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LETTER TO THE EDITOR

Time to assess the effects of sodium–glucose co-transporter-2 inhibitors on the 'forgotten' right ventricle?

We read with great interest the review article authored by Lan *et al*.,[1] summarizing all the relevant, both experimental and clinical, data concerning the effects of sodium–glucose co-transporter-2 (SGLT-2) inhibitors on left ventricular function and the underlying pathophysiological mechanisms.

It is known that patients with type 2 diabetes mellitus (T2DM), even those being newly diagnosed or without established coronary artery disease or heart failure, feature impaired right ventricular systolic and diastolic function and decreased right ventricular end-systolic and end-diastolic volumes.[2–4] This close relationship has also been confirmed in patients with concomitant T2DM and heart failure with preserved ejection fraction (HFpEF), in whom T2DM is associated with significant increase in the odds for right ventricular systolic and diastolic dysfunction, independently of right ventricular afterload.[5] Mechanisms implicated into right ventricular involvement in T2DM are metabolic (hyperglycaemia, hyperlipidaemia, and hyperinsulinaemia), inflammatory, mechanistic (left ventricular involvement), and epigenetic, constituting right ventricular dysfunction a potential marker of diabetic cardiomyopathy.[6]

Based on the established knowledge that right ventricular dysfunction is strongly associated with the corresponding risks for heart failure hospitalization and all-cause mortality in patients with HFpEF[7] and for cardiovascular and all-cause mortality in patients with heart failure with reduced ejection fraction (HFrEF),[8] it is deduced that the meticulous assessment of right ventricular function in patients with T2DM—especially in those with known atherosclerotic cardiovascular disease—might be of critical importance. At the same time, right ventricular function also appears as a promising treatment target.[9]

It would be therefore interesting and clinically meaningful to know whether SGLT-2 inhibitors exert beneficial effects on right ventricular function, additive to their effects on the left ventricle, along with potential interconnection with their known, favourable cardiovascular effects. Unfortunately, no such data exist in the available literature, representing a significant gap of knowledge. We hope that future studies will investigate the impact of SGLT-2 inhibition on the right ventricle and the subsequent cardiovascular implications.

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