

Treatment and prognosis in patients with acute severe heart failure: does etiology matter?

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Heart failure (HF) is a considerable medical, social, and economic challenge for modern health care systems. The growing number of patients with HF is related to the population aging, and, paradoxically, to the advances in the treatment of cardiovascular diseases. Today, the better recognized problem is that of HF with reduced ejection fraction (HFREF) than that of HF with preserved ejection fraction or that of even less well-recognized HF with midrange ejection fraction.^{1,2} Currently, we use a range of treatment strategies modifying prognosis in patients with chronic HFREF, which has decreased the mortality rate by 50% during the last 25 to 30 years. However, the effective treatment strategy for acute HF is still lacking.^{1,2}

Although there are several definitions of advanced HF, they all emphasize that patients with this stage of the disease have the worst prognosis and are candidates for left ventricular assist device implantation or heart transplantation (HTx).¹⁻⁴ In many of these patients, it is difficult to differentiate acute HF from low output state and end-stage disease, and it is particularly important to assess if HF is really advanced and if there are any options left other than HTx.⁵ Most of those patients have truly end-stage HF with multiorgan insufficiency. To diagnose truly advanced HF, the etiology should be established, the possibility of causative treatment should be considered (eg, revascularization or heart valve surgery), potentially reversible causes should also be considered (eg, toxins or myocarditis), and an attempt at therapy optimization should be made.⁵ It is known that in some cases of acute de novo HF, the recovery of the patient is possible with causative treatment, such as early revascularization in acute coronary syndrome. However, there are scarce and controversial data on the effect of ischemic etiology on the prognosis of patients with advanced HF in comparison with the nonischemic etiology.^{1,6,7}

Ostręga et al⁸ recruited patients with acute HF hospitalized between 2011 and 2014, presenting

with at least one of the following characteristics: pulmonary congestion, cardiogenic shock, catecholamine or intraaortic balloon pump support, ultrafiltration, mechanical ventilation, prolonged use of intravenous diuretics, fluid in the body cavities requiring evacuation, or multiorgan failure. Patients with acute coronary syndrome were excluded. This is the first study in Poland to investigate such a unique group of patients.

The authors compared patients with the ischemic etiology of HF with those with the nonischemic etiology. They did not find any significant difference in prognosis between the groups. It can only be speculated whether treatment with percutaneous coronary intervention in some patients with ischemic HF could influence the prognosis. The results of this study confirm that prognosis in patients with severe HFREF is poor, and the authors emphasized that the mortality rate in acute severe HF remains high. On the other hand, the study shows that when using a broad spectrum of both invasive procedures and medical intensive treatment in a specialized center, it is possible to discharge from 75% to 78% of patients from the hospital, even with improved New York Heart Association (NYHA) class (NYHA I in 1% vs 2% of the ischemic and nonischemic groups, respectively, or NYHA II in 35% vs 42% of the groups, respectively). Twenty-five patients were referred for elective HTx. The mortality rate 12 months after admission was 51% for the ischemic group and 44% for the nonischemic group. In a similar study of Lourenco et al,⁶ prognosis in patients with advanced HF hospitalized between 2003 and 2006 was compared according to etiology. They found that despite higher in-hospital mortality rates in patients with ischemic HF compared with those with nonischemic HF (11% vs 4%), the ischemic etiology was not an independent predictor for in-hospital mortality. There was no difference in long-term survival between the ischemic and nonischemic HF (70% vs 76.8%). It seems that although the initial

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process is different in ischemic and nonischemic HF, the subsequent pathophysiology of HF is similar.⁹ However, guidelines for HF treatment do not distinguish between different etiologies.^{1,2}

The results of the study by Ostreġa et al^{1,2} emphasize the need for prevention of HF, preferably starting at stage A of the American College of Cardiology Foundation/American Heart Association classification.¹⁰ Another important issue is prevention of HF progression using the methods recommended by scientific societies, such as the newest evidence-based therapies, and, in terms of pharmacological treatment, using not only the appropriate drug classes, but also optimal doses. Implementation of the guidelines also requires a change in the health care systems, especially in Poland. It is recommended that patients with HF should be managed by multidisciplinary teams of specialists.

It is never too early to refer patients with suspected advanced HF to tertiary centers, where they may be considered for HTx or left ventricular assist device implantation. As shown by Ostreġa et al,⁸ even patients with the most severe HF have a chance for improvement when treated in a well-equipped and experienced center. The advances in HF treatment in recent years have probably contributed to similarities in the prognosis of patients with ischemic and nonischemic HF.

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