

## Reviewer's report

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

**Version:** 2 **Date:** 14 February 2005

**Reviewer:** Lou Prof Landau

### Reviewer's report:

This study combines a number of studies that reproduce others that have been previously reported. It has already been shown that PCw is not as sensitive as PC20 and that spirometry can be performed in a reasonable number of children under 5 years. The main contribution of this report is that they have shown that some children this age will persist with repeated maneuvers required for the challenge test. However, there are still a number of questions about application as this was done in a group of children referred for asthma management. Is it as useful in a random sample of young children? How discriminating is it as a diagnostic test? Does it add any more to asking if they wheeze?

Apart from some minor suggestions the Methods are fine, the Data valid and the writing good.

### Suggestions:

Abstract: In lines 2 and 7 the acronym MCH is used. It should be MCT for the test as in the body of the paper.

Methods, page 5: It states that consecutive referred children were recruited. Did every suitable child accept, if not how many did not? How much training was required?

Methods, page 6: In line 2 it states that the dose was halved if the child coughed or wheezed. This does unstandardize the test as children would then be receiving a different cumulative dose.

In line 10, the unit mgr is used which is not the usual.

In Analysis and Statistics, page 7: The correlation Co-efficient is used to compare PCw and PC20. Justification is required as it would be highly likely that the correlation would be significant, but it doesn't tell us anything about the level of agreement which would be important in the application of the tests.

In Results, page 8: There is a Vbe of approximately 3% which is exceptional in this age group with low VC and quite different to all other reports. Please explain.

In Discussion, page 10: They state that MCT was feasible in 65% of our preschool children. As this was a group of referred wheezy children, this statement cannot be made. It was feasible in this group of children.

Page 12: They explain reduced FVC and flows as due to increased negative intrathoracic pressure, but this is a forced expiratory maneuver with positive intrathoracic pressure. The intrabronchial pressure could be lower with peripheral resistance. They also suggest glottic narrowing but the flow volume curves are not suggestive of upper airway narrowing. In the 5th last line, they state that PC20 may result in lower MCH concentrations. It would be better to say 'may be achieved with inhalation of lower MCH concentrations.'

Page 13: The last lines should also state that it is necessary to assess rigor as a test in diagnosis and management of asthma in this age group.

Table 1b: 1-2 satisfying GINA criteria must be wrong as they all should.

Table 2: Rhonchi is no longer considered a standardised term.

**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:** Yes

**Declaration of competing interests:**

I declare that I have no competing interests.