

노인에서 체지방 변화가 신기능에 미치는 영향

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The Increase of Body Fat is Related to the Reduced Renal Function in Elderly

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Introduction: Body mass index (BMI) is a well-known risk factor for chronic kidney disease as a marker of obesity. However, BMI could not exactly determined obesity in elderly population because of reduced muscle mass and increased abdominal obesity. We assessed the changes of body fat percentage and evaluate the risks for an estimated glomerular filtration rate (eGFR) decrease exceeding 25% in old adults.

Methods: We performed a prospective cohort study in 1,000 randomly sampled participants aged more than 65 years (sourced from the Korean Longitudinal Study on Health and Ageing). In baseline study, 877 subjects were measured body fat. The 215 subjects died during 5 years of follow up period, and total 390 subjects were evaluated body fat in baseline and follow up study.

Results: After the 5 years of follow up, subjects showed significantly reduced body weight, height, eGFR, total body muscle and nutritional markers compared to baseline. However, total body fat and waist circumference (WC) were significantly increased ($p < 0.05$). Subjects were grouped into tertiles of the changes of body fat percentage. Highest tertile was noted the highest value of BMI, WC, waist hip ratio, WBC, ESR, and TG, and the lowest value of body muscle, HDL, and exercise. According to the increase of body fat, the prevalence of $>25\%$ decline in eGFR was increased (3.8%, 5.4%, and 13.8%; lowest, middle, and highest tertile, respectively) ($p = 0.005$). In subgroup analysis, women and subjects aged < 70 years showed more strong relationship between the changes body fat and a decline in eGFR ($p < 0.05$). In multivariate analysis, the highest tertile of changes of body fat showed the 4.85-fold increased risk for the decrease in eGFR $>25\%$ compared to the lowest tertile (95% CI 1.603-14.673).

Conclusion: Body fat percentage may be an important and modifiable risk factor for the progression of renal disease in elderly. Redefinition of obesity by combining body fat percentage may refine the prognosis of renal function in elderly.

Key Words: 노인, 체지방, 사구체여과율

Aged, Body fat distribution, Glomerular filtration rate