogen Gene Polymorphisms and Post-Transplantational Diabetes Mellitus in Korean Renal Allograft Recipients

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Background: Post-transplant diabetes mellitus (PTDM) is a frequent and serious complication after kidney transplantation. Genetic polymorphisms of the angiotensin-converting enzyme (ACE) and angiotensinogen (AGT) genes have been reported to be related to diabetes mellitus and insulin sensitivity. But the role of these genes on the development of posttransplantation diabetes mellitus (PTDM) is not known. For this purpose we investigated the association of ACE and AGT polymorphisms in the genes for with the development of PTDM. we investigated the association of polymorphisms in the genes for ACE and AGT gene with development of PTDM in Korean patients who had undergone renal transplants.

Methods: A total of 312 patients who had received kidney transplants without a prior history of diabetes were included. One ACE SNP (rs4291 in promoter -262) and two AGT SNPs (rs 699 in inton_1 and rs 4762 in intron 2) were genotyped from genomic DNA with direct sequencing.

Results: Of 312 patients, PTDM developed in 56 patients (17.9%). Patients in the PTDM group were older than those in the non-PTDM group (43.18 ± 9.51 years vs. 36.75 ± 11.58) There were significant difference between two subjects in the percentage of tacrolimus use ($n=18$ vs. $n=76$; $p=0.01$). Of three SNPs, the rs699 in intron_1 of the AGT gene was significantly associated with the development of PTDM in the codominant 1 ($p=0.009$) and dominant models ($p=0.02$).

Conclusion: AGT gene rs699 polymorphisms may act as genetic markers for the development of PTDM. The exact molecular mechanisms still need to be clarified.

Key Words: ACE 유전자 다형성, 이식 후 당뇨

Angiotensin-converting enzyme gene polymorphism, PTDM