

## 65세 이상 노인에서 신체질량지수, 근육 및 지방 수치에 따른 사망률에 대한 연구

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### Mortality According to Body Mass Index and Body Composition in the Elderly Asian Population: Sub-analysis of the KLoSHA Study

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**Introduction and Objective :** Generally, body mass index (BMI), which is an indicator of obesity, is considered to be a predictor of mortality. However, recent research has revealed a paradoxical reverse correlation in chronic kidney disease. It may accordingly be important to better quantify muscle and fat mass. Herein, we evaluate the correlation of BMI, body composition, and mortality in the elderly Asian population, the members of which are likely to develop chronic kidney disease.

**Methods :** We conducted a prospective cohort study of a population of subjects aged over 65 years in a city in Korea. We evaluated the demographics of the subjects, including waist circumference and BMI. The body composition of each subject, such as muscle mass (kg), fat mass (kg), and fat proportion (%), was also measured using a digital body composition analyzer. The participants were divided into 3 groups according to the <25th, 25th to 75th, and  $\geq$ 75th percentiles of BMI, waist circumference, and body composition. The all-cause mortality was nationally examined by the Ministry of Public Administration and Security.

**Results :** The mean BMI was  $24 \pm 3.3$  kg/m<sup>2</sup> and the mean glomerular filtration rate (GFR) was  $61.2 \pm 12.6$  ml/min/1.73m<sup>2</sup>; 47.7% of total participants had a GFR of less than 60 ml/min/1.73m<sup>2</sup>. After a follow-up of 3.5 years, there were 55 deaths among the 877 participants. In the fully adjusted model, BMI, waist circumference, fat mass, and fat composition were not correlated with mortality. However, higher muscle mass was considered to be a predictor of lower mortality in the group with muscle mass in the >75th versus <25th percentiles [Relative risk reduction of 84% (95% CI, 0.04 to 0.55),  $p=0.004$ ]. 0.1 kg increase of muscle mass reduced a relative risk of mortality by 7% in multivariate model. Regardless of whether participants had a decreased GFR (<60 ml/min/1.73 m<sup>2</sup>) or not, a reverse correlation between muscle mass and mortality remained consistent.

**Conclusion :** Our research fails to demonstrate a relationship between high BMI and mortality, although such a relationship has been reported in a previous study on the general population. Furthermore, muscle mass is considered to be protective against mortality in the elderly Asian population, irrespective of decreased renal function. This indicates that recommendation of a low BMI for survival advantage in the elderly is unreasonable.

**Key Words :** 신체질량지수, 사망률, 노인

Body mass index, Mortality, Elderly