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EDITORIAL

Special issue on heart failure

This issue of *Acta Cardiologica* is devoted to heart failure (HF). HF is a clinical syndrome characterised by specific symptoms (e.g. dyspnoea, fatigue) and signs (e.g. oedema, rales). HF poses a unique medical burden of high morbidity and mortality [1]. Malnutrition is common among HF patients. The prognostic nutritional index (PNI) and controlling nutritional status (CONUT) are widely used for evaluation of nutritional status in HF patients. In their study, Akbulut et al. analysed the relationship between echocardiographic measures of right heart function and right atrial pressure and nutritional status in 133 patients hospitalised for acutely decompensated HF. Based on echocardiographic data, the authors developed a novel HF nutritional index (HFI-N) to predict nutritional status [2]. In HF, little is known about autonomic symptoms, and associated factors, and their relationship with health-related quality of life in chronic heart failure. Da Silva et al. elegantly sowed that autonomic symptoms, especially for orthostatic intolerance, vasomotor and secretomotor subdomains, are prevalent and are associated with fatigue complaints and poor health-related quality of life in congestive HF [3].

HF due to left ventricular (LV) dysfunction is categorised according to LV ejection fraction (LVEF) into HF with reduced ejection fraction (with LVEF $\leq$40%, known as HFrEF; also referred to as systolic HF), HF with preserved ejection fraction (with LVEF $\geq$50%; known as HFpEF; also referred to as diastolic HF), and HF with mid-range ejection fraction (with LVEF 41 to 49%; known as HFmrEF). HFmEF represents the least common HF phenotype, being observed in approximately one in five patients with HF. In their study, Gracia Gutiérrez et al. reported the clinical profile of HF in 267 HF patients admitted to the Internal Medicine department of a tertiary hospital in Spain. HFmrEF showed similar characteristics and outcomes to both HFpEF and HFrEF [4].

Early clinical diagnosis of HF is challenging because the signs and symptoms are neither sensitive nor specific for diagnosis. Serum brain natriuretic peptide or B-type natriuretic peptide (BNP) is clinically useful in diagnosing and excluding congestive HF. D-Dimer has been shown to be upregulated in congestive HF. Nair et al. compared the diagnostic accuracy of NT-proBNP and D-Dimer and the correlation of these biomarkers with echocardiographic parameters in acute decompensated HF. D-Dimer showed a positive correlation with NT-proBNP (Figure 1) but not with the echocardiographic parameters studied. This lack of correlation suggests an independent pathophysiological mechanism underlying the upregulation of D-Dimers in acute decompensated HF [5].

The development of pulmonary hypertension in patients with HF is associated with increased morbidity and mortality. The CardioMEMS® HF System is able to remotely monitor changes in pulmonary artery (PA) pressure, an early indicator of the onset of worsening HF. Using the CardioMEMS® system, Sethi et al. showed that in ambulatory HF patients there was a diurnal variation in PA pressure with a nocturnal rise in systolic and mean PA pressure without significant change in PA diastolic pressure. Therefore, when remote PA pressure monitoring is used to assess impact of newer therapies on PA pressure, diurnal variation of PA should be considered before attributing the effects to the therapy being tested [6]. The pulmonary diffusing capacity for carbon monoxide (DLCO) is reduced in chronic HF. In 51 HF patients, Izadi et al. showed that the decrease in DLCO parameters was correlated with the reduction in EF. Therefore, DLCO testing might be helpful to predict HF severity [7]. Shock index (SI), ratio of heart rate over systolic blood pressure, was introduced as a bedside tool to assess body volume status as well as an indicator of shock in terms of septic or haemorrhagic shock. Heidarpour et al. reported the prognostic value of SI and modified SI in patient with acute decompensated HF. Higher SI and MSI values were associated with increased mortality risk [8]. In the same issue of *Acta Cardiologica*, Guo et al. reported that among cardiogenic shock patients complicating acute myocardial infarction who had primary percutaneous coronary intervention with the support of Intra-Aortic Balloon Pump (IABP), higher SI before IABP implantation was associated with poorer prognosis [9].

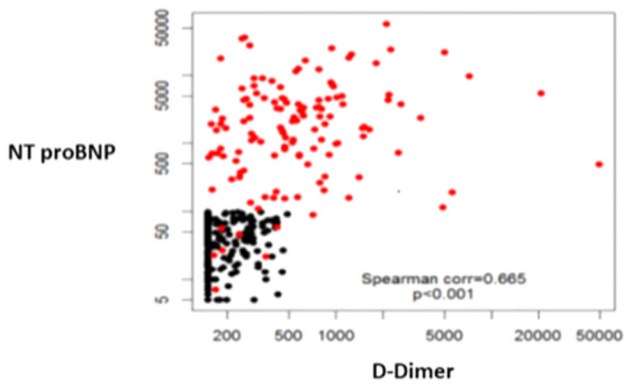

Figure 1. Correlation of NT-proBNP and D-Dimer.

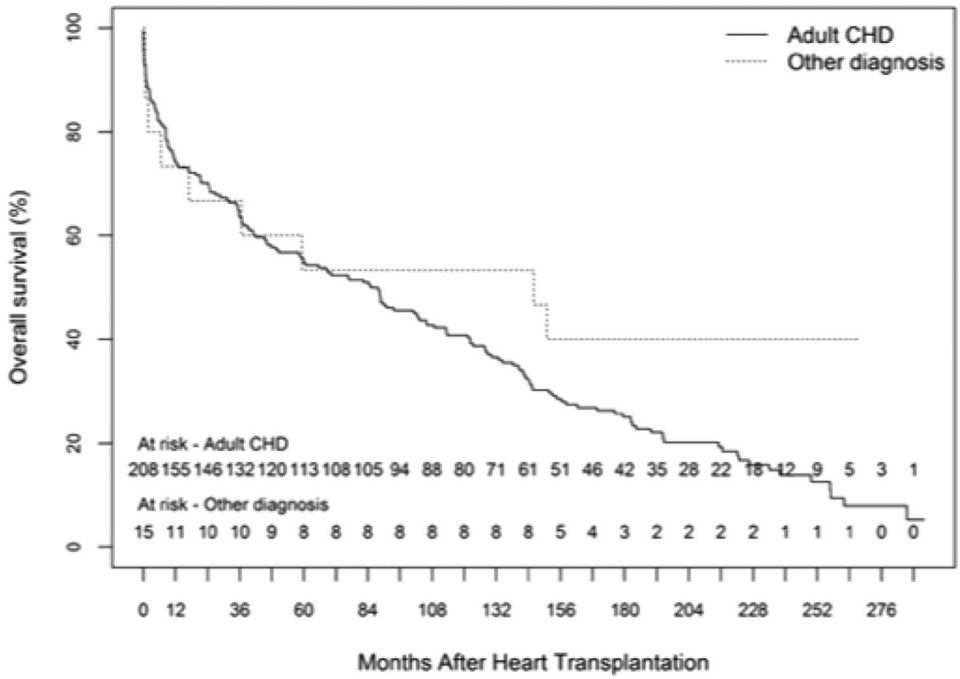

Figure 2. Kaplan–Meier curves demonstrating survival of adult with CHD undergoing transplantation versus adult with other diagnoses between January 1993 and December 2010.

The goals of therapy of HFrEF are to reduce morbidity (i.e. reduce symptoms, improve health-related quality of life and functional status, and decrease the rate of hospitalization), and to reduce mortality. Management of HF includes a number of nonpharmacologic (monitoring, preventative care, care coordination, education and support for HF self-management, cardiac rehabilitation), pharmacologic (i.e. four pillars for HFrEF), and invasive strategies (cardiac resynchronisation therapy, implantable cardioverter defibrillator, mechanical circulatory support, and cardiac transplantation) [10]. A growing area in the management of HF is the use of telemonitoring, particularly for patients who may not have easy access to ambulatory care heart failure programmes. In their study, Cao et al. showed that the use of a telehealth program is beneficial for improving HF symptoms, adherence, self-care skills and mental health status of discharged HF patients [11]. Despite recent progress in its management, HF remains an important health problem, both in its acute and chronic refractory form. Inotropic agents are generally recommended to use in patients with acute decompensated HF with rEF. Akhtar et al. compiled the various evidence about basic pharmacology and potential clinical aspects of levosimendan in cardiac surgery and other HF associated alterations [12]. Bruls et al. reported the outcomes of heart transplantation (HTx) in a cohort of adults with congenital heart disease (ACHD) patients at a tertiary centre. They showed that despite the surgical challenge, HTx in ACHD had a good long-term result (Figure 2) [13].

Disclosure statement

No potential conflict of interest was reported by the author(s).

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