

December 2020 at a glance: focus on COVID-19, comorbidities and palliative care

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COVID-19

The coronavirus disease 2019 (COVID-19) pandemic had a catastrophic impact on health systems worldwide. In Germany, hospitalizations due to acute heart failure (HF) had a reduction in the first pandemic period (13 March–21 May 2020) compared to control intervals in 2020 (1 January–12 March) and 2019 (13 March–21 May), with an increase in case severity and in-hospital mortality.¹ Similarly, a study conducted in London showed a reduction in HF hospitalizations during the pandemic period, compared to the previous year. Although patients had similar characteristics to those of the patients hospitalized in 2019, in-hospital mortality was significantly higher in 2020 than in 2019 ($P = 0.015$) and hospitalization in 2020 was independently associated with increased in-hospital mortality.²

In a study conducted in Madrid, Spain, including 3080 COVID-19 patients, those with a previous history of chronic HF were more likely to develop acute HF (11.2% vs. 2.1%; $P < 0.001$) and had higher mortality rates (48.7% vs. 19.0%; $P < 0.001$).³ In an Italian study including 13 centres and 692 patients, history of HF was an independent predictor of increased in-hospital mortality [adjusted hazard ratio (HR) 2.25, 95% confidence interval (CI) 1.26–4.02; $P = 0.006$], along with age, sex, oxygen saturation and oxygen partial pressure/fraction of inspired oxygen ($\text{PaO}_2/\text{FiO}_2$) ratio.⁴

Concerns were raised that angiotensin-converting enzyme inhibitors (ACEi) or angiotensin II receptor blockers (ARBs) may enhance the susceptibility to COVID-19 through an increased expression of ACE2.⁵ Lebek *et al.*⁶ measured ACE2 mRNA expression using real-time quantitative polymerase chain reaction in atrial biopsies of 81 patients undergoing coronary artery bypass grafting. ACE2 mRNA expression was higher in patients treated with ACEi/ARBs compared to those not treated. Furthermore, ACEi/ARB treatment was associated with an independent increase in ACE2 expression in ventricle biopsies of patients with end-stage HF, while left ventricular (LV) assist device implantation led to a decline in mRNA expression. Although these data may show that ACE2 expression is increased by ACEi/ARB treatment, they do not imply that this may increase susceptibility to COVID-19 as ACE2 may actually have a protective role after infection has developed.⁵

Cardiac remodelling

A reduction of cardiac remodelling may be a therapeutic goal in HF with preserved ejection fraction (HFpEF).⁷ Yamanaka *et al.*⁸ investigated the prognostic impact of LV structural changes in patients with HFpEF from the Chronic Heart Failure Analysis and Registry in the Tohoku District-2 (CHART-2) study. Patients who presented LV hypertrophy and enlargement at baseline and those with LV hypertrophy who developed LV enlargement had a worse subsequent prognosis (HR 4.65, 95% CI 3.09–6.99, $P < 0.001$; HR 4.01, 95% CI 2.85–5.65, $P < 0.001$, respectively), compared with those without LV hypertrophy and enlargement.

Comorbidities

Cancer, cachexia, muscle wasting and frailty

Cancer and HF have a close and complex relationship.^{9,10} Common mechanistic pathways in cancer and HF, including inflammation, cellular metabolic changes, genetic predisposition, clonal haematopoiesis, angiogenesis, are summarized in this issue of the journal.¹¹

Cooperation between cardiologists and oncologists is key to manage properly these patients.¹² Zamorano *et al.*¹³ provided an overview of the main cardiovascular adverse events of cancer therapy and proposed strategies for risk assessment, prevention, early diagnosis, medical management and long-term follow-up of cardiotoxicity.

Frailty is frequent among HF patients and is associated with poor outcome.^{14,15} Available knowledge of cachexia, muscle wasting and physical frailty in patients with cardiovascular illness is reviewed by Bielecka-Dabrowa *et al.*¹⁶

Palliative care

Management of end-stage HF needs to include palliative care.^{17,18} A position paper provides day-to-day practical clinical guidance on palliation strategies.¹⁹ Sahlolbey *et al.*²⁰ provided a meta-analysis from 10 randomized trials showing that palliative care, compared with usual care, was associated with a reduction in HF hospitalization, and a modest, though significant, improvement of quality of life and symptoms in patients with advanced HF.

Devices

Cardiac resynchronization therapy (CRT) in HF with reduced ejection fraction (HFrEF) is less used than indicated by guidelines and several studies tried to identify patients with major benefits from CRT.^{21–23} A position statement in this issue is aimed at overcoming CRT under-utilization, improving patient selection and implementing dedicated post-implant CRT care pathways.²⁴

Kristensen *et al.*²⁵ studied the prognostic role of intra-ventricular conduction delay in HFrEF patients without a cardiac device enrolled in two recent major clinical trials. They found that a wide QRS was associated with an increased risk of the primary composite outcome of cardiovascular death or HF hospitalization, irrespective of morphology. New-onset left bundle branch block occurred with an incidence of about 2.5% per year, leading to a greater risk of adverse outcomes.

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