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# Low Muscle Mass in Patients Receiving Hemodialysis: Correlation with Noncoronary Vascular Calcification and Incidence of Repeat Vascular Intervention

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**Objectives:** We aimed to investigate correlation between sarcopenia and quantified vascular calcification score (VCS) of the arm including vascular access and whether low muscle mass is associated with incidence of vascular intervention and major cardiac and cerebrovascular events (MACCE).

**Methods:** Non-contrast arm CT scan including vascular access was taken. Later, VCS was measured by using the Agatston method. Skeletal muscle mass was estimated using bioelectrical impedance in supine position. LMM was defined as patients with skeletal muscle mass at both legs normalized to height-squared less than the median. Vascular Calcification (VC) group was assigned to patients with a VCS of 500 or higher. Statistical differences between the two groups were determined using the Mann-Whitney U test for continuous variables and the chi-square test for categorical variables. Univariate and multivariate logistic regression analyses were used to determine the association between LMM and VC.

**Results:** We enrolled stable 75 HD patients. In the total 75 patients, there were 42 males(56.0%), and the median age was 64 (58-72) years. The median vintage of HD was 49.4(32.1-99.2) months. There were no differences between 2 groups (LMM vs. non-LMM) in sex, ESRD etiology, and type of vascular access. However, Age and HD vintage were significantly older in LMM group. LMM was significantly associated with VC (HR 3.562(1.341-9.463),p=0.011). After adjusting age, sex, HD vintage, systolic blood pressure and diabetes, LMM was independently associated with VC(HR 10.415(2.357-46.024),p=0.002). Vascular intervention was not significantly associated with LMM (HR 1.391, 95% CI 0.746-2.594, p=0.299). In addition, MACCE did not show significant association with LMM (HR 0.989, 95% CI 0.503-1.943, p=0.974).

**Conclusions:** We quantified the VC and found for the first time that it is associated with LMM. LMM may be suggested as a potential predictor of VC. LMM increased the risk of repeat vascular intervention.