Editorial

Nutritional Status as a Predictor of Clinical Prognosis in Patients with Peripheral Artery Disease

Hideki Ishii

Department of Cardiology, Nagoya University Graduate School of Medicine, Nagoya, Japan

Frailty status and sarcopenia have recently been popularized owing to close associations among the frailty cycles centered on sarcopenia, chronic disease severity, and patient prognosis[1]. Malnutrition is frequently seen in individuals with frailty status and sarcopenia. Nutrition status is also an independent predictor of poor prognosis in high-risk populations[2,3]. Therefore, the evaluation of nutritional status is of considerable significance.

Several nutritional screening tools have been used, and scores evaluated based on objective biochemical and clinical data are useful in the clinical setting. Of all such scores, the Geriatric Nutritional Risk Index (GNRI) is very attractive because it uses only serum albumin levels, body weight and ideal body weight[4]. Body mass index (BMI) has been considered a useful predictor in many studies; however, a J-curve pattern exists between BMI and clinical outcomes. Therefore, it is sometimes difficult to interpret clinical data when using BMI. From this point, GNRI combines serum albumin levels, body weight, and ideal body weight, which are routinely measured data. The formula of GNRI is very simple: [14.89 × serum albumin (g/dL)] + [41.7 × (body weight/ideal body weight)]. Indeed, GNRI predicts clinical outcomes in patients with heart failure as well as those on hemodialysis[3,5].

Clinical prognosis in patients with peripheral artery disease (PAD), particularly in those with high-risk conditions, is surprising low[6,7]. Kumakura *et al.* reported that the cumulative survival rates at 5 years were only approximately 60% in patients with intermittent claudication and critical limb ischemia[7]. The 5-year survival rate in patients with PAD is similar to that in those with malignant lymphoma[8]. Therefore, accurate risk stratification is essential for personalized therapeutic management and strategies in such patients. Regarding this issue[9], the same group in their long-term follow-up cohort study found that GNRI independently predicts overall survival and major adverse cardiovascular events, including limb events in patients with PAD. The study demonstrated that accurate risk stratification in patients with PAD can be easily achieved with GNRI calculation. Therefore, personalized therapeutic strategies should be warranted by GNRI. Other important findings of the paper are that GNRI significantly correlates with renal function, inflammatory status, and so on. In other words, GNRI might include various risks, which have been considered as prognostic values. Unfortunately, it is unclear whether prognosis could improve in such high-risk patients if their nutritional status ameliorates. In addition, inflammatory status as well as nutritional status may be a prognostic value in patients with high-risk PAD[10]. However, further investigations are needed to resolve these queries.

As for coronary revascularization, appropriate use criteria have been used to evaluate and improve patient selection for percutaneous coronary intervention[11]. However, there have been limited data on similar criteria in patients requiring revascularization for PAD. Moreover, cost-effectiveness and value assessments for the procedures have been very important. To construct clinical assessments, a large national registry is essential. The ongoing J-EVT registry by the Japanese Association of Cardiovascular Intervention and Therapeutics will serve as useful models for the treatment of patients with PAD.

Conflicts of Interest

H.I. received lecture fees from Astellas Pharma Inc., Bayer Pharmaceutical Co., Ltd., Bristol-Myers Squibb Company, Chugai Pharma Inc., Daiichi-San-

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