Reviewer's report

Title: Interactive neonatal gastrointestinal magnetic resonance imaging using fruit juice as an oral contrast media.

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Reviewer: Modesto A Sosa

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Review of the manuscript:
Title: Interactive neonatal gastrointestinal magnetic resonance imaging using fruit juice as an oral contrast media.
Authors: Owen J Arthurs, Martin J Graves, Andrea D Edwards, Ilse Joubert, Pat AK Set and David J Lomas

I have reviewed the manuscript by Owen and colleagues submitted to BMC Medical Imaging. In essence it is a good scientific piece of work. The manuscript concerns an interesting problem related to the evaluation of an oral contrast media for neonatal gastrointestinal MRI. The article is well written and the scientific problem is well defined.

However, before the manuscript can be accepted for publication, several things must be addressed by the authors.

- Major Compulsory Revisions

1.- In Figure 2 results are not clear. I suggest presenting the results in percentage, including a detail explanation of what the y-axis means.

2.- In Figure 5B, it seems to be a mistake in the vertical scale of the graph which represents the difference stomach – proximal small bowel. As in the previous point, it is necessary more explanation of the axes and units employed.

3.- In Figure 6, an explanation of the behaviour of the curves and their differences and what these mean it is necessary.

4.- The paper includes in Figures 5 and 6 an evaluation of the relative intensity for studies in adults. However, despite the objective is to evaluate a contrast for children, nothing similar is presented from data in Figure 7.

- Minor Essential Revisions

1.- We found limitations in the methodology used. First, from data of Tables 1 and 2, I am not sure that all the fruit samples were prepared under similar conditions. Therefore, it is difficult to compare the results obtained in Figure 1.

2.- Another important limitation of this study is the number of volunteers. Only 3 adults and 1 child, particularly taking into account that the main objective of the work is to evaluate an oral contrast agent for using in neonates. The extrapolation of conclusions from the studies performed in adults to children is
not well justified.

3.- The article is written, as expected, using GB English. I suggest using a homogeneous form of writing throughout the article. Hence, in page 4, Background section, third line of second paragraph (line 85 of the manuscript), where says:

…..avoiding ionizing radiation…

I recommend changing the word ionizing by ionising.

4.- In Materials & Methods section, in page 9, final paragraph (line 185 of the manuscript), where says:

…..after 20 mls pineapple juice

change to: ….after 20 ml pineapple juice.

The same error appears on page 10 (line 207 of the manuscript) and page 11 (line 236 of the manuscript)

- Discretionary Revisions

I have some general comments for improvement the work:

1.- It is well known that in MRI of gastrointestinal system can be produced artifact by movement due for example to breathing. A good practice is the use of a breathing sensor. It might be interesting to do that in this job for studies in children.

2.- Further studies for monitoring the content of the fruit samples would be desirable in order to reach a firmer finding of the results.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests, financial or non-financial in relation to this paper.