Reviewer's report

Title: Ventilatory abnormalities in patients with cystic fibrosis undergoing submaximal exercise test six minutes

Version: 2 Date: 4 July 2014

Reviewer: Erik Hulzebos

Reviewer's report:

This is an interesting and relevant study objective to investigated ventilatory differences between person with CF and healthy controls during exercise.

I have some questions/concerns about this study:

The aim of this study was to evaluate volumetric capnography and cardiorespiratory parameters in patients with CF and healthy controls, at rest and during a 6-MWT.

Are there data available about the validity and reproducibility (error of measurements) of volumetric capnography measurements: [1] in children and adolescent with CF, [2] at rest and during exercise?

Was also a Bodyplethysmografie measurement (TLC; RV/TLC; IC/TLC........) available? Because there is an (known) association between static hyperinflation and ventilatory "abnormalities" (dynamic hyperinflation) during exercise.

Were the healthy control matched for age, body composition, physical activity level,........

Sentence 143: The exercise stress test was perform on a treadmill................ with a reference (sentence 147) to the six minute walking test.

What was the reason to do a six minute walk on a treadmill, instead of the official six minute walking field test.

Sentence 154: Was the professional who did the measurements blinded?

Sentence 226: It is VE/VCO2 instead of EV/VCO2.

Major Revision:

The six minute walking test, according to the ATS guidelines, was not used in this study but a six minute walking on a treadmill with increased velocity. So the title covers not the content of this study.

No objective or subjective criteria were reported, in both groups, about the rate of perceived exertion of this exercise test. In other words was the exercise intensity in both groups the same?

No data reported about the breathing pattern (tidal volume; breathing frequency;
breathing depth (TV/VC); hyperinflation (IC/TLC) during exercise

Supplementaries have no additional value.

Minor revision:
Please Patients first language: Patients with CF instead of CF patients (e.g. sentence 122, 130,......).

Please use the correct abbreviations. For example sentence 86 deadspace/tidal volume ratio is not (DS/TV) but (Vd/Vt), EV/VCO2 instead of VE/VCO2,........

Sentence 86-87: Performance on the exercise? Please explain this? What are the objectieve and subjective criteria for exercise performance?

Sentence 89: What means the exercise in CF? Exercise training or exercise testing, please be specific.

Sentence 109-110. Not all the readers are familary with VCAP, please explain the (clinically) relevance of a higher value of slope3/TV?

**Level of interest:** An article whose findings are important to those with closely related research interests

**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:**
I declare that I have no competing interests