Reviewer's report

Title: Early mobilization with a cycle ergometer for critical patients on invasive mechanical ventilation in the Intensive Care Unit (MoVe-ICU study): study protocol for a randomized controlled trial

Version: Date: 20 May 2015

Reviewer: Marc Nickels

Reviewer's report:

Major Compulsory Revisions

There appears to be some inconsistency in the primary objective of the study. In the abstract it is suggested that morphology of the knee extensors is the primary aim, whereas in the methods/design section the primary aim appears to be the effect of mobilization of critically ill patients on mechanical ventilation. Please ensure consistency.

This sample size is 32 participants, hence this is really a pilot RCT and should be stated as such. Was the aim of the study to demonstrate effectiveness of cycle ergometry on preserving knee extensor morphology or was it as a pilot study to collect sufficient data to determine effect size and feasibility for a larger RCT.

Minor Essential revisions

In parts of this manuscript MV has been used and IMV used – needs to be consistent.

The statement in the Discussion section: ‘Treatment with the cycle ergometer has been shown to improve quadriceps strength, functional status and 6-minute walking results at hospital discharge.’ Needs to be referenced separately to the following sentence about the use of cycle ergometry and COPD patients.

It is not clear if the intervention is planned to be conducted 7 days a week or just during usual working days.

Discretionary Revisions

I recommend replacing the term mobility with rehabilitation as mobility can be perceived as walking rather than rehabilitation exercises including walking. The term ‘early’ is also not defined.

What is early? Is it within anytime within a patient’s ICU stay, or 24, 48, 72 hours after admission, or as soon as physiologically stable etc.

I recommend throughout the manuscript replacing the term early mobilization with the term rehabilitation / or rehabilitative exercises and define what type/s of rehabilitative exercises you are referring too.

Recommend defining as Mechanical Ventilation rather than ‘Invasive’ Mechanical
ventilation as essentially mechanical ventilation is assumed to be invasive NTT, ETT or tracheostomy – otherwise it is Non-invasive ventilation (in other words without an airway).

The acronym ‘MoVe-ICU’ has not been defined / explained.

Functional tasks such as ambulation have not been discussed in this manuscript. Consequently key words other than ‘early ambulation’ would be more suitable.

Decubitus dorsal is not a term commonly used internationally. I recommend referring to the patient position as supine with 30 degrees head elevation.

I recommend including recent highly relevant references on the skeletal muscle wasting of critically ill patients 1-3 and recent articles regarding ultrasound of skeletal muscle in critically ill patients 4,5.

References:

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