Reviewer’s report

Title: Validation of computerized wheeze detection during the first year of life and definition of optimal cut-off values

Version: 3  Date: 23 August 2014

Reviewer: Jung Yeon Yeon Shim

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This is a clinical study using a PulmoTrack to assess and validate computerized wheezing sound compared to subjective wheezing detection of recorded sounds by 3 medical doctors. The outcome was relative inspiratory and expiratory wheeze rates detected with a PulmoTrack and cut-off values as well as sensitivity and specificity.

Major compulsory revisions
1. Title: "definition of optimal cut-off values" should be corrected.
2. There was no data on intra-observer reliability and comparison with stethoscope examination to discriminate a true wheezing sound. To validate computerized wheeze, subjective wheeze detection from recorded sound should be matched with stethoscope wheeze sound and also wheeze rate should be measured in subjective wheeze detection. True wheezing sound by stethoscope examination can differ from recorded wheezing sound.
3. Sensitivity and specificity should be calculated in total study population.
4. Study subjects were all premature babies with various respiratory disorders. I wonder how many of them had true wheeze-related disorders. Without clinical relevance, determining wheeze rate by computer technique is of no use.
5. This data was from premature babies with respiratory disorders. Therefore, study subjects are different from neonate during the first year of life. The title should be changed according to the subjects' characteristics.
6. I cannot figure out wheeze rate (%). Cut-off level of wheeze rate 2% means 2 seconds of wheeze out of 100 seconds of breathing time. The computer detection of wheeze would be better than stethoscope wheeze detection by doctors?

Minor essential revisions
1. Table 1 should be revised with complete data.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

Declaration of competing interests:

I declare that I have no competing interests.