Reviewer’s report

Title: Computerized acoustic assessment of treatment efficacy in RSV Bronchiolitis: Nebulized Epinephrine Versus Albuterol- a double-blind study.

Version: 2 Date: 11 December 2006

Reviewer: Roger Davis

Reviewer’s report:

General

This paper aims to evaluate the efficacy and accuracy of the use of computerized quantification of wheezing and crackles and a clinical score for measuring the effect of treatment in infants with RSV bronchiolitis. The authors simultaneously present the results of a small randomized trial comparing albuterol and epinephrine.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Reporting on the comparison of albuterol and epinephrine detracts from the primary aim of the paper and makes the presentation more confusing than necessary. Since these results are not novel and are based on a study with very limited power (as mentioned in the discussion), the paper would be improved if this aspect were downplayed or removed entirely.
2. The stated goal of evaluating the accuracy of the computerized quantification seems to refer to the manual auditory audit of the data (one sentence in methods at the bottom of page 6, and one sentence in results on page 8). There is insufficient detail about this audit for the reader to assess whether the study provides sufficient evidence of accuracy. How were segments selected for audit? How many segments were evaluated? What methods and criteria were used for assessing ‘agreement’? Was the auditor blinded to the wheeze rate and crackle count determined by the computer?
3. The statistical methods section is not comprehensive. It states that Student’s t-tests were used to compare demographic and clinical history variables. Most of those variables (in Table 2) are binary variables, so the t-test is not appropriate. I recommend using Fisher’s exact test since most of the variables do not meet the standard criteria for using the chi-square test of independence. It is not clear which Wilcoxon test was used to compare within-group differences (e.g., the signed rank test, or the rank-sum test). There is also no indication of how you tested whether clinical score and crackle or wheeze counts were associated (top of page 7)—was this statement based on some sort of regression analysis, was a Spearman correlation computed, or was it some other approach?

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)

4. Interference is spelled incorrectly (middle of page 4).
5. BPD is not defined (middle of page 10).

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable
Statistical review: No

Declaration of competing interests:

'I declare that I have no competing interests'