論 文 要 旨

Prognostic impact of malnutrition on cardiovascular events in coronary artery disease patients with myocardial damage

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Background: Stable coronary artery disease (CAD) patients with myocardial damage have a poor prognosis compared to those without myocardial damage. Recently, malnutrition has been reported to affect the prognosis of cardiovascular diseases. However, the effects of malnutrition on prognosis of CAD patients with myocardial damage remains uncertain. We investigated the effects of malnutrition on prognosis of CAD patients with myocardial damage who received percutaneous coronary intervention (PCI).

Methods: Subjects comprised 241 stable CAD patients with myocardial damage due to myocardial ischemia or infraction. Patients underwent successful revascularization for the culprit lesion by PCI using second-generation drug-eluting stents and intravascular ultrasound. The geriatric nutritional risk index (GNRI), which is widely used as a simple method for screening nutritional status using body mass index and serum albumin, was used to assess nutritional status. Associations between major cardiovascular and cerebrovascular events (MACCE) and patient characteristics were assessed.

Results: Mean GNRI was 100 ± 13, and there were 55 malnourished patients (23%; GNRI < 92) and 186 non-malnourished patients (77%). MACCE occurred within 3 years after PCI in 42 cases (17%), including 34 deaths (14%), and the malnourished group showed a higher rate of MACCE (38%) compared with the non-malnourished group (11%, $p < 0.001$). Univariate Cox proportional hazards analyses showed that MACCE was associated with age [hazard ratio (HR), 1.04; 95% confidence interval (CI), 1.04–1.07; $p = 0.004$], prior heart failure (HR 2.35; 95% CI 1.10–5.01; $p = 0.027$), high-sensitivity C-reactive protein (HR 1.08; 95% CI 1.03–1.11; $p < 0.001$), hemodialysis (HR 2.63; 95% CI 1.51–4.58; $p < 0.001$) and malnutrition (HR 3.69; 95% CI 2.11–6.42; $p < 0.001$). Multivariate Cox proportional hazards analysis revealed hemodialysis (HR 2.17; 95% CI 1.19–3.93; $p = 0.011$) and malnutrition (HR 2.30; 95% CI 1.13–4.67; $p = 0.020$) as significantly associated with MACCE. Furthermore, Cox proportional hazards models using malnutrition and hemodialysis revealed that patients with malnutrition and hemodialysis were at greater risk of MACCE after PCI than patients with neither malnutrition nor hemodialysis (HR 6.91; 95% CI 3.29–14.54; $p < 0.001$).

Conclusions: In CAD patients with myocardial damage, malnutrition (GNRI < 92) represents an independent risk factor for MACCE. Assessment of nutritional status may help stratify the risk of cardiovascular events and encourage improvements in nutritional status.