Reviewer's report

Title: Hemoglobin levels and anemia evaluation during pregnancy in the highlands of Tibet: a hospital-based study

Version: 2 Date: 12 June 2009

Reviewer: Michael Höfler

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Major Compulsory Revisions

1. The huge method effect in measuring hemoglobin needs substantial and substantive explanation with their empirical and mathematical background. This is essential for assessing whether the authors conclusion that these methods do not work is warranted.

2. In comparing their anemia rates with rates from other parts of China the authors have to adjust for many more (i.e. the essential) risk factors for anemia that could explain the differences if they differ in prevalence between Tibet and other parts of China. Moreover, the adjustment for altitude is implicitly based on extrapolation if altitudes of 4500 are not reached in the places the other data from China come from.

3. Hospitalisation in pregnant women might be different for Tibetan and non Tibetan women. In that case the differences between them would be biased if the determinants of hospitalisation are not properly adjusted for.

4. No information is provided about response rates and potential selective non-response. Without that information the quality of the sample can not be assessed.

5. Moreover, the authors should compare their laboratory subsample with the total sample to assess whether sampling bias has crept in at the level of providing blood.

6. p.7: What are "baseline characteristics" if only one assessment was conducted?

7. p.7: The covariates need to be clearly defined along with how they were measured. For instance, how was "rural" vs. "urban" defined if the sample was only drawn in Lhasa? What is meant with "counterparts"? This would require matching and mentioning which variables were used for matching. Although adjustment in regression models has the same aim this terminology is not valid here.

8. Confidence intervals of means minus their reference value, not null hypothesis tests should be used to compare outcomes with respect to their reference values. The sample might have small power to detect differences if the variation in
clinical parameters is high.

Minor Essential Revisions
1. p.4: What are the highest and lowest altitudes of Lhasa? Or can variations be neglected?
2. p.7, below: "controlling for altitude" has to be replace with "adjustment for altitude".
3. p.8: "than non-Tibetans" has to be replaced with "than non-pregnant Tibetans"

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

Quality of written English: Needs some language corrections before being published

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