Reviewer's report

Title: The OPERA trial - Comparison of early nasal high flow oxygen therapy with standard care for prevention of postoperative hypoxemia after abdominal surgery: rationale and study protocol for a multicenter randomized controlled trial.

Version: 1 Date: 24 September 2013

Reviewer: Graeme MacLennan

Reviewer's report:

1. Major Compulsory Revisions
None.

2. Minor Essential Revisions
Somewhere in the Methods please state the number of centres if this is known, or the number of anticipated centres if not yet finalised.

Statistics methods, paragraph 2, it is good practice to pre-specify covaraites that will be used in adjusted analyses for RCTs, not to select these based on screening based on statistical tests. See the CONSORT statement for guidance on this. This sentence needs to be amended, or, if screening variables is to be the primary method of variable selection for the adjusted analysis then it should be relegated to an exploratory analysis.

3. Discretionary Revisions
Section on Study population:
- Might it worthwhile explaining why BMI > 35, emergency surgery, patients with sleep apnea are to be excluded?

Statistics
- provide a reference from Stata's mi procedure (the Stata manual will do)
- final sentence in final paragraph. There is move away from summarising evidence in terms of statistical significance towards presenting effect sizes and confidence intervals, I suggest you edit that sentence to read something like "All effect sizes will be presented with 95% confidence intervals", or at least make an additional statement about CIs.
- Throughout the investigators acknowledge that routine care may vary across centres and that only management of intra operative mechanical ventilation is to be protocolised. Is centre to be considered, for example as a random effect in the proposed Poisson regression?

4. Minor issues not for publication
Section on Study population, second paragraph, in the brackets should read "for
an unplanned...", "as" is missing.

Section on Randomisation, second sentence is missing "The" as the first word.

Statistics
- The end of the second sentence in the first paragraph, is this a reference to software, or a reference that has not been formatted properly?
- Stata should not be STATA
- the correct citation for Stata is given at www.stata.com/support/faqs/resources/citing-software-documentation-faqs/