Reviewer’s report

Title: VALUE OF PARENTAL CONCERN AND CLINICIAN’S GUT FEELING IN RECOGNITION OF SERIOUS BACTERIAL INFECTIONS: A PROSPECTIVE OBSERVATIONAL STUDY

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Reviewer: Karen Dunn

Reviewer's report:

Diagnosing serious bacterial infection particularly in young children is a challenge. This paper aimed to determine the association between clinician gut feeling and parental concern and the presence of SBI. It is clearly written and is easy to read. However, I have questions about the methodology and the findings.

The study was conducted over 9 months and included the winter period. Inclusion were children 2mth -17yrs with a temperature of >38C, however it is not stated how or when the temperature was measured. Eg were children included only if an elevated temperature was recorded in the ED by reliable means or was a reported fever at home also included?

After the child was examined by the physician, the physician completed a questionnaire regarding their 'gut instinct' about the child having an SBI. However they were also asked about the presence of red flags at the same time which could bias their interpretation of their 'gut instinct' if they hadn't previously paid particular attention to these signs or symptoms.

Parent responses were recorded within 48hr of admission and as most children were admitted and underwent investigation it would be difficult to isolate the parents from the knowledge of the results before they completed their survey.

SBI included all the usual conditions

There were only 162 children included in the study, it is not stated how many children presented to the ED with a fever in the study period and were not included. Were these children a biased sample?

The median age of the children was 43.5mths and 22 were less than one year old, 63% of children were less than 5yrs.

The incidence of SBI was 28% which is much higher than in other studies and it is not fully explained why the rate is so high. The incidence of pneumonia was 17.3%. Pneumonia was defined as consolidation on CXR, and I wondered if some of these children had viral LRTI or was the entire sample biased toward sicker children?

Most children underwent investigations and 60% were admitted to hospital. This is a very high rate of
admission and I wonder why they were admitted, especially if the clinician thought there was a low chance of SBI.

The results of gut feeling/parent concern and the sensitivity and specificity for SBI cannot be reliably interpreted without accounting for the potential for bias as written above. And if the results were valid they do not provide reassurance to the ED physician that an SBI could be reliably detected on gut instinct alone.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
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I am able to assess the statistics

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Acceptable

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