Reviewer’s report

Title: The effect of gestational diabetes mellitus on sufentanil consumption after cesarean section: A prospective cohort study

Version: 0 Date: 18 Sep 2019

Reviewer: Adam Jacob

Reviewer's report:

In the research article "The effect of gestational diabetes mellitus [GDM] on sufentanil consumption…", the authors describe a single center, prospective, observational cohort study to describe the association of GDM and post-cesarean opiate use. A cohort of 64 women undergoing cesarean delivery (32 with GDM, 32 without GDM) was followed after surgery to determine the amount of postoperative opiate use. Specifically, the primary endpoint was sufentanil consumption 6 hours after the operation. Secondary endpoints included 24 hours sufentanil consumption, frequency of PCA use, pain scores, adverse effects, and patient satisfaction. Patients with GDM used statistically significantly more sufentanil (24.0 vs 20.1 mcg) at 6 hours compared to non-GDM patients. Remaining secondary outcomes were not clinically different. Ultimately, authors concluded that "pregnant women with GDM require more opiates during the immediate postoperative period after cesarean section than those without GDM."

Though the difference in opiate use in the present study is only modest (at best), the results are provocative and reinforce the association between diabetes and higher postsurgical opiate needs demonstrated in previous research. Therefore, I would consider this hypothesis-generating research which requires more investigation.

General Questions/Comments:

1. The manuscript would benefit from review and editing for English language.
2. Could you subdivide the GDM cohort by White Classification? Any impact on results?
3. Why exclude patients that required epidural top-ups?
4. How strictly did you match by height and weight? For example, did you match weight exactly? Or perhaps + / - 1 kg? Would you have sufficient numbers to match 1:2 to increase power?
5. Did you include urgent and emergent cesarean sections? Only elective?

6. Did you exclude women with pre-existing diabetes?

7. Can you surmise what other unmeasured confounding variables might lead to small difference in early postsurgical opiate use?

8. Unless patients are receiving opiates from a source other than the sufentanil PCA, PCA use (i.e., number of times patients press the PCA button) as an outcome is redundant. Both are objective measures that reflect the same outcome. I would suggest removing PCA use as one of your secondary outcomes, and just include opiate use.

Specific Questions / Comments:

1. Introduction - Please review and reorganize this section. I believe all the appropriate content to justify the study is there, but I think it could be presented a bit more logically.

2. Introduction (lines 21-23) - Please include a reference for this sentence.

3. Methods (lines 50-51) - Please clarify what you mean by "maternal circulation state."

4. Results - Please avoid redundant presentation of results in Tables and text. One location is sufficient.

5. Results - Given how few women had HbA1c > 6, the results in the final paragraph are not very meaningful and could be deleted. Instead consider comparison by GDM White Classification?

6. Results - The data presented in Table 3 may be better summarized in text.

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

Yes

**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.

Yes
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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