Author's response to reviews

Title: Modifiable factors contribute to limitation in physical activity following thoracotomy and lung resection: a prospective observational study

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Version: 2
Date: 1 July 2014

Author's response to reviews: see over
Reviewer's report and response of authors

Title: Modifiable factors contribute to limitation in physical activity following thoracotomy and lung resection: a prospective observational study

Version: 1 Date: 5 January 2014

Reviewer: Douglas West

Reviewer's report:

This is an observational study of factors associated with decreased mobility after thoracotomy and lung resection, with routine epidural use. Mobility was determined by asking patients to wear motion sensors in the inpatient perioperative period. Data was collected as part of a wider randomised trial.

For analysis patients have been dichotomised into high and low activity groups.

The study design and analysis is appropriate, and the reporting of results is very clear. Logistic regression modelling of predictors of complications has been appropriately used to identify confounding in this part of the study.

Since reduced activity post-operatively is known to be related to poor outcomes (and was in this study) identification of predictive factors is important. The current interest in enhanced recovery protocols makes this a topical subject.

This study could therefore be accepted for publication without major revision.

There are minor points which the authors could address;

(1) Page 10 "Discussion" paragraph 2 sentence 1 contains a reference manager error message which should be removed. Corrected to ref 2

(2) It would be interesting to know more about how the cut-off point to classify patients as "low activity". As basket of outcomes has been used, with below median results used to define "low activity". I would like to know if these cut-offs were pre-defined, or had bee validated elsewhere.

   The use of median to define two groups of activity levels is not based on any evidence as there is no published data in thoracic surgery about values and outcomes . Indeed even in COPD where there is the most evidence using this technique there is no consensus as to what is a meaningful clinically significant difference in steps walked

(3) The title suggests an important role for modifiable factors. As I understand the output of the multivariable model (page 9), age, predicted FEV1 and pre-op activity were the only independent predictors. These are largely not modifiable, or partially modifiable. I wonder if the title is slightly overstated?

   Title to be changed to ‘potentially’ modifiable
As a limitation, I agree with the authors that some aspects of this study's findings (recruited between 2008-10) are likely to become outdated, as portable chest drain suction devices, a move away from epidural anaesthesia and minimal access major lung resections become more common. These changes in practice are likely to increase early mobility. This is covered well in the discussion.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.
Reviewer's report

Title: Modifiable factors contribute to limitation in physical activity following thoracotomy and lung resection: a prospective observational study

Version: 1 Date: 18 February 2014

Reviewer: Kandadai Seshadri Rammohan

Reviewer's report:

1. The question asked is relevant and well defined
2. Yes - the methods are appropriate, well described and reproducible
3. Data – large dropout from original group – reasons described in text. Would be interesting to know who were non compliant and if there was any consistent reason for removal. Data drop should not affect study due to the nature of the design.
4. Good discussions, conclusions supported by the regression model
5. Is the writing acceptable – Definitely so

Statistical review

Is it essential that this manuscript is seen by an expert statistician? If so, please give your reasons in your report.

Yes, but I do not feel adequately qualified to assess the statistics – the conclusions hinge on the Preop FEV1 and level of Preop activity showing up as significant predictors in the model

The data has been scrutinised by a statistician at the University of Coventry as this work forms part of the first authors PhD.

Discretionary Revisions

1. Do the title and abstract accurately convey what has been found – the modifiable factors specifically refer to the preoperative characteristics x 2– that could be made clearer in the title and in the body – as there are a number of other modifiable factors that would affect mobility – as detailed in some of the discussion – pain, VATS usage, Epidural use etc.

   Title to be changed to ‘potentially’ modifiable. Its difficult to add any further detail beacuse of word constraints
2. There appears to be a trend to increasing use of epidural analgesia in the poor mobility group – cause and effect or a marker of a “sicker” patient group preop?

We agree that there is a trend of poor mobility in the epidural group but it is not possible to ascertain whether this cause or effect or a marker of a sicker patient, we are currently studying this in the form of a randomising controlled trial comparing epidural with paravertebral analgesia.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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