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The subtype of sarcopenia and physical frailty, cachexia in older patients undergoing hemodialysis: A preliminary, observational study in Japanese dialysis facilities

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Objectives : The prevalence of subtypes of sarcopenia such as sarcopenic obesity, osteosarcopenia and osteosarcopenic obesity, and its impact on physical frailty or cachexia are little known in patients undergoing hemodialysis.

Methods : A total of 51 older hemodialysis patients with sarcopenia (31.4% female, 79 [74-84] years old) were enrolled from 2 dialysis centers in Japan. Sarcopenia was defined as the loss of muscle mass, muscle strength, and physical performance according to the Asian Working Group for Sarcopenia 2019 criteria. Subtypes of sarcopenia were consecutively diagnosed according to increased percentage of body fat and low bone mineral density: sarcopenia, sarcopenic obesity, osteosarcopenia and osteosarcopenic obesity. Prevalence of physical frailty assessed by Japanese version of Cardiovascular Health Study criteria, and cachexia measured by Asian Working Group for Cachexia criteria were compared between the four groups.

Results : Among these patients, 9(17.6%) were sarcopenia, 3(5.9%) were sarcopenic obesity, 28(54.9%) were osteosarcopenia, and 11(21.6%) were osteosarcopenic obesity. The prevalence of physical frailty was 44.4% vs. 100% vs. 67.9% vs. 63.6% ($p=0.336$), and cachexia was 44.4% vs. 33.3% vs. 71.4% vs. 9.1% ($p=0.005$). The prevalence odds ratio of cachexia was significantly reduced in osteosarcopenic obesity (0.037, 95%CI 0.002-0.823, $p=0.037$) after adjusting for age, sex, and hemodialysis vintage.

Conclusions : Hemodialysis patients had a high incidence of sarcopenia and subtype of sarcopenia. Sarcopenic obesity have a increased risk of physical frailty, and osteosarcopenia has an increased risk of cachexia. In view of these condition, it is important to consider early detection of subtype of sarcopenia, and preventive or therapeutic tailored approaches to each subtype of sarcopenia in hemodialysis patients.