

Abstract Submission No.: A-1204**Muscle Mass as a Predictor of Mortality in Autosomal Dominant Polycystic Kidney Disease Patients****Dha Woon Im**¹, Jiyun Jung², Jae Yoon Park⁴, Yong Chul Kim³¹Department of Internal Medicine-Nephrology, Uijeongbu Eulji Medical Center, Eulji University, Korea, Republic of²Department of Research Center for Chronic Disease and Environmental Medicine, Dongguk University College of Medicine, Korea, Republic of³Department of Internal Medicine-Nephrology, Dongguk University Ilsan Hospital, Korea, Republic of⁴Department of Internal Medicine-Nephrology, Seoul National University Hospital, Korea, Republic of

Objectives : Sarcopenia is a well-established risk factor associated with the development and progression of chronic kidney disease (CKD). However, little is known about the impact of muscle mass on mortality in patients with autosomal dominant polycystic kidney disease (ADPKD). This study aimed to investigate the effect of muscle mass on mortality in individuals with ADPKD.

Methods : We collected the demographic and clinical information on 1273 ADPKD patients from Seoul National University Hospital between 2006 and 2019, and obtained CT image at lumbar 3rd vertebra to measure the skeletal muscle area (SMA) by artificial intelligence. SMA was classified as low attenuation muscle area (LAMA) and normal attenuation muscle area (NAMA) according to muscle quality, and divided by height² to adjust the body size. To investigate the muscle index effects on mortality tracked through 2020, we estimated hazard ratio (HR) and 95% confidence interval (CI) on Cox-proportional hazard model adjusted by sex, age, MAYO classification, serum creatinine, blood urea nitrogen, and glucose.

Results : During the average of 5.94 years, more than half of the patients were female, and the mean (standard deviation) age of the patients was 47.0 (12.5) years. We observed 60 deaths, and the average of SMA/height², NAMA/height², and LAMA/height² was 43.86 cm²/m², 34.69 cm²/m², 8.51 cm²/m², respectively. We found significant protective effects of SMA (HR 0.94, 95% CI 0.90–0.99) and NAMA (HR 0.94, 95% CI 0.90–0.97) on mortality while weak adverse health effect was estimated in LAMA (HR 1.05, 95% CI 0.99–1.12). According to body mass index classification, those who had normal weight (18.5≤BMI<25) had prominently positive health effects associated with NAMA increase (HR 0.95, 95% CI 0.91–0.99).

Conclusions : In ADPKD, greater muscle mass, particularly high-quality muscle mass, is associated with a reduced risk of mortality.