Sarcopenia in Outcome in COPD: is the tip of the iceberg?

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Abbreviations

ASMI: appendicular skeletal muscle mass index

COPD: chronic obstructive pulmonary disease

TSMI: Truncal skeletal muscle mass index
To Editor

We have read with much interest the article by Choi YJ et al. who retrospectively reviewed the three hospital records of all patients with chronic obstructive pulmonary disease (COPD) for one year period in Korea. In the 24,502 patients with COPD, they found that the skeletal muscle mass was correlated with acute exacerbation of COPD significantly. Cystatin C and truncal skeletal muscle mass index (TSMI) were significant risk factors for acute exacerbation of COPD.

We would like to add some issues for better understandings of their study.

There are two types of sarcopenia. Primary (age-linked) sarcopenia and secondary sarcopenia (when clear causal causes other than aging are present). Sarcopenia can develop from systemic illness, particularly may trigger from inflammatory processes, such as COPD, cancer or organ failure. Malnutrition, physical inactivity, disability, or illness-related immobility contribute to the development of sarcopenia.

Malnutrition also is common in COPD patients, which causes decreased diaphragmatic mass, deterioration of pulmonary status, decreased exercise capacity, and is associated with higher mortality rate. Therefore, nutritional support is an important part of treatment of COPD patients. Oral nutritional supplements should be given together with dietary counseling in order to promote weight gain, increase total calorie intake, improve anthropometric measurements, hand grip strength and better quality of life in COPD patients with body mass index <20 kg/m² and have a high risk of malnutrition. Nutrition intervention is most effective when combined with physical and pulmonary exercise program. Knowing the nutritional support and exercise status of the patients participating in the study by Choi YJ et al. would have made the study more meaningful and detailed.
They reported 189 male patients and 64 female patients in the study. Male patients with an appendicular skeletal muscle mass index (ASMI) lower than 6.727 kg/m² have a higher hospital mortality and emergency room visits in the study period than male patients with an ASMI higher than 7.407 kg/m². Truncal skeletal muscle mass index, total SMI and ASMI were correlated with acute exacerbation of COPD significantly in male patients. The difference in the number of male and female patients in the study and the low number of female patients may have statistically affected the results. If the number of female patients were more, would the statistical results be affected? Dementia also higher in female patients. Nutritional status is adversely affected in patients with dementia.

The article by Choi YJ et al.¹ is a retrospective design and non-protocolized. They also stated that was a limitation for bioelectrical impedance analysis for muscle mass measurements. Bioelectrical impedance analysis, portable and cheap tool that can calculate fat free mass and fat mass in patients with COPD. On the other hand, BIA in patients with COPD often overestimates fat mass and fat free mass at several degrees of Global Initiative for COPD severity⁴.

It was shown that body composition metrics, varied significantly by age, sex and race, in 12128 outpatients which was used to create population reference curves⁵. The fact that the current study was conducted in the patient population in Korea is valuable in terms of publishing the regional data. Well designed and protocolized trials on the nutrition, rehabilitation, muscle mass and prognosis of the COPD need to address these questions.

References


