Reviewer's report

Title: Utilization of Base Deficit and Reliability of Base Deficit as a Surrogate for Serum Lactate in the Peri-Operative Setting

Version: 2 Date: 20 December 2009

Reviewer: Matthew Martin

Reviewer's report:

Thank you for the opportunity to review this well-written and interesting manuscript. I agree with the authors findings and conclusions, but have several questions and comments regarding the details of their study.

Major Compulsory Revisions:
1. The authors state several times the possibility that saline loading is the factor that confounds the BD and LAC correlation in surgical patients. There are multiple factors that can affect the base deficit in these patients, which should be mentioned in the Intro and Conclusions. One of these is renal function.
2. Do the authors have data on the renal function of these patients? How many had some degree of renal insufficiency, which would result in false elevations of the base deficit?
3. The method used to measure lactate should be described in the methods section. Was a point of care device used?
4. ASA class is a categorical variable, not a continuous scale or measurement. It should not be presented as a mean +/- standard deviation. This should be changed in the manuscript and Table 2, perhaps reporting the percent in each ASA category, or the percent with ASA >= 3.
5. Figure 2 is redundant - the exact same data is presented in Table 1 - and should be deleted.
6. There appears to be no reference to Figures 3 or 4 in the manuscript, and no mention of the data from these figures.
7. This is a small series, and I imagine that the number of patients who had elevated lactates was very small. There is no mention of the size of the group that had HL - how many patients (or lab values) had lactate > 2. What was the p-value for the ROC curve? This should be mentioned also as a limitation in the discussion, as this study is very under-powered with the current numbers.

Minor Essential Revisions
1. Table 2 has several abbreviations (CABG, ASA) that should be described in a footer below the table.

Level of interest: An article whose findings are important to those with closely related research interests
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