Reviewer’s report

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

Version: 1 Date: 8 July 2006

Reviewer: H William Kelly

Reviewer's report:

General
General Comments:
Although this study was designed as a double blind comparison parallel trial of epinephrine versus salbutamol in RSV bronchiolitis the authors state that the primary purpose was to determine the feasibility of acoustic measurements of lung sounds (wheeze and crackles) in infants with acute bronchiolitis, presumably so that an adequately powered study using that monitoring technique could be completed in the future. However, if that were the primary objective it could just as well have been any treatment versus normal saline in order to determine responsiveness of the acoustic monitoring technique. As the study was underpowered to detect difference between treatments it is difficult to evaluate the responsiveness of the technique. That said, the study does provide evidence of feasibility for using the technique and some individuals with apparent responses so that they may be able to future trials. As a first time use in acute bronchiolitis the data is useful to researchers in the field but might be better presented as comparing the data of responders to non responders so that the audience may get a clearer picture of the expected response. The following are some specific comments that will help in the interpretation of the study.

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

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Specific Comments:
1) In the abstract the authors provide some significant differences between the two treatments which cannot be found in their results discussion or conclusion sections. They should remove from the abstract (or summary) and place in results section of the manuscript.
2) Introduction: While the introduction is okay, I would think they would want to emphasize the issue that objective measures such as pulmonary mechanics tend to show effects of treatment compared to subjective assessments and that is why this methodology is being assessed and not the various comparisons between drugs. It is almost as if they canâ€™t quite make up their minds about which is the primary focus of the study.
3) Methods: Nebulized epinephrine comes in two forms single isomer l-epinephrine and racemic epinephrine. Which did the authors use? Also what kind of nebulizer was used in the study.
4) Clinical assessment: Does the last sentence mean that the all of the clinical assessments in all of the patients were completed by the same investigator or that all of the clinical assessments in each individual patient were completed by the same investigator?
5) Page 6: Does crackle count mean number of crackles per 20 breaths?
6) Page 7-8: The authors should provide the data on heart rate and respiratory rate, as they are often included in clinical scores and allow the readers to judge its significance. One would expect an advantage of epinephrine over albuterol in heart rate from their respective pharmacology vasoconstriction versus vasodilation.
7) Page 8 this discussion revolves around differences between treatments which is out of place if the primary interest is to assess the technique, particularly as the authors state their study was insufficiently powered to assess differences in treatment.
8) Figure 3 is incorrect as it is a esophageal pH study

Discretionary Revisions (which the author can choose to ignore)
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