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체지방 증가와 조기 신기능 감소와의 관계

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Increased Body Fat has Harmful Effects on Early Renal Function Decline Regardless of Body Mass Index: A 4-year Longitudinal Study in the Korean General Population

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Background and objectives: Obesity-related renal disease is regarded as an epidemic disease. However, no studies have investigated the prospective association between increased body fat and early renal function decline (RFD) in a general population with preserved renal function.

Design, setting, participants, & measurements: We conducted a prospective study of 615 individuals in the Korean general population aged ≥40 years who participated in two health screening check-ups separated by a 4-year period. The percentage of body fat (PBF) was measured using body composition analysis. Normal-weight obesity (NWO) was defined as a normal body mass index (BMI) but a highest sex-specific tertiles of PBF. The main outcome of this study was renal function change during the 4 years. We calculated both the absolute decline in the estimated glomerular filtration rate (eGFR) and percentage change in the eGFR during the 4 years (%/yr). Early RFD was defined by a change in the eGFR over the upper quartile (≤-2.1%/yr).

Results: The mean age was 51.2±7.6 years, and 177 (28.7%) were male. The median value of absolute decline in the eGFR and percent change per year were -3.0 mL/min/1.73m^2 and -0.87%/yr in men and -3.1 mL/min/1.73m^2 and -0.89%/yr in women, respectively. When stratified by sex-specific PBF tertiles, pronounced differences in eGFR changes were observed in both sexes; those at the highest tertile of PBF showed the greatest decline in eGFR. Even in patients with a normal BMI, a high PBF served as an important determinant of RFD. NWO increased the risk of early RFD by 3.26-fold in men and 1.70-fold in women, respectively.

Conclusion: In the general population with preserved renal function, increased body fat plays an important role in RFD. Even in subjects with a normal BMI, the presence of NWO is a risk factor for an early RFD.

Key Words: 체지방, 신기능 감소, 비만
Body fat, Early renal function decline, Obesity