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Metabolic Syndrome and Chronic Kidney Disease in an Adult Korean Population: Results from the Korean National Health Screening

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Background: This study was aimed to examine the prevalence of metabolic syndrome (MS) and chronic kidney disease (CKD), and the association between MS and its components with CKD in Korea.

Methods: We excluded diabetes to appreciate the real impact of MS and performed a cross-sectional study using the general health screening data of 10,253,085 (48.86±13.83 years, men 56.18%) participants (age, ≥20 years) from the Korean National Health Screening 2011. CKD was defined as dipstick proteinuria ≥1 or an estimated glomerular filtration rate (eGFR) <60 ml/min/1.73m².

Results: The prevalence of CKD was 6.15% (men, 5.37%; women, 7.15%). Further, 22.25% study population had MS (abdominal obesity, 27.98%; hypertriglyceridemia, 30.09%; low high-density cholesterol levels, 19.74%; high blood pressure, 43.45%; and high fasting glucose levels, 30.44%). Multivariate-adjusted analysis indicated that proteinuria risk increased in participants with MS (odds ratio [OR] 1.884, 95 % confidence interval [CI] 1.867-1.902, p<0.001). The presence of MS was associated with eGFR <60 mL/min/1.73m² (OR 1.364, 95 % CI 1.355-1.373, p<0.001). MS individual components were also associated with an increased CKD risk. The strength of association between MS and the development of CKD increase as the number of components increased from 1 to 5. In subanalysis by men and women, MS and its each components were a significant determinant for CKD.

Conclusions: MS and its individual components can predict the risk of prevalent CKD for men and women.

Key Words: Chronic kidney disease, Metabolic syndrome, Korea