

## Pulmonary Hypertension in Patients With Heart Failure With Mid-Range Ejection Fraction

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Pulmonary hypertension (PH) is common in patients with heart failure (HF). The role of PH in patients with HF with reduced (HFrEF) and preserved (HFpEF) left ventricular ejection fraction (LVEF) has been extensively characterized during the last years. In contrast, the pathophysiology of HF with mid-range LVEF (HFmrEF), and in particular the role of PH in this context, are largely unknown. There is a paucity of data in this field, and the prevalence of PH, the underlying mechanisms, and the optimal therapy are not well-defined. Although often studied together there is increasing evidence that despite similarities with both HFrEF and HFpEF, HFmrEF also differs from both entities. The present review provides a summary of the current concepts of the mechanisms and clinical impact of PH in patients with HFmrEF, a proposal for the non-invasive and invasive diagnostic approach required to define the pathophysiology of PH and its management, and a discussion of future directions based on insights from mechanistic studies and randomized trials. We also provide an outlook regarding gaps in evidence, future clinical challenges, and research opportunities.

<b>type</b>	journal paper/review (English)
<b>date of publishing</b>	09-07-2021
<b>journal title</b>	Front Cardiovasc Med (8)
<b>ISSN print</b>	2297-055X
<b>pages</b>	694240