Reviewer's report

Title: Effects of short-term treatment with atorvastatin in smokers with asthma - a randomized controlled trial

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Reviewer: Nicholas Kenyon

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Braganza and colleagues have performed a placebo controlled clinical trial to test the hypothesis that 4 weeks of atorvastatin would improve lung function and asthma control in mild to moderate asthmatics who smoke. They found no change in lung function or inflammatory markers at 4 weeks, but quality of life questionnaire scores improved in the statin group. How or why this happened in this group can not be determined from the data collected. Overall, this is an important clinical study that is presented very succinctly and clearly. It is of importance to the many clinical and basic researchers working in this field.

Major comments:
1. Some rationale as to why this statin and dose was chosen for the trial. Does the type of statin make a difference?
2. Some of the references refer to animal models in which statins were shown to decrease the development of airway inflammation. This study is designed to address treatment of established airway inflammation at 4 weeks. Is this a long enough time period? The authors could further compare their study design to recent manuscripts suggesting effects on remodeling, including Wright et al. Am J Respir Crit Care Med Vol 183. pp 50–58, 2011. Zeki et al. Translational Research 2010;156:335–349, Ou et al. (2009) 14, 734–745. Is a longer study worth it in the authors’ opinion?
3. The use of LABAs in the atorvastatin group was less than the placebo group. Was this statistically significant? Were any of the variables significantly different at baseline? While questionnaire scores are not significantly different at baseline, it could be argued that this LABA difference may have an effect on asthma control?

Minor comment:
1. IL17 is discussed as a potential mechanism in the discussion. Was this measured in sputum or serum?
2. On page 8: patient substitution of PEF values for missing PEF data raises possibility of increased variability in PEF measures/analysis. Perhaps authors can comment on this in the discussion as a limitation.
3. The authors need to briefly explain the absolute score and significance cut offs for the quality of life scores surveys.
Level of interest: An article of outstanding merit and interest 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.