Reviewer's report

Title: Effects of adaptive servo-ventilation therapy using an innovative ventilator on cardiac function and remodeling in patients with chronic heart failure: study protocol for a confirmatory, multicenter, randomized, controlled study (SAVIOR-C)

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Reviewer: Emilia D'Elia

Reviewer's report:

The authors present a protocol to investigate the effect of adaptive servo ventilation (ASV) in a population of 200 chronic heart failure (CHF) patients. The innovative issue proposed by the author consists in considering ASV as a successful treatment for CHF indipendently from the presence of sleep disorders breathing (SDB).

Nowadays, ASV is used mainly for treating central sleep apnea in CHF patients affected by Cheyne Stoke respiration, a typical SDB, thus it has to be demonstrated that it could be helpful also in any setting of CHF.

Major Compulsory Revisions
Considering the above mentioned observations, some important points have to be addressed:

1. ASV improves left ventricular contractility, induces cardiac reverse remodeling and suppresses sympathetic nerve activity in SDB patients, but no consistent evidences have been reported in all the CHF population. The authors should better explain the decision of testing ASV also in patients with no apneas.

2. The authors affirm to enroll patient with moderate to severe CHF, but they consider also patients in NYHA class II with mild left ventricular dysfunction (LVEF 40%). Probably these characteristics are more typical for mild (not moderate to severe) CHF. Please explain the author’s point of view.

3. Because of the potential beneficial effect of ASV in the patient’s symptoms (both with reduced and preserved LVEF), I would consider the primary endpoint (LVEF) as secondary endpoint and further cardiac events, BNP, NYHA class as primary endpoints.

4. Abstract is not clear and should be better written and checked by a mother tongue reader.

Minor Essential Revisions

5. Typing errors have be found.

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

No financial disclosure to declare