

Reviewer's report

Title: Methacholine Bronchial Provocation Measured by Spirometry versus Wheeze Detection in Preschool Children

Version: 2 Date: 16 March 2005

Reviewer: Nicola Wilson

Reviewer's report:

This is a clearly written paper of a study considering bronchial responsiveness testing using spirometry, in an age-group usually considered too young to adequately perform the test. The authors report a commendable success rate (67%), and they provide a detailed and fair account of the methods used and very reasonable discussion of their findings. It is a pity, however, that they did not report FEV_{0.75} or FEV_{0.5}, as this is probably more relevant and might have given improved feasibility. Although other more indirect methods have been used to describe bronchial responsiveness in pre-school children, the use of spirometry is preferable as it makes comparison with older children more valid.

Major compulsory revision

1. It is not clear whether or not PC values were log-transformed before statistical analysis. They should be if means are used and this should be stated, in which case "means" should become "geometric means". Alternatively, medians could be quoted

Minor essential revisions

1. The "intra-subject reproducibility, as calculated, is usually termed the coefficient of variation. It would be helpful if it were called this on page 8. Also, as this is a methodological paper, it would be useful to have ranges of the variation found not just mean values.
2. Similarly, (last para page 9) the range in falls of SaO₂ etc would be informative
3. Readers are often confused by correlation. In this study PC wheeze and PC20 show an extremely tight correlation but they are not the same. Either a Bland and Altman plot should be used or comment explaining the possibility of being misled by high correlations.
4. "unfeasible" (line 2 Abstract) is a clumsy way of saying not possible.
5. Abstract para 3. The insertion of the % of 36/55 would be helpful
6. On page 8 it is stated that all children previously had shown a bronchodilator response. How if they were spirometry-naïve at the time of study inclusion?

Discretionary revision

1. Since the authors confirm the lack of sensitivity of PC wheeze, with some almost alarming associated falls in FEV₁ and SaO₂, perhaps a stronger warning about its use would be in order.

Verdict: Accept with above revisions

Level of English: Very good

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.