Reviewer’s report

Title: Improved Analgesia and Reduced Post-Operative Nausea and Vomiting after Implementation of an Enhanced Recovery After Surgery (ERAS) Pathway for Total Mastectomy

Version: 0 Date: 20 Nov 2017

Reviewer: Robert J McCarthy

Reviewer's report:

BANE-D-17-00297

The authors report a multimodal anesthesia and analgesia paradigm in patients undergoing total mastectomy with immediate, non-flap reconstruction. The multi-modal technique reduced pain, opioid consumption and decreased nausea and vomiting compared to the prior anesthesia technique. The strength of this manuscript is the reporting of the compliance with the various components of the pathway.

Major concerns: The authors report this as an Enhanced Recovery After Surgery (ERAS) pathway; however, they do not report any surgical changes associated with the pathway. It would appear that the intervention was primarily a multi-modal analgesia protocol centered on the regional anesthetic (paravertebral or Pecs blocks). Table 5, removing the ERAS elements for the pre-ERAS patients is completely unimportant. The fact that the regional techniques used in this study reduced opioid consumption in the postoperative period is not a new finding. Nor is the finding that 3 anti-emetics (scopolamine, dexamethasone and ondansetron) is better than a single anti-emetic. It would be a more interesting and clinically important sensitivity analysis to compare opioid use and pain in those patients that did not receive a regional anesthetic technique with those that did in the ERAS period. Were the other interventions important to the outcome?

Is there evidence that acetaminophen and/or gabapentin on top of a paravertebral or Pecs block decreases opioid consumption compared to the regional technique alone? The other main finding of this study,

Specific comments: Why are opioid equivalents reported as oral equivalents? I would assume that most if not all of the opioid administered in this study was given intravenously. Report the IV morphine equivalents.

Pg13 Ln260. Patients were not enrolled in this study, remove the word enrollment.
In the results section of the abstract as well as in the manuscript, report the difference and the 95% CI of the difference for the point estimates provided.

What is the importance of the highest NRS pain score in the recovery room? I believe a most clinically important construct would be the area under the pain by time curve (pain burden) for the 23-hour duration of stay, perhaps broken into the PACU and floor periods.

Was time to discharge normally distributed? Time to discharge generally has a log-normal distribution.

Were there any other factors that went into the 54 minute faster discharge time? During the ERAS period was there any attempt to discharge the patients earlier? Were round done earlier in the morning of did patients receive discharge instructions earlier? Does 54 minutes reflect a clinically important difference? This should be addressed.

Provide differences and confidence intervals of the differences in the tables.

**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 am able to assess the statistics

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

Acceptable

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