Abstract: P1111

Clinical usefulness of cystatin C in patients with acute heart failure: implications for sarcopenia and cachexia

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Background: Sarcopenia and cachexia are frequent in patients with chronic heart failure (HF), and contribute to excess mortality. Cystatin C can be utilized to estimate muscle mass and to assess the presence of sarcopenia or cachexia. However, the clinical usefulness of cystatin C is not fully investigated in patients with acute HF.

Purpose: We aimed to investigate whether the estimates of muscle mass using cystatin C can provide additional prognostic information in patients who admitted for acute HF.

Methods: We retrospectively identified 586 patients with acute HF in whom the muscle mass was estimated using body weight, serum creatinine, and serum cystatin C measured during index hospitalization. Study population was categorized into three groups: patients with BMI = 18.5 kg/m² and muscle mass = 45.0kg in men or = 30.9kg in women (group 1 [normal]; n=264), patients with BMI = 18.5kg/m² but reduced muscle mass (group 2 [sarcopenia], n=263), and those with BMI < 18.5kg/m² (group 3 [cachexia]; n=52). The risk of all-cause mortality was compared between these 3 groups.

Results: During a median 34 months of follow-up (interquartile range, 16–54), 213 patients (37%) died. There was no J-curve phenomenon between BMI, cystatin C, and estimated muscle mass with the risk of mortality. The annualized mortality rates were 10.4% in group 1 (normal), 14.7% in group 2 (sarcopenia), and 20.3% in group 3 (cachexia). Compared with group 1 patients, the risk of mortality was significantly higher in group 3 patients (adjusted HR 1.74; 95% CI 1.10–2.76; p=0.017) as well as in group 2 patients (adjusted HR 1.38; 95% CI 1.01–1.88; p=0.043), even after adjusting for clinical risk factors and echocardiographic parameters.

Conclusions: Cystatin C is a useful biomarker for estimation of muscle mass and for assessment of sarcopenia or cachexia, which provide independent prognostic value in patients with acute HF.
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