KSN 2022
SEOUL, KOREA MAY 26 - 29

Abstract Submission No. : 1335

Association between geriatric nutritional risk index and decline in kidney function

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Objectives: Nutrition status is known to affect the chronic inflammatory response and be associated with mortality in the elderly. We investigated whether nutritional status affects the change in kidney function over time in the elderly.

Methods: We performed a retrospective cohort study based on data for participants who participated in a health checkup at Samsung Changwon Hospital between 2002 and 2013. We included participants (aged ≥60 years) with baseline body weight, height, and serum albumin and creatinine levels in this study. We excluded participants with baseline estimated glomerular filtration rate (eGFR) <15 ml/min/1.73 m2, those without kidney function test follow-up within 5 years, or those who died within 5 years. The primary exposure was baseline geriatric nutritional risk index (GNRI) which we divided into quartiles. The primary outcome was a change in kidney function after 5 years from baseline. This was assessed using the slope of eGFR over 5 years to determine rate of change in kidney function.

Results: Our study included 1,457 participants (mean [SD] age, 64 [4] years; 54% males). Mean baseline GNRI was 114 ± 7. Mean baseline eGFR was 81 ± 14 mL/min/1.73 m2. In linear regression models, lower GNRI quartiles were associated with a steeper 5-year slope in eGFR compared with the highest quartile; fully adjusted beta coefficients and 95% confidence intervals were -0.19 (-0.28. -0.09), -0.11 (-0.20, -0.02), and -0.05 (-0.14, 0.03) for the first, second, and third quartiles of GNRI, respectively.

Conclusions: Our findings suggest that nutritional status assessed as GNRI may have an effect on kidney function among the elderly.