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Association of Dietary Inflammatory Index and Handgrip Strength in Advanced Chronic Kidney Disease: Results from the KNOW-CKD Study

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Objectives : Patients with chronic kidney disease (CKD) have an elevated risk of developing sarcopenia, a condition that involves muscle loss and dysfunction. Excessive inflammation aggravates muscle wasting in CKD. Therefore, dietary strategies to reduce dietary inflammatory potential may help preserve muscle mass and function. This study aimed to investigate whether dietary inflammatory potential is associated with handgrip strength (HGS) in patients with advanced CKD.

Methods : The current study analyzed data from the KoreaN Cohort Study for Outcomes in Patients with Chronic Kidney Disease (KNOW-CKD). A total of 462 participants were included in the current analysis, and kidney function-related parameters, HGS, and dietary intake data were analyzed. The dietary inflammatory index (DII), a scoring system to assess the inflammatory potential of an individual's diet, was calculated using dietary intake data analyzed from a food frequency questionnaire. HGS was measured using a digital grip strength dynamometer, and low HGS was defined as < 28 kg for men and < 18 kg for women.

Results : Of the 462 participants, 128 (27.71%) were classified as having low HGS. DII was negatively correlated with eGFR. Moreover, a higher DII was positively associated with low HGS. Patients in the low HGS group had lower dietary intake of vitamin E, and vitamin E intake was negatively associated with low HGS. In addition, subgroup analyses demonstrated that hemoglobin, hematocrit, and vitamin E intake significantly influenced the association between DII and low HGS.

Conclusions : The findings of the current study demonstrated that dietary inflammatory potential was associated with low HGS in patients with advanced CKD.