Reviewer's report

Title: Reference intervals for plasma sulfate and urinary sulfate excretion in pregnancy

Version: 2 Date: 26 January 2015

Reviewer: Robert Powers

Reviewer's report:

In their manuscript Dawson et al. provide reference values for maternal plasma and urine sulfate levels, maternal sulfate excretion and cord blood sulfate levels.

Specific comments:

Major Compulsory Revisions:

Minor Compulsory Revisions:

1. It would be useful to provide sulfate levels from non-pregnant women as a comparison.
2. The text refers to the 95% CI for the data, but Table 1 lists 90% CI. Please clarify.
3. In Table 1, what is an upper bound and lower bound confidence interval? What are these data?
4. Provide legends for the Tables.
5. Birth weight is a crude and poor indicator. Can the authors provide analysis by birth weight centile?
6. What kind of plasma samples were used? EDTA?
7. How were urine samples collected? Were these spot collections?
8. What is the coefficient of variation for the quantification for sulfate analysis?
9. Were all plasma and urine samples analyzed in a blinded manner?
10. Gestational age at sample collection was determined how? Best estimate, LMP or ultrasound?
11. Line 223, I am shocked the authors would make a comment to the effect that lower levels of circulating analytes during pregnancy are the result of hemodilution. This is clearly wrong and not physiologic. The decrease in many circulating analytes (such as amino acids) in early pregnancy are the result of changes in renal function including increased GFR and excretion, and decreased reabsorption by the proximal tubule. (numerous references) In contrast, solutes such as copper and selenium actually increase during pregnancy similar to sulfate. In addition, hematocrit decreases during pregnancy because of hemodilution. Please correct this statement.
Discretionary Revisions:

**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.