Reviewer's report

Title: Accuracy of parents in measuring body temperature with a tympanic thermometer designed for home use

Version: 1 Date: 2 September 2004

Reviewer: Shaul Dollberg

Reviewer's report:

General
The authors intend to answer a clinically important and relevant question. Whether a commercially available tympanic membrane infrared thermometer may be a reliable tool to measure temperature in the pediatric population. They compared measurement by such a thermometer as used by parents after reading the instructions to measurement done by an experienced nurse. Additionally, they compared these reading to a reading with a different tympanic membrane infrared thermometer, supposedly of a better quality. The authors conclude that the readings performed by the parents is different from the measurement done by the nurse using the "better" thermometer.

Tympanic membrane thermometers were introduced a few years ago as a non-invasive method for temperature measurement. In children they are well known to be inaccurate and in some cases and useless in others. Its ease of use and the rapidity of results suggest it to be a screening tool for fever. Nevertheless, several studies showed that agitation or crying, cerumen in the ear canal and lack of direct vision line between the thermometer and the tympanic membrane (as usually seen in infants) interfere with even this simple screening tests. It may even have no benefit over simple sensing of fever over the child forehead.

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

The authors should use their data in order to convey this message: Tympanic thermometers usage has too many pitfalls to be recommended as a clinical tool to measure temperature. It could be used, with caution, as a screening tool. Core temperature, either axillary or deep rectal, using a mercury-in-glass thermometer is still the gold standard for temperature measurements. The assumption that "hospital grade" and "home grade" infrared thermometers are essentially different could not be made.

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

Discretionary Revisions (which the author can choose to ignore)

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: Not suitable for publication unless extensively edited
Statistical review: No

Declaration of competing interests:

None