

40세 이상의 성인 남성에서 만성콩팥병과 근육 감소증의 관계: 국민건강영양조사(2008-2011)

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Relationship between Stages of Chronic Kidney Disease and Sarcopenia in Korean Males Aged 40 Years and Older using the Korea National Health and Nutrition Examination Surveys (KNHANES 2008-2011)

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Background: Protein-energy wasting is common in patients with end-stage kidney disease. However, few studies have examined the relationship between early stages of chronic kidney disease (CKD) and sarcopenia.

Methods: We conducted a cross-sectional study, based on data in the Korea National Health and Nutrition Examination Survey, 2008-2011. In total, 11,625 subjects aged 40 years and older who underwent dual-energy X-ray absorptiometry were analyzed. Sarcopenia was defined based on values of appendicular skeletal muscle mass as a percentage of body weight (ASM/Wt), as two standard deviations below the gender-specific normal mean for the young adults. Estimated glomerular filtration rates (eGFR) were calculated using the CKD-EPI equation.

Results: The mean age, body mass index (BMI), and HOMA-IR were higher, and caloric intake, physical activity, and vitamin D levels were lower in the sarcopenia groups in both men and women. As the stage of CKD increased, the prevalence of sarcopenia increased even in early stages of CKD (normal and CKD1, 2, and 3-5: 2.6%, 5.6%, and 18.1% in men, and 5.3%, 7.1%, and 12.6% in women, respectively; $p < 0.001$). In addition, a correlation analysis showed that GFR and ASM/Wt had significant correlations in both men and women. Logistic regression analyses, after adjusting for age, height, BMI, caloric intake, log(physical activity), vitamin D levels, and log(HOMA-IR) showed that the odds ratio for sarcopenia with respect to CKD 3-5 was 2.01 (95% CI=1.05-3.84) in men, but was not statistically significant in women.

Conclusions: The prevalence of sarcopenia was higher in elderly Korean patients with even mildly reduced kidney function. The stage of CKD was associated significantly with an increased prevalence of sarcopenia in men but not women. Thus, we should evaluate the risk of sarcopenia and prevent it, even when treating patients with early CKD.

Key Words: 만성콩팥병, 근육감소증, 성별, 사구체여과율
Chronic kidney disease, Gender, Sarcopenia