Is acute heart failure a highly prevalent orphan disease?

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This editorial refers to ‘EuroHeart Failure Survey II (EHFS II): a survey on hospitalized acute heart failure patients: description of population’ by M.S. Nieminen et al., on page 2725

A large proportion of patients admitted to a cardiology service suffer from acute heart failure (HF). Despite these high numbers, there is surprising little scientific evidence regarding the treatment of this patient group. Most studies of HF treatment have investigated subjects with chronic, stable HF, whether or not preceded by an acute phase of decompensation. But patients with acute HF are a fundamentally different population when compared with chronic heart failure (CHF) patients, as a part of the latter have proven to be more able to survive acute HF and stabilize to a chronic form and some CHF patients did not experience an acute episode at all. Indeed, to what extent the population included in the well-known landmark studies of acute HF differs from the well-known CHF patient is shown by an important current report from the EuroHeart Survey (EHS). This report describes a large population of acute HF patients. The population described in this report differs substantially from the prototypical CHF patient where efficacy of current HF medication has been proven. This difference invokes to question whether acute HF is indeed merely the prelude to CHF, or whether the acute HF population rather represents a broader spectrum of diseases with very different underlying aetiologies. In other words, the question arises whether acute and chronic HF are comparable enough to take the strategies tested in chronic, stable HF patients and apply these to subjects who have been stabilized after an episode of acute HF.

The report by the EHS, in this issue, allows us to evaluate characteristics of the HF patient presenting acutely at the emergency department, and how this compares with the population included in the well-known landmark studies that established current HF treatment.

Recently, several HF surveys have been published. The first EuroHeart Failure Survey (EHFS I) described the demographics of hospitalized patients admitted because of acute HF, but also included those having a history of HF. However, combining acute HF patients and patients having chronic stable HF precludes an answer, as to how acute HF patients differ from those with chronic, stable forms of HF. The ADHERE study indeed focused on acute HF and analyzed only patients admitted in American hospitals having HF based on International Classification of Diseases, Ninth Revision (ICD-9) coding. However, this strategy allows only one patient to be included more than once, as several admissions in the same patient might occur during the registration period. Moreover, although this survey gives an extensive overview of the hospitalized HF patients in the United States, there was hardly any follow-up data which makes it difficult to compare this patient group to the groups with chronic HF.

The EuroHeart Failure Survey II (EHFS II) published in this issue is the first European registry that allows for an analysis of this special patient group admitted for acute HF. The large number of participating European countries is impressive. In contrast to the EHFS I, the EHFS II has excluded chronic, stable HF allowing to dissect the population admitted for acute HF. Therefore, the survey gives us an excellent overview of a severe HF population of which the prognosis is known to be very poor, and a population that might profit the most from a proper and well-defined HF treatment.

Baseline characteristics of the recruited patients reveal that the acute HF population is typically elderly (mean age 69.9 years), 61% being male and that a significant number of patients have preserved ejection fraction HF (34.3%). If we compare the baseline characteristics of this acute HF population with the major randomized clinical trials on which the HF guidelines are based, some noticeable differences appear. The population of all major beta-blocker trials, except for the SENIORS trial is typically younger, all have systolic HF and female patients are a minority. For example, the median age in the landmark carvedilol trial was 63.2 years and 79% were male, having a mean ejection fraction of 19.9%. This contrasts sharply with the acute HF population described in this survey. Thus, a great deal of how we choose to manage our patients with acute HF is influenced by data—though excellent—derived from very different patient populations.

This sharp contrast between the typical patient population studied in the landmark trials on the one hand, and the type of patient admitted for acute HF on the other hand suggests that the evidence gathered for modern HF treatment may not necessarily apply to a substantial
number of acute HF patients. This presents a serious challenge, as short-term prognosis of acute HF is particularly poor. This poor prognosis suggests that for an important part of the acute HF patients, the standard treatment we currently apply may not be optimal, and these standards may need to be challenged. As an example, assuming differences in underlying aetiology, it is not hard to expect that there may be different targets for treatment. It is therefore, conceivable that standard HF treatment, derived from quite a different more chronic population, may miss its target in part of the acute HF patients.

Despite these caveats, for the lack of a better strategy, acute HF (after initial therapy mainly with diuretic agents with or without revascularization) is often treated by applying treatment that is actually established for patients with chronic HF. The current EHFS II report gives us a unique insight into treatment at discharge: 80.2% of all patients are being discharged with an ACE-inhibitor or an angiotensin receptor blocker (ARB). In contrast, the use of beta-blockers at discharge was only 61.4%, and at admission, only a minority of the patients with a history of CHF received beta-blockers. The low number of beta-blocker use at discharge reflects our lack of knowledge regarding the position of beta-blockers in the treatment of acute HF. It is, understandably, common practice to avoid beta-blockers in acute decompensated HF. However, the guidelines of CHF recommend starting beta-blockers when a patient is euolemic, and the use of beta-blockers should be considered mandatory in those with acute ischaemic heart disease leading to HF. Clearly, more information is needed before blanket recommendations are made for this highly challenging group. Until such information is available we must as good clinicians accept the adage that in the absence of solid clinical data, one must use good clinical judgment, and in this setting the increasing use of ACE-inhibitors, ARBs, and beta-blockers of those with acute HF reflects the more widespread embrace of these important drugs for CHF treatment.

In conclusion, the EHFS II offers us a unique insight into this most severe form of HF, a prevalent disease that presents itself in an unheralded fashion, and with acute the need for treatment. Such acute HF comprises a large number of underlying aetiologies, many of which seem not to have been represented in the large HF trials of CHF, most notably acute severe and active coronary ischaemia. Further, this form of acute HF carries a terrible prognosis. It is a sad irony that despite an impressive number of well-designed randomized trials on subjects with CHF, we actually need to manage this prevalent disease with very little evidence to base our strategy on. Future EHFS II analyses may also allow us to compare different strategies, and postulate novel ways to treat subjects stabilized after acute HF.

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References


