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Title: ROLE OF SEX HORMONES IN GASTROINTESTINAL MOTILITY IN PREGNANT AND NON-PREGNANT RATS.

Reviewer's code: 03475586

Reviewer's country: United States

Science editor: Yuan Qi

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AUTHORS RESPONSE

We would like to thank you, the editors, and the reviewer for your time and consideration. Our manuscript has improved as a result of the reviews. We have addressed the comments point by point below, and hope that our work is satisfactory to your team.

Best regards,

Madileine Americo

The authors have attempted to determine changes in GI motility in rats during various phases of the reproductive cycle and pregnancy using non-invasive novel methods. It is important to recognize that this study is NOT a validation of these novel methods. That was done in prior studies already and this study uses these previously validated tools to study differences in motility. Therefore authors should refrain from statements like "ACB allows evaluating gastrointestinal contractility and transit in vivo, involving gut hormones, cytokines and an intact enteric nervous system". This conclusion cannot be drawn from the present study as no comparisons to gold standard testing were made.

As pointed out by the reviewer, phrase of comments was modified to "ACB is able to evaluate gastrointestinal contractility and transit in vivo. Besides, this approach allows analyzing the influence of hormone levels on motility parameters in an intact system".

Also, the study only provides an "association" between hormone levels and GI motility. It does not provide any cause-effect relationship. Therefore, recommend re-phrasing the conclusion "High progesterone and low estradiol levels decreased the contraction frequency and slowed gastric emptying during pregnancy in vivo". In addition to the level of estrogen and progesterone, several other changes in the body may also be taking place in the same time which may also contribute to changes in GI motility. As a result a direct cause-effect relationship cannot be established from this observational study.

As pointed out by the reviewer, sentence was modified to "Despite several changes in body during pregnancy may contribute to impaired GI motility, our data show that high progesterone and low estradiol levels can also be associated with decreased contraction frequency and slow gastric emptying."

Needs minor correction for English language.

A careful revision was performed by a native speaker.

Overall, it is a well conducted study. Adds to existing knowledge about potential roles of sex hormones in GI motility. Clinical applicability/utility is limited at this time, though.

Thank you for your comments. We think it's an area that can be explored and it also offers future perspectives in clinical application.