

**Abstract Type : Poster**

**Abstract Submission No. : PO-1169**

## **Comparison of different methods of normalizing skeletal muscle mass to diagnose sarcopenia among hemodialysis patients**

**Hae Yeul Park**<sup>1</sup>, Kang Yoon Lee<sup>1</sup>, Songuk Yoon<sup>1</sup>, Jong Hyun Jhee<sup>1</sup>, Hoon Young Choi<sup>1</sup>, Tae Hoon Kim<sup>2</sup>, Jung Eun Lee<sup>2</sup>, Seok-hyung Kim<sup>3</sup>, Hyeong Cheon Park<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, Gangnam Severance Hospital, Korea, Republic of

<sup>2</sup>Department of Internal Medicine, Yongin Severance Hospital, Korea, Republic of

<sup>3</sup>Department of Internal Medicine, Chuncheon Sacred Heart Hospital, Korea, Republic of

**Objectives:** Sarcopenia, a syndrome of decreased skeletal muscle mass and declining muscle strength or function has emerged as an important clinical issue because it is associated with physical disability as well as high mortality in hemodialysis (HD) patients. Since the skeletal muscle mass is influenced by height or weight, proper adjustment is often necessary. The aim was to determine which definition of low skeletal muscle mass index is more strongly correlated with muscle strength and performance in HD patients.

**Methods:** We conducted a cross-sectional, observational study in 153 clinically stable HD patients. All patients underwent a bioimpedance analysis (BIA) to measure skeletal muscle mass. Low muscle mass was defined as muscle mass of 2SD or more below sex-specific means for young adults and indexed to height<sup>2</sup>, body weight, body surface area (BSA) or body mass index (BMI). Muscle strength and performance was assessed by handgrip strength (HGS) and gait speed, respectively.

**Results:** Most patients (n=145, 94.8%) had hypertension and 96 patients (62.7%) had diabetes. The prevalence of sarcopenia ranged from 18.3 to 49.0% according to the different equations. Muscle mass indexed to height<sup>2</sup> classified the smallest percentage of patients as having low muscle mass, whereas indexing by BSA classified the largest percentage. Importantly, overweight HD patients are more likely to be misclassified as non-sarcopenic with muscle mass indexing by only height<sup>2</sup>. Using Pearson correlation, HGS was correlated significantly with all muscle mass indices, especially in height ( $r=+0.623$ ,  $p<0.001$ ), BSA ( $r=+0.625$ ,  $p<0.001$ ), and BMI ( $r=+0.605$ ,  $p<0.001$ ). And gait speed was positively correlated with muscle mass indexed to BSA ( $r=+0.296$ ,  $p<0.001$ ) and BMI ( $r=+0.304$ ,  $p<0.001$ ) more than height and weight.

**Conclusions:** The prevalence of sarcopenia greatly differed according to the different muscle mass indices used. Therefore, muscle mass adjustment for BSA or BMI may be required for accurate detection of sarcopenia in HD patients.