Reviewer's report

Title: Impact of physical fitness and biometric data on the quality of external chest compression - a randomized, cross-over trial

Version: 4 Date: 18 March 2011

Reviewer: Davide Cattano

Reviewer's report:

Randomized cross over study investigating the impact of physical fitness and biometric data on the quality of the external chest compressions. The authors are commendable for the amount of work and information provided. The work is written in a balanced and supported fashion. There are few typos and grammar form that needs to be corrected, otherwise is fluent.

However there few revisions that are needed 1. Abstract Line 2 In before 2005 2. Background Line 3 remove with and add in. The hypothesis is missing. Last paragraph remove and before on (last line).

3. Methods Specify oral and written consent. Remove the before formal. Please rephrase first paragraph Ergosirometry (please specify which endurance tests) first line. last line were (typed we only).

4. Part 2 External compression remove double parenthesis (after Norway).

Subjective assessment. there is no scale or open label answers provided.

Statistical analysis. this is probably the most and only confusing paragraph. Please consider revision. in particular the investigators needs to provide the power analysis or explain why this study was a pilot. They provided informations that this type of study is not new, but they are providing the first of its kind. Please consider revision of figures with SEM. SEM is acceptable only if number of observation are provided, but is not overall a measure of statistical difference between two comparison groups. Order the presentation in a. Two way Anova, post hoc, linear correlation. I would remove the sentence about normally distributed data.

Results. please consider removing all the subtitle and rephrase the first sentence of each accordingly. i.e. second paragraph Nine minutes of ECC. Last sentence not clear (about compression depth) Page 2 all partecipants minute by minute. Based on a minute by minute...

What was the amount decrease? can you provide a percentage of change if minute 1 is 100% (or 1) what would be the other? (it is easier for the reader to see the percentage relative change and decrease). Please apply to all sections that analyze the minutes into ECC and performance decrease (also the tables). Subjective need to provide classes or scores or assessments.

Discussion

3rd paragraph Importnat...(don't understand) What is the clinical relevance of
addressing BMI for ECC? page 2 focusing (remove one "s"). remove surprisingly add only few. Last paragraph same page low quality ECC (remove of). Page 3. Influencing factors within the sentence addressing fatigue... which are these influencing factors? are the one in the paragraph following? Then they should be mentioned only later.

Limitations please discuss further teh sample size and the composition of the investigational cohort.

Tables. please provide number of patients and relative numbers for the sub groups (how many were BMI male low and high etc?) Figures consider SD instead of SEM