Reviewer’s report

Title: Effectiveness of manual chest physiotherapy techniques in the management of exacerbations of chronic obstructive pulmonary disease (MATREX): a randomised controlled equivalence trial.

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Reviewer: Giancarlo Garuti

Reviewer’s report:

The authors present an randomized controlled trial on the manual chest physiotherapy. The intentions of authors are interesting because, about this specific argument, there are few randomized controlled trials with large series.

Major Compulsory Revisions

The question posed by the authors for this study is important but is lost during the course of the article. In fact the title of the article is about the effectiveness of these techniques, but the most out of this study is how to be the quality of life. So, I recommend two ways: 1) change the title in one which the emphasis is only on the quality of life and the use of the MCP or 2) enter more outcomes (whether in their database they are been collected) that assess physiological parameters in the short term efficacy of these techniques.

The methods used in this study are appropriate but poorly described by the authors: in the methods section the authors should better describe the techniques of chest physiotherapy adopted.

The presented data are consistent with others in the past, but since they have a so vast case history (and, certainly more data are collected), pathophysiological data should be evaluated (eg. pulmonary function tests, blood gases samples, etc). with quality of life data. They would be more appropriate to be more specific with regard to hospital admissions, the emergency room admissions, and GP interventions after the first treatment.

Minor Essential Revisions

Title: If the authors cannot submit additional outcome measures, it would be appropriate to change the title by inserting the change of quality of life in patients subjected to MCP.

Abstract: it is in line with what is described in the article

Introduction:

-authors should better explain the physiological point of view and rational use of MCP, considering to place some bibliographic references.

-Specify the abbreviation NIHR HTA

Methods:

Patients and Study design:
- better explain the patient inclusion criteria and in particular the definition of acute COPD exacerbation eligible for drainage of secretions.

If it is possible, introduce, lung function tests, blood samples analysis and ml of sputum (before and after treatment)

Procedures:
- explain in detail the MCP procedures and in particular unfold better criteria by which the therapist decides
- to start and finish the procedure
- number of sessions,
- how many times a day,
- how many days

Describe what parameters are monitored during the MCP procedure.

Outcomes Measures:
these data do not measure the effectiveness of the action in an event such as acute exacerbation in the short term.

I eventually would split outcomes in:
- short term outcomes (pathophysiological outcomes, days of drug treatment, hospital length of stay and disease days )
- mild-term outcomes (more exacerbations, use of antibiotics after first treatment, hospital admissions)
- long-term (QoL)

Statistical Analysis: good description of the statistical analysis

Results

1) Figure 1 is missing
2) Table 1: is difficult to read: remove and describe in paragraph “MCP treatment “ how many treatments have been made to patients, the average per patient, the mean saturation before and after treatment with the statistical difference and

In the same paragraph put only the percentages of adverse events instead the pure number.

2) Table 2: add a column for statistical significance.
- remove female , current smoker, never smoker and smoker lines and mention these in the methods section as percentage. Put a description of abbreviations JPH, NNUH, QEH, UHA and remove these lines always putting the description in the discussion.

Insert in the table only the MRC score mean and SD and the statistical difference. Discussion:
- remove MCP versus ACBT section it and mention it at the beginning of the discussion

References reference n.3 and n.8 are the same
**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