



EDITORIAL COMMENT

Heart failure hospitalization: Just a piece in the puzzle

Internamentos por Insuficiência Cardíaca: apenas uma peça no *puzzle*

Aurora Andrade

Clinica de Insuficiência Cardíaca, Serviço de Cardiologia, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal

Available online 3 February 2020

Heart failure (HF) remains a major public health problem. Besides its high prevalence, it has an adverse impact on affected individuals' quality of life, and is associated with high morbidity and mortality.^{1–4}

Recently, Fonseca et al. published estimates of HF prevalence and its consequences for this century in Portugal, concluding that, if current clinical practices are maintained, the prevalence of HF will increase, affecting almost half a million individuals in the coming years, with all the inherent consequences.²

The natural history of HF is characterized by acute decompensation episodes. Hospitalizations, in addition to having a dramatic impact on patients' quality of life, are a strong predictor of mortality, risk of which increases significantly with each hospitalization.⁵ Furthermore, they have an enormous economic impact, as most of the costs of HF are due to hospitalizations.⁶

Despite therapeutic advances in the treatment of HF, especially of chronic HF with reduced ejection fraction (HFrEF) using therapies that can dramatically improve outcomes, the prognosis of HF after hospitalization is still poor.⁷ Although progress has been made in reducing in-hospital mortality, post-discharge readmission and mortality rates remain unacceptably high. A report from the European Soci-

ety of Cardiology Heart Failure Long-Term Registry showed that all-cause mortality among acute HF patients was 4.9% during the index hospitalization and 23.6% within one year, and the incidence of the combined outcome of death or HF hospitalization within a year of discharge was 40.1%.⁸

After discharge, the transition phase from hospital to home is a vulnerable period, characterized by high rates of readmission.^{4,9} The success of this phase necessarily reflects the quality of hospital treatment but, importantly, it also requires intensive education of patients and their family or caregivers and the development of an effective transition and follow-up plan. There is no single HF care model, nor do such care models demonstrate a class effect. Successful structured HF programs should include patient education, be multidisciplinary and have specialized follow-up procedures, and care must be maintained along the continuum of HF. Patients included in well-structured HF management programs have better outcomes.⁷

The objective of the single-center study by Agostinho et al. published in this issue of the *Journal* was to evaluate the impact of a structured follow-up program for HF patients on readmission and mortality rates and on quality of life, after an episode of hospitalization due to the syndrome.¹⁰ The study population consisted of 50 consecutive patients admitted to a general cardiology ward for acute HF between April 2016 and November 2017, who were discharged after the implementation of a protocol-based follow-up program. The control group consisted of patients discharged before the beginning of the program. The two groups were assessed

DOI of original article: <https://doi.org/10.1016/j.repc.2019.03.006>

E-mail address: amvandrade@hotmail.com

using a score with three variables (New York Heart Association functional class at discharge, left ventricular ejection fraction and age). As reported by the authors, caution should be exercised in interpreting the study outcomes, as it was not a randomized controlled study and the sample size was small. Another factor that may limit the interpretation of the results includes the fact that the two groups were studied at different times.

Notwithstanding these limitations, the study's results corroborate what is reported in the literature and show that a structured HF follow-up program has a considerable impact on patients' prognosis, with significant reductions in all-cause and HF readmission, mortality and the composite endpoint of all-cause readmission or mortality. As pointed out by the authors, the success achieved may be related to the intrinsic characteristics of the protocol; among other factors, patients included in the follow-up program were prescribed significantly more therapies with prognostic impact.

In this particular study, the fact that it is exclusively centered on the cardiologist, as stated in the protocol, is feasible for a small number of patients, but would make it difficult to implement outside the context of a clinical study. It would be desirable to extend this program and develop it using a multidisciplinary HF team approach.

Although there is no doubt about the importance of such structured follow-up programs, in Portugal there seems to be some inertia in the creation of HF management programs, as only a minority of hospital centers have actually implemented these measures. The best model for treatment of HF patients is one that fits local conditions, aiming to improve the prognosis of the patient with HF.

Conflicts of interest

The author has no conflicts of interest to declare.

References

1. Ceia F, Fonseca C, Mota T, et al. Prevalence of chronic heart failure in Southwestern Europe: the EPICA study. *Eur J Heart Fail.* 2002;4:531–9.
2. Fonseca C, Brás D, Araújo I, et al. Heart failure in numbers: estimates for the 21st century in Portugal. *Rev Port Cardiol.* 2018;37:97–104.
3. Gheorghide M, Vaduganathan M, Fonarow GC, et al. Rehospitalization for heart failure: problems and perspectives. *J Am Coll Cardiol.* 2013;61:391–403.
4. Chun S, Tu JV, Wijeyesundera HC, et al. Lifetime analysis of hospitalizations and survival of patients newly admitted with heart failure. *Circ Heart Fail.* 2012;5:414–21.
5. Setoguchi S, Stevenson LW, Schneeweiss S. Repeated hospitalizations predict mortality in the community population with heart failure. *Am Heart J.* 2007;154:260–6.
6. Writing Group Members Lloyd-Jones D, Adams RJ, Brown TM, et al. American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart Disease and Stroke Statistics – 2010 Update: a report from the American Heart Association. *Circulation.* 2010;121:e46–215.
7. Ponikowski P, Voors AA, Anker S, et al. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC). Developed with the special contribution of the Heart Failure Association (HFA) of the ESC. *Eur Heart J.* 2016;37:2129–200.
8. Crespo-Leiro M, Anker S, Maggioni A, et al. European Society of Cardiology Heart Failure Long-Term Registry (ESC-HF-LT): 1 year follow-up outcomes and difference across regions. *Eur J Heart Fail.* 2016;18:613–25.
9. O'Connor CM, Miller AB, Blair JE, et al. Efficacy of Vasopressin Antagonism in heart Failure Outcome Study with Tolvaptan (EVEREST) investigators. Causes of death and rehospitalization in patients hospitalized with worsening heart failure and reduced left ventricular ejection fraction: results from Efficacy of Vasopressin Antagonism in Heart Failure Outcome Study with Tolvaptan (EVEREST) program. *Am Heart J.* 2010;159:841–9.
10. Agostinho JR, Gonçalves I, Rigueira J, et al. Protocol-based follow-up program for heart failure patients: impact on prognosis and quality of life. *Rev Port Cardiol.* 2019;38, ???-???