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신이식 환자에서 이식후 발병하는 당뇨병의 위험인자로써의 체질량지수의 증가

삼성서울병원 신장내과

김윤정, 신준암, 장혜련, 이정은, 김윤구, 김대중, 오하영, 허우성

An Increase in Body Mass Index is a Risk Factor for Persistent New Onset Diabetes after Transplantation in Renal Transplant Recipients

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The association of an increase in BMI with the development of type 2 DM is well known in the general population, but it has not been clear in renal transplant recipients. This study investigated the relationship between an increase in BMI after kidney transplantation and the development of persistent new onset diabetes after transplantation (P-NODAT) in recipients treated with tacrolimus. Study design was retrospective case-matched control (1:3) study. NODAT was defined according to the American Diabetes Association and World Health Organization experts committee definition. Thirty-four patients developing P-NODAT were identified among 186 adult renal transplant recipients with no evidence of pre-transplant DM, who underwent kidney transplantation (KT) from September 1997 to March 2008 and were treated with a triple regimen including tacrolimus. The controls were selected by pre-transplant BMI, age at transplant (±5 years) and date of transplantation (±12 months). Finally, 21 P-NODAT patients and 63 controls were enrolled. The pre- and post-transplant BMI data were collected every 16 weeks until 80 weeks.

Between the two groups, the proportion of deceased donor was higher in P-NODAT patients (38.1%, vs. 15.9 %, p=0.02). There were no significant differences in sex, family history of DM, pre-transplant BMI, HCV infection, donor age, acute rejection rate, CMV infection, and tacrolimus trough levels. Pre-transplant BMI was 23.7±3.0 Kg/m2 in P-NODAT group and 23.2±2.2 Kg/m^2 in the control group. BMI was decreased to 22.5±3.3 Kg/m^2 in P-NODAT group and to 22.0±2.2 Kg/m^2 in control group 16 weeks after KT. And then, in P-NODAT group, BMI was rapidly recovered to 23.4±3.3 Kg/m^2 at 32 weeks. However, in control group, BMI was recovered to 22.9±2.1 Kg/m^2 at 80 weeks (ANOVA for repeated measures p=0.03 for between groups analysis). Logistic regression analysis revealed a significant association between weight gain from 16 weeks to 32 weeks and development of P-NODAT. The odds ratio was adjusted for donor type. Adjusted odds ratio was 1.37 (95% CI, 1.10-1.72) for every 1 kg increase in body weight from 16 weeks to 32 weeks (=0.006). The increase in BMI after KT was related to a higher incidence of persistent NODAT.

Key Words: 신이식, 당뇨병, 체질량지수
Renal transplant, Diabetes, BMI