



EDITORIAL COMMENT

Frailty, age and heart failure

Fragilidade, idade e insuficiência cardíaca

Maria Mónica Mendes Pedro ^{a,b,c,d}

^a Serviço de Cardiologia, Centro Hospitalar Universitário Lisboa Norte, Lisboa, Portugal

^b Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal

^c Centro Académico de Medicina de Lisboa, Lisboa, Portugal

^d Centro Cardiovascular da Universidade de Lisboa, Lisboa, Portugal

Available online 10 January 2023



Frailty has traditionally been associated with aging, reflecting a state of physiological decline with decreased physical fitness, weight loss, sarcopenia and progressive reduction of autonomy. There is also a marked vulnerability to adverse health events and diminished capacity to tolerate and adapt to stressors such as acute illness, and surgical or medical interventions.¹

Fried et al. were the first to describe the pathophysiology of the frailty process in detail, signaling the path toward functional decline.² They proposed a frailty index by measuring the phenotype, including muscle strength, muscle mass, walking speed, energy expenditure and nutritional status/weight loss. This index remains the most influential frailty tool.

Since then, several screening tools have been proposed to assess frailty, which can be divided in two main groups: ones that address physical frailty, that is, signs and symptoms associated with higher vulnerability to adverse health outcomes (weakness, fatigue, weight loss, slow gait, low activity), and deficit accumulation frailty or index frailty, that considers co-morbidities and cumulative illnesses.³

Whichever tool is used to measure frailty, it seems to be unanimous that advanced frailty is associated with

increased mortality, disability, hospitalization and procedural complications.⁴

The prevalence of frailty depends on the frailty scale used and, on the population, studied, and varies among studies.⁵

So far, most of the studies addressing frailty have been conducted in old people. Studies that comprise or are directed toward younger people are usually in the context of critically ill patients in different settings, heart failure including advanced heart failure (HF).⁶

The frailty phenotype is very common in heart failure⁷ and frailty itself is not a syndrome exclusive to old people or only associated with aging. It can affect patients at any time of life and, when present, can negatively influence morbidity and mortality. As such, the aim of the study “Frailty phenotype in heart failure: A condition that transcends age”⁸ raises the pertinent question of whether there are differences between younger and older pre-frail and frail HF outpatients using Fried’s criteria, although no substantial differences were found by the authors between the two groups (only in hand grip strength, gait speed and in the prevalence of type 2 diabetes). That is not surprising given the limitations stated by the authors (cross-sectional study; small sample size; use of estimated and indirect measures of body composition), but also perhaps because only two wide groups were considered (<65 years and ≥65 years). The patients were broadly in the same stage of syndrome

DOI of original article: <https://doi.org/10.1016/j.repc.2022.02.009>
 E-mail address: monicapedro01@gmail.com

<https://doi.org/10.1016/j.repc.2023.01.008>

0870-2551/© 2023 Sociedade Portuguesa de Cardiologia. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

impact, and older people with substantial age-related comorbidities had most probably already died and were not “healthy” enough to endure HF.

It would be interesting in the future to perform longitudinal studies, controlled with non-frail patients, with more discriminated age groups, to define age-specific cut-offs for frailty criteria, including, as stated by the authors, hand grip strength and gait speed; to evaluate other frailty tools and determine which are the best to assess HF patients, whether there are advantages to using different criteria in different age groups to refine the diagnosis and, eventually, to come to a consensus concerning definition and the tools to be used.

Finally, if diagnosing and measuring is important, there is also a need to agree on the best strategies for preventing, treating and/or mitigating frailty and its impact on the quality of life, morbidity and mortality of HF patients.⁹

Conflicts of interest

The author has no conflicts of interest to declare.

References

1. Clegg A, Young J, Iliffe S, et al. Frailty in elderly people. *Lancet*. 2013;381:752.
2. Fried LP, Tangen CM, Walston J, et al. Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci*. 2001;56:M146–56.
3. Walston JD, Bandeen-Roche K. Frailty: a tale of two concepts. *BMC Med*. 2015;13:185.
4. Aquayo GA, Donneau AF, Vaillant MT, et al. Agreement between 35 published frailty scores in the general population. *Am J Epidemiol*. 2017;186:420.
5. Theou O, Brothers TD, Mitnitski A, et al. Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality. *J Am Geriatr Soc*. 2013;61:1537.
6. Jha SR, Hannu MK, Chang S, et al. The prevalence and prognostic significance of frailty in patients with advanced heart failure referred for heart transplantation. *Transplantation*. 2016;100:429–36.
7. Denfeld QE, Winters-Stone K, Mudd JO, et al. The prevalence of frailty in heart failure: a systematic review and meta-analysis. *Int J Cardiol*. 2017;236:283–9.
8. Valdivieso R, Moreira E, Martins S, et al. Frailty phenotype in heart failure: a condition that transcends age. *Rev Port Cardiol*. 2023;42:225–34.
9. Apóstolo J, Cooke R, Bobrowicz-Campos E, et al. Effectiveness of interventions to prevent pre-frailty and frailty progression in older adults: a systematic review. *JBI Database System Ver Implement Rep*. 2018;16:140.