Reviewer's report

Title: Phenotypes of severe asthma among children and adolescents in Brazil: a prospective study

Version: 2 Date: 28 December 2014

Reviewer: Prasad Nagakumar

Reviewer's report:

The authors of this manuscript have attempted to elucidate the phenotype of severe asthma in a resource limited setting. The study was conducted in a specialist centre with access to investigations including lung function/FeNO measurement/bronchoscopy and sputum induction. The authors report a very thorough and elaborate evaluation and characterisation of patients referred to their service which should be commended.

I believe that the significant improvement in asthma control pre and post protocol (Table 2) in a resource limited setting should be the key message of this work.

Major revisions

1. The authors should provide the prevalence data of childhood asthma in Brazil (if available) and relate that to the referral pattern. What are the barriers in early referral to the specialist centre. Few sentences about the healthcare delivery system locally, primary care setup would be helpful

2. The definition of severe uncontrolled asthma includes 'below normal rate of lung growth' - how was this measured? (102-105)

3. Nearly a fifth of patients in the treatment resistant asthma group (Table 3) had Neutrophil inflammation, which is higher than that reported in paediatric asthma literature. Is there more data in these patients? ie did they have chest infection etc when the sputum induction was performed.

4. Dose of inhaled steroids (Table 3) - the dose of daily inhaled steroids in 'therapy resistant' group is 800 microgram/day - which is significantly less than those in the group evaluated by Bossley at al and the recent ERS -ATS definition of severe therapy resistant asthma - is it possible that these presumed 'therapy resistant ' patients would have better control of asthma and improvement in lung function and FeNO if they were treated with higher doses of steroids?
Minor revisions

1. It is helpful to provide the details of the 10 patients without asthma. This will be of interest to other physicians.

2. Please provide how frequently (i.e., monthly/3 monthly etc.) the patients classified as severe asthma were re-evaluated. Was the inhaler technique re-evaluated during every clinic visit?

3. Line 334- 'median time required to reach 96% adherence was 6 months'- do the authors mean >80% adherence?

4. 125(Procedures)-' assessments' may be more appropriate.

5. 148- >12% was considered significant.

6. Table 3- 'oral ICS in the last 12 months- is the data shown as number of courses of oral steroids?'

7. Table 3- time to achieve >80% adherence- is the data in months?

8. 357- what interventions were applied

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

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 interest.