

Review of: "Efficacy and Safety of External Extracorporeal Counterpulsation in Heart Failure with Preserved Ejection Fraction"

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Potential competing interests: No potential competing interests to declare.

The manuscript "Efficacy and Safety of External Extracorporeal Counterpulsation in Heart Failure with Preserved Ejection Fraction" touches on a very interesting and still challenging topic. The authors, in their review, explore the therapeutic potential of External Extracorporeal Counterpulsation (EECP) in HFpEF. Unfortunately, trials in HFpEF patients using traditional HF medication are inconsistent – they do not demonstrate a benefit, including reduction of mortality and hospitalization. Therefore, there is a great need to identify effective therapies targeting HFpEF.

In my opinion, it is an interesting paper from a clinical point of view. The presented results are clearly discussed in the context of collected data and previous literature (however, not updated enough).

The content of the manuscript raises some important additional questions which should be explained and supported by additional data before potential resubmission. The potential educational value and novelty of the research seem to be promising but not in the present form.

The review and corrections are necessary to maintain the high educational and research value to ensure the quality and level expected by the readers.

Despite the interesting content of the review, I have comments.

1. I encourage the authors to add to the section "Diagnosis" a short overview of the crucial hemodynamic changes in HFpEF, like elevated filling pressure - especially dynamic changes in RAP and PCWP during exercise. It is postulated that right heart catheterisation may be a useful tool in HFpEF diagnosis. The ACC/AHA 2022 guidelines suggest that implantable hemodynamic monitoring may be considered for patients with symptomatic HFpEF to reduce HF hospitalizations.

2. It seems reasonable to extend the section "Treatment." The references cited by the authors should be updated - the treatments changed significantly within the last 10 years. Numerous novel techniques, including devices and interventions, were investigated to improve clinical outcomes in both HFrEF and HFpEF, e.g., splanchnic nerve stimulation/ablation.

3. The potential role and advantage of EECP should be discussed in the context of the guideline-recommended optimal medical therapy. It is postulated that physicians should manage congestion and immediately initiate

recommended medical treatment: SGLT2 inhibitors are the optimal option for most patients with HFpEF, with an ARNI and MRA.

4. The discussion section should include a short information about patients' phenotyping and personalization of the therapy (e.g., based on hemodynamic monitoring, imaging, biomarkers, comorbidities) - the precise selection of those patients who may benefit from the specific therapy seems to be fundamental in HFpEF. Modern medicine and technology equip us sufficiently with comprehensive tools for patient phenotyping.