Preface

Emerging Comorbidities in Heart Failure

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Editors

Heart failure (HF), a complex clinical syndrome characterized by cardinal symptoms and signs, represents an intriguing clinical challenge for cardiologists and physicians, considering its increase in prevalence, incidence, hospitalizations, and death[1]; furthermore, the recent COVID-19 outbreak created novel needs in the everyday clinical practice, with the necessity of ideate new strategies of management.[2] In this context, HF patients display several chronic coexisting diseases,[3] strongly impacting on morbidity, mortality, and health-related quality of life.[4,5] In addition, the presence of comorbidities determines a more complex clinical management leading to increasing health care costs (**Fig. 1**).[6]

The purpose of the present issue of *Cardiology Clinics* is to review several comorbidities (ie, noncardiac and cardiac), with the aim of helping clinicians in the everyday management of HF patients.

NONCARDIAC COMORBIDITIES

Growing evidence suggests that HF patients displaying a hormone disarrangement are characterized by impaired cardiovascular performance and poor prognosis.[7–10] Recently, this hypothesis has been confirmed by data from the T.O.S.CA. registry,[11,12] with patients affected by multiple hormone and metabolic deficiency syndrome (defined as 2 or more hormone deficiencies) experienced the worst outcome. In this regard, Danzi and colleagues and Napoli and colleagues reviewed in the present issue the role of thyroid hormones, growth hormone, testosterone, and insulin in HF, also in consideration of their potential therapeutic role.[13–16] A novel HF pathophysiologic model, the so-called gut hypothesis (ie, the interplay between HF and the gastrointestinal system), has been reviewed by Salzano and colleagues; specifically, the choline/carnitine derived metabolite trimethylamine *N*-oxide, strictly linked to the Western diet,[17,18] appears to be a novel risk predictor as well as a promising therapeutic target in HF.[19–21] A recently emerged paradigm shift in HF pathophysiology is the interaction between right HF and pulmonary circulation.[22,23] Indeed, disorders such as chronic obstructive pulmonary disease, sleep breathing disorders, and pulmonary hypertension (ie, when right heart-

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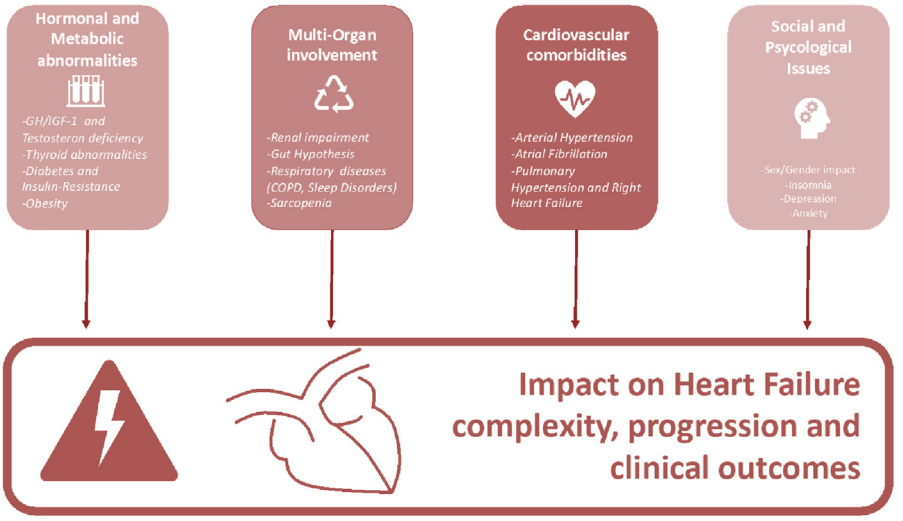

Fig. 1. Impact of emerging comorbidities on HF. (*Modified from* Cittadini A, Bossone E, Ventura HO. Emerging comorbidities in heart failure. Heart Fail Clin 2020;16(1):xiii-xv.)

pulmonary circulation unit is impaired) play a central role in HF progression,[3,6,24] as reviewed by Pellicori and colleagues, Coniglio and colleagues, and Marra and colleagues. Intriguingly, right ventricular dysfunction is also linked to cardiac cachexia and sarcopenia, critical turning points in the context of HF, as Valentova and colleagues exposed in their review. In addition, the role of the "obesity paradox" in chronic heart failure has been reviewed by Carbone and colleagues. Specifically, a paradoxical decrease in mortality in those with higher body mass index has been observed in HF patients, in the context of the so-called reverse epidemiology.[25] Finally, the amount of renal impairment is a keystone in clinical decision making in HF patients.[26,27] In this regard, Costanzo described the cardiorenal syndrome, focusing on the importance of accurate quantitative measurement of fluid volume in patients with HF.

CARDIOVASCULAR COMORBIDITIES

In the present issue, Di Palo and colleagues discuss arterial hypertension (ie, "blood pressure paradox"). Indeed, whereas in most of cardiovascular disease high blood pressure has an adverse prognostic role[28,29]; in HF, the optimal target of blood pressure remains a matter of debate. Furthermore, clinicians are challenged by the management of antithrombotic treatment in patients with coexisting HF and atrial fibrillation[30]; Obeidat and colleagues, reviewing the role of direct oral anticoagulant, highlight their safety and effectiveness also in HF.

Sex and gender integration still remains an unmet need in research and clinic,[31–33] and HF is no exception, as Romiti and colleagues describe in this issue.

Finally, as highlighted by Di Paolo and colleagues, clinicians should take care also of psychological comorbidities of HF, including depression, anxiety, and insomnia, considering their important burden on patients' quality of life.

In conclusion, we are confident that the perspectives reported in this issue of *Cardiology Clinics* will help clinicians and physician to best understand and manage these comorbidities in HF patients.

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