KSN 2017 Abstract

Overview of sarcopenia and frailty in CKD population

*Young rim SONG

Department of Internal medicine, Hallym University Sacred Heart hospital, Korea,South

Sarcopenia and frailty are common medical problems in patients with chronic kidney disease (CKD). Sarcopenia is originally defined by age-related decline in skeletal muscle mass and strength, while frailty represents a state of decreased physical function and increased vulnerability to stressors. Today, sarcopenia is used to describe loss of muscle mass and strength upon aging, chronic disease, inappropriate nutrition and physical inactivity and contributes to decreased independence, and subsequently increased morbidity and mortality. Sarcopenia is a major cause of frailty, but it may occur with either. CKD is a condition associated with chronic inflammation, malnutrition, accumulation of uremic toxins, metabolic acidosis, hormonal changes and physical inactivity, all of which can contribute to accelerated aging process. In patients with CKD, the loss of skeletal muscle is much more intensive and is observed earlier compared to non-CKD.

The conceptual definitions of sarcopenia and frailty have been broadly agreed but there is a lack of consensus regarding operational criteria for them in CKD patients. The diagnosis of sarcopenia is based on muscle mass, strength and performance. Once muscle mass falls below 2 standard deviations of the mean of a young cohort and the gait speed falls below 0.8 m/s, sarcopenia can be diagnosed. Handgrip strength test, short physical performance battery test or the stair climb power test may be helpful in the surveillance of sarcopenia. Many institutions use bioimpedance analysis, handgrip strength and gait speed due to safety with convenience and low cost. At present, no validation study has been performed and the application of population-specific cut-off values in any population can be a problem. Although we know a lot of mechanisms of sarcopenia, the prevention and treatment still remains relatively poor. Therapeutic approaches to sarcopenia in CKD patients include nutritional interventions, progressive resistant training, correction of metabolic acidosis, vitamin D, and hormonal replacement therapy such as testosterone, estrogens and growth hormone. Prevention and intervention of the progression of these syndromes are important to improve prognosis of CKD patients.