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Update: Acute Heart Failure

Acute Heart Failure: The Unrecognized Epidemic

Insuficiencia cardiaca aguda: una epidemia poco conocida

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Acute heart failure (AHF) is one of the components of heart failure, a condition that is increasingly common among our patients. Acute heart failure is a major problem on several levels: for the individual patient, for the healthcare system due to the complexity of diagnosis and treatment, and for society because of the high costs. This widespread disease often overburdens the emergency departments of Spanish hospitals and is associated with substantial morbidity and mortality. In Spain, there are about 100 000 hospital admissions per year for AHF, and this figure is showing annual increases.[1] Therefore, within our continuing medical education program, the *Revista Española de Cardiología* will dedicate a new series of "Update" to AHF. To start, international experts will provide an authoritative, clear, and comprehensive overview of the epidemiology of AHF, as well as its pathogenesis and clinical presentation.

Faced with suspicion of AHF, the clinician's first task is to provide a correct diagnosis, which may be a complex process, particularly in elderly patients,[2] given the lack of specific signs and symptoms and the presence of other comorbidities. Identification of AHF has traditionally been based on a medical history, physical examination, chest X-ray, and electrocardiogram. In the last 15 years, and essentially after the publication of the Breathing Not Properly study in 2001,[3] biomarkers have emerged as an important, not to say essential, complement for establishing (or ruling out) a diagnosis of AHF as quickly and reliably as possible in the emergency department. This "Update" pays particular attention to the value of biomarkers and NT-proBNP (N-terminal pro-brain natriuretic peptide) in AHF, not only because these can support diagnosis but also because of their high prognostic value. We also deal with the use of multiple markers in AHF, another topic of great relevance at present.

Imaging techniques have progressed spectacularly in all branches of cardiovascular knowledge, including AHF. Thus, echocardiography can determine whether a patient with suspected AHF has a low or preserved ejection fraction, and numerous new imaging resources are available to provide a more accurate indication of the etiology. We will therefore deal in depth with this topic, guided by some of the pioneers in the identification of new applications for ultrasound and other imaging techniques.

Acute heart failure does not only have an impact on the heart; other organs may also be affected by heart failure, with the kidneys being of particular importance. The term "cardiorenal syndrome" has been coined for failure of both the heart and kidneys, regardless of which organ was the first to be affected and the state of the dysfunction.[4] Such is the involvement of the kidneys in heart failure (and so also in AHF), that heart failure with preserved kidney function has recently become recognized not only as a vascular disease but also as one that preferentially affects both cardiac muscle and the kidneys. Therefore, a chapter has been dedicated to an integrative approach to examining the characteristics of cardiorenal syndrome in AHF.

Treatment of AHF has been divided into 2 chapters, the first focused on pharmacological interventions and the other on nonpharmacological approaches. Clearly, AHF is a congestive disease that requires the use of diuretics. Although scant scientific evidence is available to support the benefit of diuretics, these agents remain the cornerstone of treatment at present and will continue to be important in the near future. However, vasodilators and inotropic agents are also often needed in addition to diuretics. These other agents help relieve symptoms and may even improve hemodynamic parameters in the short term, although they may be associated with increased mortality in the long term. Numerous drugs are in development for the treatment of AHF. Of these, serelaxin seems to be the most promising. This agent has been clearly shown to reduce dyspnea; in the RELAX-AHF study it also improved the long-term mortality,[5] although this was not a primary outcome of the study. The result is currently being validated in a new multicenter prospective study.

Finally, through this "Update", *Revista Española de Cardiologia* offers a current overview of the organizational management of AHF. In the 21st century, AHF should be approached form the perspective of collaboration between emergency care, internists, cardiologists, and primary care physicians, without overlooking the role of specialist nurses in heart failure. Only by working as a team can recurrent emergency room visits by patients with AHF be reduced, thereby enabling patients to live longer with improved quality of life while ultimately also limiting the growing economic burden on the health system.

CONFLICTS OF INTEREST

None declared.

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