

Heart failure. Different Aspects of the Same Problem

Insuficiencia Cardíaca. Diferentes caras de un mismo problema

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Acute heart failure syndrome (AHFS) is a frequent pathology, causing multiple consultations in the emergency services of general hospitals, and is associated with high morbidity and mortality. (1, 2) In Spain, around 100,000 annual admissions are produced by AHFS, with figures that are increasing year after year. (3) This increase in the prevalence of heart failure (HF) is due, in part, to the improvement in the survival of cardiovascular diseases, both in ischemic heart disease and in the results of cardiac surgery. (4) On the other hand, HF is a frequent disease in older ages, and since life expectancy is extending the population at risk presenting this condition increases. This implies a significant economic and health resource burden in all countries. (5)

Heart failure is the final phase of many heart diseases, and although the symptoms vary according to their severity, they are usually quite uniform. The main clinical manifestations are different degrees of dyspnea and fluid retention, combined, with or without, signs of poor peripheral perfusion. (6, 7) These symptoms may be chronic or acute and therefore have different forms of presentation. As is well defined in C Belziti's article (8), AHFS can appear in three differentiated forms: rapid onset acute pulmonary edema, which is usually the form of presentation in patients with arterial hypertension. In this case, AHFS is due to a rapid increase in left ventricular telediastolic pressure, associated with altered diastolic relaxation of the ventricular wall. This rapid increase in left intracavitary pressures is transmitted in a retrograde manner to the lung causing pulmonary edema. In this case, veno-arterial peripheral vasoconstriction predominates as a result of the increase in preload, rather than as a real accumulation of fluids. It is the most dramatic form of presentation, with intense dyspnea at rest and severe hypoxemia, but at the same time, it has the best response to treatment and the best prognosis. Acute pulmonary edema is usually secondary to a recent hypertensive crisis or atrial fibrillation with rapid ventricular rate. (9, 10) Once the

initial treatment is established and the causal agent reversed, the prognosis is usually favorable. The profile of these patients is also somewhat different from chronic HF, and although it affects both sexes equally, it is more prevalent in women. It is usually associated with preserved ejection fraction and poorly controlled hypertension.

Acute heart failure syndrome usually appears more slowly in chronic HF, already diagnosed or de novo; in this case, the patient suffers a decompensation with real fluid retention and slower deterioration of the signs and symptoms of HF. (11) These patients have repeated decompensations and can be considered "frequent flyer" of the emergency services in all countries. Although in some mild cases of AHFS the patient can improve with acute treatment and not require hospital admission, most patients require admission in Cardiology or Internal Medicine areas, or even intensive care units depending on their severity. (12) Acute heart failure syndrome is already the most frequent diagnosis of hospital admissions in patients >60 years. (13) It equally affects patients with reduced, minimally reduced or preserved ejection fraction, and despite recent therapeutic advances, with each admission the mid-term prognosis worsens. (9) The occurrence of AHFS in the patient with already treated chronic HF, may be secondary to identifiable causes such as arrhythmia, dietary transgression or lack of adherence to treatment, and it is especially associated with worse prognosis when there is no clear cause triggering decompensation. Although numerous pharmacological and technological treatments have improved the survival of these patients (6, 7), it is estimated that mid-to-long-term mortality remains high at 50% at 4-5 years and at 90% at 10 years. Heart failure units that allow individualized care by specialized doctors and nurses have been created to reduce the number of hospitalizations and improve the prognosis of patients with chronic HF. These units improve patient and caregiver educa-

REV ARGENT CARDIOL 2019;87:4-5. <http://dx.doi.org/10.7775/rac.v87.i1.14528>

SEE RELATED ARTICLE: Rev Argent Cardiol 2019;87:33-39. <http://dx.doi.org/10.7775/rac.v87.i1.13871>

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tion on the disease, improve self-control, and optimize treatment and its adherence. They also allow an early therapeutic intervention when decompensation symptoms start to worsen and in many cases avoid hospital admission for AHFS. These units also serve as liaison with palliative care services in advanced stages of the disease, thereby improving the care and quality of life of end-stage patients. (14)

Generally, AHFS requires urgent therapeutic intervention, but in some cases, as in shock, intervention occurs in an emergency, thus turning it into the most serious form of presentation. (15) Shock is associated with hemodynamic instability with risk of imminent death, which in most cases requires the initiation of support measures with vasoactive drugs. If these do not improve the patient's condition, external mechanical support systems such as ECMO or short-term ventricular assistance should be considered without delay, either as bridge to recovery or as bridge to heart transplantation. The implementation of these circulatory assist systems has improved survival in cardiogenic shock (15), avoiding multiple organ dysfunction due to deficient perfusion of vital organs, especially the renal and hepatic systems. The most important limitation is that these devices are only available in tertiary hospitals. In this study, the most frequent causes of reversible shock, such as myocardial infarction, myocarditis or Takotsubo syndrome, have been excluded, so mortality is high but similar to that described in other studies. (15) In fact, when shock appears in the evolution of chronic HF it translates a very advanced stage of this disease and, if in addition, it affects patients over 80 years of age, as the ones described in this study, (8) it usually has excessive mortality. In addition, the few patients who survive continue to have a significantly higher mortality at one year follow-up.

The future mostly concerns primary prevention, ensuring good control of hypertension and diabetes mellitus, reducing modifiable cardiovascular risk factors such as smoking, obesity and dyslipidemia; and improving lifestyle by adopting healthy diets and doing more physical activity. Moreover, early treatment is recommended once cardiac structural damage that may trigger HF in the future is detected. These measures will no doubt contribute to reduce the occurrence of AHFS.

Conflicts of interest

None declared.

(See authors' conflicts of interest forms on the website/Supplementary material).

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