Abstract: P5483

Prognostic impact of skeletal muscle, fat, and bone mass in male patients with ST-segment elevation myocardial infarction

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Introduction:
Muscle, fat and bone mass may play some roles to keep physical activity and favorable outcome in patients with cardiovascular diseases. However, there is a paucity of data regarding the effects on the prognosis of skeletal muscle, fat, and bone mass in patients with ST-segment elevation myocardial infarction (STEMI).

Purpose:
Our purpose was to examine whether skeletal muscle, fat, and bone mass each affect the prognosis after STEMI.

Methods:
A total of 354 male patients with STEMI were enrolled in this study. Dual-energy X-ray absorptiometry scan was performed before discharge. All patients were followed up for the primary composite outcome of all-cause death, nonfatal myocardial infarction, nonfatal ischemic stroke, hospitalization for congestive heart failure, and unplanned revascularization.

Results:
During a median follow-up of 32 months, 57 patients experienced primary composite outcome. Each of skeletal muscle, fat, and bone mass were indexed by height squared (kg/m2) and divided into two groups using the cutoff value obtained from the maximum Youden index to predict the primary composite outcome. The event rate was significantly higher in patients with low appendicular skeletal muscle mass index (ASMI) (29.2% vs 11.7%, p < 0.001), low fat mass index (FMI) (22.9% vs 13.3%, p = 0.030), and low bone mass index (23.8% vs 11.6%, p = 0.002). After adjustment for age, renal function, diabetes mellitus, infarct size, Killip classification, and body mass index, low ASMI but not FMI (p = 0.150) and bone mass index (p = 0.159) was independently and significantly associated with the primary composite outcome (adjusted hazard ratio 2.12, 95%-confidence interval 1.05-4.31, p = 0.035).

Conclusions: Index about muscle mass rather than fat and bone mass have prognostic impact in male patients with STEMI.