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Commentary

Obstetric and neonatal outcomes in vitamin D supplemented gestational diabetes mellitus patients: an abridgment of systematic reviews

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In this letter, I present the epitome of the key findings of two recently published systematic review and meta-analysis articles that compared the maternal and neonatal outcomes between vitamin D supplemented and not supplemented gestational diabetes mellitus patients (GDM) [1,2].

These review articles searched for randomized controlled trials studying such juxtaposition primarily in three different electronic databases (PubMed, Embase, and Scopus) irrespective of its language and date of publication [1,2]. The reviewed randomized controlled trials were Iran-based, with participants average age between 28–38 years [1,2]. In five of these trials [3–7], included in both the reviews, oral vitamin D was supplemented as a sole or co-supplement (with probiotic, magnesium, calcium, zinc, and omega-3 fatty acids) in 380 non-insulin treated GDM patients [1,2]. An additional trial (n = 96) included in one of the reviews tested vitamin D supplementation in insulin recipients [1,8]. Overall, these trials were at low risk of bias [1,2]. Among the obstetric outcomes assessed, the risk of CS and macrosomia in prenatal vitamin D supplemented patients decreased by 39% (RR = 0.61; p=0.002; 95% CI: 0.44, 0.83) and 69% (RR = 0.31; p = 0.006; 95% CI: 0.13, 0.72), respectively [2]. Concerning the neonatal outcomes, the risk of hyperbilirubinemia (RR = 0.46; $p < 0.001$; 95% CI: 0.33, 0.64) and hospitalization (RR = 0.46; $p < 0.001$; 95% CI: 0.32, 0.65) decreased in the newborns of GDM mothers by 54%, each [1]. The lack of statistical heterogeneity (I^2 = 0%) along with the unchanged meta-analytic estimates obtained from the iteration of the meta-analyses using an alternative model (fixed-effect) and by dropping a trial each time, respectively, suggested robustness of the analysis [1,2]. Moreover, one of the review's assessments of the impact of missing data on the neonatal hyperbilirubinemia using a series of imputation assumptions replicated its available case analysis finding [1]. The maternal risk of pre-eclampsia, preterm delivery, and polyhydramnios did not vary between the antenatal vitamin D recipients and non-recipients [1,2].

Next, I state the weaknesses of these reviews [1,2]. The generalizability of the evidence is questionable since all trials were from Iran. Additionally, it is baffling to delineate from the reviews if the observed effects were solely due to vitamin D or its co-supplements.

Despite these limitations, these reviews are unique in their novelty [1,2]. Although not generalizable, from the Iranian GDM patients' perspective, the synthesized evidence might be useful to dictate a better GDM related obstetric and neonatal outcome management. Then, though it's difficult to disentangle the effect of vitamin D from its co-supplements, vitamin D's possible role in the observed effects is perhaps not refutable as it was the common supplement-ingredient among the respective intervention arm/s of the trials. Furthermore, the flexible literature search strategy and inclusion of randomized controlled trials (the highest level of epidemiological evidence) ensures comprehensiveness and scientific rigor to the review findings, respectively.

Nevertheless, these systematic reviews [1,2] create a global call to spawn novel clinical trials in this context in different nations to produce externally valid evidence.

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Conflict of interest

The author declares there is no conflicts of interest.

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