Reviewer’s report

Title: Randomized placebo-controlled trial of high-dose prenatal third-trimester vitamin D3 supplementation in Bangladesh: the AViDD trial

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Reviewer: Sanhong Yu

Reviewer’s report:

The manuscript by Roth and colleagues showed that supplementation of high dose vitamin D3 during 3rd trimester pregnancy significantly increase maternal and cord serum. Sample size in the study is large with subjected carefully screened. The data is clearly presented and interpretation is reasonable. Advantage and disadvantage of the study is well discussed.

Major compulsory revisions:

1. In the introduction part, author cited paper by Hollis as a reference to justify the dose used in this study. In the discussion part, author mentioned the same paper again. In Hollis’s paper, the baseline 25(OH)D of subjects is 58nmol/L, which is above 50nmol/L (sufficient). It is hard to understand why Hollis would administer the vitamin D supplementation if the levels of vitamin D in subjects are sufficient. Author increase the dose of vitamin D from 4000IU/day to 5000IU/day based on Hollis’s study. It sounds like the higher dose of vitamin D supplementation, the more the subjects will benefit it from. The levels of 25(OH) in blood is not the goal. In a word, it is not clear why author increase the dose vitamin D supplementation to 5000IU/day, especially when the subjects are pregnant, which might have long-term effect on the baby.

2. It is not clear why author started vitamin D supplementation at third trimester. If we already know that people are vitamin D deficient early on during or before pregnancy, vitamin D supplementation at that time might be more beneficial. Moreover, high dose of vitamin D supplementation at third trimester did increase levels of 25(OH)D in cord blood. However it is not clear whether the supplementation would reverse the adverse effect of vitamin D deficiency on the baby from early on.

Minor questions:

1. When author measure circulating vitamin D, is it 25(OH) vitamin D2 or 25(OH) vitamin D3?

2. It is not clear whether the subjects have liver disease since 25(OH) vitamin D3 is produced in liver.

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:

I declare that I have no competing interests.