Reviewer's report

Title: Metabolic load during strength training or NMES in individuals with COPD: results from the DICES trial

Version: 2
Date: 23 June 2014

Reviewer: Rainer Gloeckl

Reviewer's report:

Sillen et al. presented a study on the metabolic load during strength training or NMES in patients with COPD. This was a sub-analysis of the DICE trial which has already been published. The authors investigated metabolic load via a portable metabolic system in high-frequency NMES, low-frequency NMES and strength training.

Similar investigations have already been performed, but only in a cross-sectional fashion. This is the first study that also studied the change in metabolic load over time during an 8-week pulmonary rehabilitation program. This study was very well performed using high standards in methodology, patients assessment and conducting the interventions.

I have only minor remarks
1) Results section, line 231: there is a wording error
2) Discussion section line 256: it is stated that VO2 ranged between 30 to 99% of peak aerobic capacity. Please provide more information on the subject that yielded 99% of its peak aerobic capacity during NMES or strength training. Was this value only that high in 1 individual? Can you explain this surprisingly high value?
3) The fact that only patients without long-term oxygen therapy could be included in the study due to the measurement technique is mentioned within the study limitations. You might also include this point within the discussion section and try to speculate/discuss if the metabolic load during NMES might be different in patients with LTOT?
4) VO2 and VE values should not only be provided as figures, but also in a table (for example as an addition in table 2)
5) Table 1: please indicate to which data comparison the p-value column is referring to
6) Table 2: please indicate that the values are referring to the first measurements at baseline
7) Figure 1: although you mentioned the reasons for drop outs in the methods section, you might also include them within the flow chart.
8) Figure 2: you might think about also including median lines in the graphs
9) Figure 4: please indicate significant differences between the boxplots
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests