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ESC Editors' Network

Heart failure 2019. Insights from the National Society of Cardiology Journals

Insuficiencia cardiaca 2019. Reflexiones de las Revistas de las Sociedades Nacionales de Cardiología

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INTRODUCTION

Most studies on heart failure (HF) management published in 2019 by high-ranking impact factor international journals focus on drug therapy.

This included administration of sacubitril-valsartan with initiation during the index admission and the benefits of SGLT2 inhibitors in reducing cardiovascular mortality and HF. Most of these studies, targeting a broad readership, fail to characterize important local issues.

Improvement in HF management needs to take into account specificities from different European Society of Cardiology (ESC) member countries. This approach may be achieved and disseminated to cardiologists by the National Society of Cardiology Journals (NSCJ). During the ESC Congress 2019, the ESC Editors' Network started an initiative intended to boost dissemination of cardiology research published in the NSCJ by summarizing in a review paper the evidence gathered in selected areas. The ESC Editors Network members decided the first topic of such a review to be publications in the field of HF.

Epidemiology

Inequalities in the prevalence of risk factors, cardiovascular disease burden, cardiovascular mortality, and implementation of some therapeutic methods (coronary interventions, device implantations, and cardiac surgery) among the ESC member countries have recently been shown in the ATLAS study. These shortcomings depend on socio- economic factors and affect more predominantly middle-income than high-income countries. In a single-centre observational study of 1006 patients admitted to a coronary care unit in Egypt, Badran et al.[1] estimated the prevalence of HF by gender and preserved or reduced left ventricular ejection fraction (LVEF). They reported a higher prevalence of HF and a higher incidence of HF with reduced ejection fraction (HFrEF) among women. Female patients were older, more likely to be obese, with more co-morbidities, had less acute coronary syndromes and required fewer coronary interventions, but had a prognosis similar to men.

Nationwide information on mortality and readmissions in HF patients is also of interest. A retrospective analysis from Spain aimed to identify factors associated with in-hospital mortality and readmissions in 77 652 HF patients.[2] In-hospital mortality was 9.2%, rising to 14.5% at 1 year. The 1-year cardiovascular readmission rate was 33%. Risk factors associated with mortality were stroke, metastatic cancer, cardiorespiratory failure, shock, and acute myocardial infarction. Risk-standardized mortality rates were lower among patients discharged from high-volume hospitals. Importantly, the availability of a cardiology department at the hospital was associated with better outcomes.

Specific causes of heart failure

Calcific aortic valve disease (CAVD) is a common disorder which may progress while remaining clinically unrecognized. However, the progression mechanisms remain unknown. In a single-centre study from Bulgaria, Tomova et al.[3] tested the hypothesis that the polymorphism rs10455872 at the lipoprotein(a) (LPa) gene locus increases the risk of CAVD. In a comparison of 108 CAVD patients with 38 controls, they reported that the presence of 2:1 mutant allele of the

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gene was associated with a four-fold greater risk for CAVD. A report from the *Austrian Journal of Cardiology* by Kauffmann et al.[4] demonstrated that the diagnosis of transthyretin-amyloidosis has recently improved significantly with structural screening by magnetic resonance imaging (MRI). The coexistence of CAVD and transthyretin-amyloidosis has substantial implications. The study suggested the value of the electrocardiogram, echocardiography, MRI, technetium radionuclide imaging, and endomyocardial biopsy in these patients.[4] Subclinical myocardial involvement is common in systemic sclerosis (SSc) and is associated with HF and a worse prognosis. In a study of 73 SSc patients from Hungary, Vertes et al.[5] tested the 2D-speckle-tracking-derived global longitudinal strain (GLS) for the detection of early myocardial involvement.

Lower GLS values were found in patients compared with gender- and age-matched healthy controls. GLS values correlated with the duration of the disease from the onset of Raynaud's phenomenon, from the first non-Raynaud symptoms, and with the New York Heart Association (NYHA) functional class.

Pathogenesis

In a prospective Russian study including 297 patients, Lelyavina et al.[6] reported the potential for differentiation, regeneration, and growth of satellite skeletal muscle precursor cells obtained from patients with HFrEF. The studied parameters were similar to those found in healthy donors. This may explain why walking >1.5 h/day induces more physiological reverse myocardial remodelling than aerobic training.

Diagnosis

In another Russian study, Vdovenko et al.[7] compared 80 patients (NYHA Class I–IIa) with chronic HFpEF with 30 healthy controls by using the 6-minute walk-test and echocardiography. All patients had diastolic dysfunction (60 abnormal relaxation patterns and 20 pseudo normal patterns) with reduced global and segmental LV strain. The im- pact of HF on other body organs has been analysed by Ic¸en et al.[8] from Turkey assessing liver stiffness (LS) in HF patients. Liver stiffness estimated using an ElastPQ technique was increased in patients with more advanced NYHA class. A higher LS was associated with higher right ventricular myocardial performance index, regurgitation pressure gradient, NT-proBNP, and aspartate aminotransferase levels. Assuming that the SYNTAX score is not just a measure of the severity but also the complexity of coronary artery disease Öztürk et al.[9] analysed the degree of coronary atherosclerosis, estimated by SYNTAX score and myocardial viability in Turkish patients with ischaemic cardiomyopathy. Patients without viability had a significantly higher SYNTAX score compared with those with viable myocardium.

Treatment

Clinical implications of HF associated with valvular heart disease has been reported by several NSCJ. Transcatheter aortic valve implantation (TAVI) is an alternative to surgical aortic replacement for symptomatic severe aortic stenosis. Indications are now rapidly expanding towards patients at lower surgical risk. Generalization of the transfemoral vascular approach, technological advances, and increased opera- tor skills have resulted in higher rates of procedural success and improved long-term survival. However, data on the incidence of readmission for HF after successful TAVI are scarce.

A French study on 1139 patients, by Guedeney et al.[10] reported that readmission for HF occurs in 1/10 patients after TAVI and suggests a strong risk factor for mortality. The main risk factors for HF readmission were LVEF ≤ 35%, chronic pulmonary disease, chronic kidney disease, diabetes, and atrial fibrillation. Along with international multicentre trials on the percutaneous mitral repair of functional mitral regurgitation associated with HF, national registries provide valuable real-life results in unselected patients which may inform clinical decision making at a local level.

Benak et al. reported a cohort of 30 MitraClip implantations in Czech patients with dilated cardiomyopathy and severe functional mitral regurgitation. Procedural success was 97% with no 90-day mortality. At 1 year, significant improvements in functional class, and quality of life scores were reported, associated with a reduction of LV myocardial mass, an increase in systolic and diastolic arterial pressure and a mortality rate of 10%.

CONCLUSION

Instead of publications in high-ranking impact factor international journals, NSCJ cover a wide spectrum of diagnostic and therapeutic modalities taking into account the national specifics of HF. In contrast, studies published in NSCJ are often single-centre and observational. However, information on HF strategies at a national level are useful in implementing ESC clinical practice guidelines and in optimizing HF patients' care.

CONFLICTS OF INTEREST

None declared.

DISCLAIMER

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