

Editorial

Chronic Heart Failure, Nutritional Status and Survival

Insuficiencia cardiaca crónica, estado nutricional y supervivencia

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In the article published in *Revista Española de Cardiología* Bonilla-Palomas et al. from Córdoba present their analyses of the clinical course of 208 heart failure (HF) patients discharged from a single hospital over a 15-month period.¹ The authors concentrated on nutritional status (NS), assessed during the acute admission. They assessed anthropometric measurements, comorbidities and biochemical measures (albumin, prealbumin, transferrin, total cholesterol, calcidiol, folic acid, vitamin B₁₂, and lymphocytes) as well as the Mini Nutritional Assessment (MNA), a score designed to provide a simple and rapid assessment of the patient's NS. The subjects were followed for a mean duration of 22 months and all-cause mortality was assessed. The patients studied all satisfied the diagnostic criteria recommended by the European Society of Cardiology² and included patients with HF and preserved ejection fraction (HFPEF).

This MNA scoring system was originally designed to assess NS in elderly subjects and includes 18 scored items including anthropometric measurements, a patient self-assessment, and questions regarding diet, lifestyle, mobility, and medication.³ The MNA has been validated against expert physician assessment including biochemical analyses of nutritional status and has been used to categorize elderly patients as well nourished, at risk for malnutrition, or malnourished.

This study showed that according to the MNA 13% of patients were malnourished and 59.6% at risk of malnutrition with only 27.4% having a normal NS.¹ This compares with estimates of 16% of chronic HF patients being classified as cachectic in an early report⁴ and estimates of between 10% and 30% in other chronic disorders.⁵ The malnourished patients were older, more likely to be female, have worse renal function, a lower hemoglobin, and more cognitive impairment but otherwise their level of comorbidity was similar.

One year mortality in patients who were classified as malnourished according to the MNA score was 56% compared to 23.5% in the patients classified as being at risk of malnutrition, and 11.3% in those patients with an adequate NS. These results are similar to the adverse survival effect of cachexia in earlier reports,⁴ with the "at-risk" NS status group forming a larger intermediate group. The value of this MNA over simple body mass index or

weight loss assessment might therefore be the added value of identifying an at-risk intermediate group. In multivariate analysis the factors found to be independently associated with mortality were age, left ventricular ejection fraction, HF etiology, MNA classification, and serum sodium.

One can assume HFPEF patients had a similar profile of malnourishment as HF with reduced ejection fraction patients, as the left ventricular ejection fraction did not differ between the 3 classifications according to the MNA. This is a useful aspect of this study for it does not artificially exclude this important group of HF patients as so many previous HF studies have done.

It has long been known that cachexia, variously defined as nonintentional weight loss of 5%, 6.5%, 7.5%, or 10%, is a marker of a poor prognosis in HF as well as in many other chronic disorders including cancer, chronic obstructive pulmonary disease, chronic renal failure, and AIDS.⁵ Whether the addition of dietary assessment and the other aspects of the MNA adds discrimination or added sensitivity to the assessment of cachexia or the use of the simple body mass index has not been assessed in this study. Similarly it could be argued important aspects of the cachexia syndrome such as immune activation,^{6,7} gastrointestinal dysfunction,⁸ abnormal reflexes,⁹ or other biomarkers^{10,11} are not being adequately assessed by the MNA and hence some would argue for these factors to be assessed independently rather than being lumped together in a single nutritional score. It depends on the purpose of such measurement, either for detailed knowledge of individual subjects or for routine risk detection in larger patient cohorts. By utilizing a score used for the assessment of elderly subjects this report does have the advantage of using a scoring system widely used in other branches of medicine, so that consistency can be achieved across clinical disciplines and the prospect of introducing nutritional assessment for all patients admitted to hospital is increased.

Novel aspects of this study¹ were that it extended the clinical value of the MNA into an unselected HF population irrespective of age, and that it demonstrated the superior value of a global averaging assessment of NS over the individual measures such as body mass index and serum prealbumin, (many of which, of course, are highly correlated with the MNA score). It also showed the very high prevalence of patients at risk of the more severe forms of NS impairment (usually described by the term cachexia) and showed these patients were at increased risk compared to those with normal or adequate NS. In fact only one quarter of these patients were assessed as having an adequate nutritional status, highlighting the high burden of this adverse prognostic feature in the HF population.

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The authors comment on the surprising (to them) lower rate of prescribing beta-blockers on discharge in the malnourished patients.¹ Of course we cannot exclude the possibility that physicians are less likely to prescribe beta-blockers in those they see as frail and weak, due perhaps to weight loss, but an equally plausible explanation is that beta-blockers actually help prevent malnourishment, as it has long been known that beta-blockers cause weight gain^{12,13} even in HF,¹⁴ and beta-blockade is being assessed as an anticachectic therapy.¹⁵

I believe this is an important study and concur with the authors' final summary comment: "The assessment of NS should therefore be integrated as a fundamental part in the overall assessment of HF patients." Their added comment that nutritional intervention "may help improve the prognosis of these patients" is a tantalizing possibility, but one that can only be supported if adequately designed and powered interventional studies assess this important potential treatment. Only then can nutritional assessment and treatment be considered part of the standard guidelines for the management of HF. Such services are already being considered in a wider cardiovascular context.¹⁶

CONFLICTS OF INTEREST

None declared.

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