Reviewer’s report

Title: Risk factors of postoperative pulmonary complications in patients with asthma and COPD

Version: 0 Date: 18 Sep 2017

Reviewer: Thomas Bahmer

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The manuscript ’Risk Factors in postoperative pulmonary complications in patients with asthma and COPD’ by Numata and colleagues covers a clinically highly relevant topic. The research question is straightforwardly and the study samples appropriately large.

Here are my concerns:

1. The preoperative procedure is still not clear to me. In your preoperative pulmonary rehabilitation program you asked all patients for known/established pulmonary diseases, and you also performed pulmonary functions tests in all patients. Did you also detect and newly diagnose previously unknown pulmonary diseases? Which pulmonary function tests did you perform? Please insert a consort diagram that clearly states the procedure. How many files did you screen? How many missing values did you have in your retrospective sample?

2. You state that patients with asthma received inhaled or systemic corticosteroids (p.6, lines 19-22). On page 8, lines 8ff you further outline your intervention strategy. You state that patients with uncontrolled symptoms received oral corticosteroid treatment and other ’mostly’ got their inhaled CS escalated. Does this mean that all (!) asthmatics with an ACT <20 received OCS prior to surgery? On what basis was intervention in controlled asthmatics based? Please clarify how a structured approach across all patients of the study cohort was established.

3. You state that 346 adults with abnormal pulmonary function and a diagnosis of asthma or COPD were included (p.7, l. 9-10). Does this mean that patients with asthma with normal lung function were excluded from this study? What about patients with abnormal lung function to causes other than asthma or COPD, were they also excluded? Please clarify the inclusion and exclusion criteria of your sample and the study procedure.

4. You assessed the ACT for patients with asthma. Did you also assess a symptom score for patients with COPD, e.g. CAT? In your definition of PPC you included ’bronchospasm’ and ’respiratory failure with oxygen therapy’ (p.8, l. 3-4). Please clarify how these outcomes were measured.

5. You state that smokers were asked to quit smoking. Did you also offer any structured intervention programs? Did you follow-up on their smoking habits and were patients excluded from surgery if they did not quit smoking?
(6) In your hospital 14,194 surgeries were carried out between 04/14 and 03/15. Subtracting cataract surgery and lung resection leaves app. 10,200 surgeries. How many pediatric surgery do you have? 90 patients with COPD seems surprisingly low. Please include a consort diagram.

(7) If you treat patients with severe/ uncontrolled asthma with oral CS as part of your intervention it is not very surprising that this is also a result of your study, is it?

(8) Your main finding is that the perioperative systemic corticosteroid treatment for asthma significantly seemed to increase the risk of PPC in univariate analyses. Please explain this conclusion derived from a retrospective cohort study without control group.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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