Author's response to reviews

Title: Procalcitonin Guided Antibiotic Therapy of Acute Exacerbations of Asthma: A Randomized Controlled Trial

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Author's response to reviews: see over
Dear editor,

Thank you very much for your comments and suggestions. We have revised the manuscript entitled “Procalcitonin Guided Antibiotic Therapy of Acute Exacerbations of Asthma: A Randomized Controlled Trial” (MS: 1761065640801709) according to the comments and suggestions of the reviewers again, and responded point by point. We would like to re-submit this revised manuscript, and hope it shall be accepted for publication.

Yours Sincerely,

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On behalf of all authors

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Replies to reviewers:

Reviewer 1

Q1: The answer regarding fungal asthma was something which I did not really understand, however, that is not enough to prevent publication

Answer: We are sorry for this misunderstanding. In fact, several research have shown that fungal sensitization is closely associated with the severity of asthma (Agarwal R, Gupta D: Severe asthma and fungi: current evidence. Med Mycol 2011, 49 Suppl 1:S150-S157; Zou H, Su L, Fang QH, Ma YM: Correlation between fungal sIgE and bronchial asthma severity. Exp Ther Med. 2013 Aug;6(2):537-541.). We mentioned fungal asthma in this paper to make the point that most patients with severe to critical asthma do suffer from pathogens infection. However, the purpose of our study was to evaluate the serum PCT concentration in acute asthma patients suffer from bacterial infections. To avoid this misunderstanding, we have deleted the part of fungal asthma in our revised manuscript.

Reviewer 2

Q1: A paragraph on power is added to the discussion. This should be added to the methods section. It is stated that "detect the difference in usage of antibiotics". This is not interesting, when the expected effect of the strategy is not stated. Expecting (unrealistically) a 90% effect of an intervention will result in a power estimated very high with very few patients. For power calculations to make sense, the expected effect has to be reported - this is (together with the alfa value and the control group incidence of the endpoint) the premises for a valuable power calculation.

Answer: We have added the power calculation in detail and added the related paragraph to the methods section in our revised manuscript. We also have emphasized the expected effects of the strategy: PCT-guided antibiotics therapy can substantially reduce unnecessary antibiotic use without compromising the therapeutic outcomes.
Q2: How is the primary endpoint for this calculation defined? In the methods section, the primary endpoint is stated to be "antibiotic usage". Please define this precisely.

Answer: Our primary endpoint was the use of antibiotics, which was measured by the antibiotic prescription rate and the relative risk of antibiotic exposure in patients with acute exacerbations of asthma. We have revised this in our manuscript.