

EDITORIAL

Vitamin D Supplementation to Reduce the Risk of Preeclampsia: Is It True?

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Hypertensive disorders in pregnancy including preexisting chronic hypertension, pregnancy-induced hypertension, and preeclampsia is one of the most complication in pregnancy and it contributes to the maternal mortality worldwide. Actually, there is preeclampsia in every tenth pregnancy and the incidence of preeclampsia is approximately 2-7%. Several risk factors known in preeclampsia are nulliparity, multifetal gestation, previous preeclampsia, obesity, and preexisting medical conditions.¹

The pathophysiology of this condition is still unknown, but studies suggest an association to vitamin D status, measure as 25-hydroxyvitamin D (25(OH)D). Linnea B, et al stated that the 25(OH)D concentration at least 30 nmol/l was associated with lower odds ratio for preeclampsia.¹ Another review by David B, et al. pointed out that lower maternal calcitriol levels were associated with preeclamptic women at the diagnosis of disease in the third semester of pregnancy. It hypothesized that low IGF-1 and PTHrP explained the decreased calcitriol levels in observed preeclamptic women. Calcidiol as the marker of vitamin D have been found lower in early-onset severe preeclamptic women.² Other studies stated that vitamin D status is influenced by sunlight exposure; nevertheless, preeclamptic women had lower serum calcidiol levels in summer and calcitriol concentrations in winter.³ Therefore, they concluded that these two vitamin D metabolites have not been found related between healthy and preeclamptic pregnancies.

Regarding the controversies above, we suggest to take the vitamin D supplementation during pregnancy to reach a circulating-calcidiol level of 30 ng/ml and not exceeding 150 ng/ml to avoid the risk of toxicity. Apart from that, the level of calcidiol should be more than 40 ng/ml to optimize the calcitriol production during pregnancy.² In conclusion, we should give not only calcitriol, but also calcium to reduce the risk of preeclampsia development.

References

1. Bärebring L, Bullarbo M, Glantz A, Agelii ML, Jagner Å. Preeclampsia and Blood Pressure Trajectory during Pregnancy in Relation to Vitamin D Status. 2016; 25: 1-11.
2. Barrera D, Díaz L, Noyola-martínez N, Halhali A. Vitamin D and Inflammatory Cytokines in Healthy and Preeclamptic Pregnancies. 2015: 6465-90.
3. Lechtermann C, Hauffa BP, Herrmann R, Schu MM, Gellhaus A, Schmidt M, et al. Maternal Vitamin D Status in Preeclampsia?: Seasonal Changes Are Not Influenced by Placental Gene Expression of Vitamin D Metabolizing Enzymes. 2014: 9(8).