



Letter to the editor

The CARVIVA HF trial- Is the devil in the detail?

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Volterrani and colleagues [1] published a prospective, randomised, blinded study in patients with heart failure (HF). They studied patients exercise capacity at baseline and after carvedilol monotherapy, ivabradine monotherapy or dual therapy. They used the 6-min walk test (6MWT) and VO_2 peak as their primary end-points along with modalities such as echo, NYHA classification and quality of life. They have concluded that ivabradine and dual therapy improve exercise capacity and quality of life in HF patients.

Their conclusion is based on the improved AT and VO_2 , however the table demonstrates a worsening AT in all groups. The graphs shows a large significant improvement in % change however from the raw tabular data there is only 18.5% increase not the over 25% increase on the graph.

It is impossible to assess whether the cardiopulmonary exercise test (CPET) were maximal as the authors have not published the protocol used. Furthermore, they have not published the exercise time, RER, maximal heart rate or BORG therefore one cannot assess whether the CPET was maximal. They report baseline VO_2 peak as 12.05 which is surprisingly low at only 3.4 METS [2].

The 6MWT shows a 26% improvement in the table but the graph shows a 40% improvement.

This is a well-designed study with meaningful and clinically important outcomes for the treatment of HF. However, with the lack of clarity in the reporting of the CPET and inaccuracies/contradictions in the tables and figures it is difficult to have confidence in the conclusions made in this study.

References

- [1] M. Volterrani, et al., Effect of carvedilol, ivabradine or their combination on exercise capacity in patients with heart failure (the CARVIVA HF trial), *Int. J. Cardiol.* 151 (2011) 218–224.
- [2] Jette, et al., Metabolic equivalents (METS) in exercise testing, exercise prescription, and evaluation of functional capacity, *Clin. Cardiol.* 13 (1990) 555–565.

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