P-160

신이식 후 당뇨병 발생과 MMP-2 유전자 SNP 간의 연관관계 연구

인제대학교 부산백병원 신장내과[1], 경희대학교 의과대학 신장내과[2]

강선우[1], 김현주[1], 박석주[1], 김태희[1], 김영훈[1], 정경환[2], 문주영[2], 이상호[2], 이태원[2]

Associations between MMP-2 Gene Polymorphisms and Post-Transplantational Diabetes Mellitus in Korean Renal Allograft Recipients

Sun Woo Kang[1], Hyun ju Kim[1], Seok Ju Park[1], Tae Hee Kim[1], Yeong-Hoon Kim[1]
Kyung-Hwan Jeong[2], Joo-Young Moon[2], Sang-Ho Lee[2], Tae-Won Lee[2]

Division of Nephrology[1], School of Medicine, Inje University, Busan
Division of Nephrology[2], School of Medicine, Kyung Hee University, Seoul

Background: Post-transplantational diabetes mellitus (PTDM) is a serious metabolic complication that may follow renal transplantation. Matrix metalloproteinase-2 (MMP2) function is dispensable for pancreatic beta islet formation and endocrine cell differentiation. Thus, specific MMP2 gene polymorphisms are considered to be risk factors for diabetes. In this study, we investigated the association between MMP2 gene polymorphisms and the occurrence of PTDM in Korean patients who had undergone renal transplants.

Methods: A total of 311 patients who had received kidney transplants without a prior history of diabetes were included. Four single nucleotide polymorphisms (SNPs) of the MMP2 gene were genotyped from genomic DNA with direct sequencing.

Results: PTDM developed in 56 patients (18.0%). The results showed that the allele frequencies of MMP2 gene polymorphisms rs1132896*C and rs243849*C were significantly higher in the patients with PTDM than in those without PTDM. In multiple logistic regression analysis, 2 SNPs (rs1132896 and rs243849) of the MMP2 gene were significantly associated with the development of PTDM in the codominant and recessive or, codominant and dominant models, respectively.

Conclusion: Our results indicated that genetic polymorphisms of the MMP2 gene were associated with PTDM, suggesting that the MMP2 gene might confer susceptibility to PTDM in patients who receive renal transplants.

Key Words: 신장이식, 당뇨병, MMP-2 유전자,
Kidney transplantation, Diabetes mellitus, MMP-2 Gene Polymorp