The relationship between dietary vitamin D status and serum 25-hydroxyvitamin D concentration among Minangkabau pregnant women in late pregnancy: findings from VDPM cohort study in West Sumatra, Indonesia

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Low vitamin D status is a common public health issue for pregnant women. The available evidence showed that low vitamin D dietary intake during pregnancy has been positively associated with vitamin D deficiency and seems to be one of the risk factors.[1,2]. The aim of this study was to identify the relationship between vitamin D intake and serum 25-hydroxyvitamin D (25(OH)D) concentration in Minangkabau pregnant women, Indonesia.

This prospective Vitamin D Pregnant Mothers (VDPM) cohort study was conducted from January to March 2018 in each public health centers in eight districts in West Sumatra province. We recruited among 323 pregnant women.[3,4] Serum 25(OH)D concentration and vitamin D intake were collected during the third trimester of pregnancy. Semi-Quantitative Food Frequency Questionnaire (SQ-FFQ) was used to assess vitamin D intake and 25(OH)D concentration was measured by enzyme-linked immunosorbent assays (ELISA). Pearson partial correlation and linear regression of those variables were calculated. Potential confounder variables such as maternal age, socio-economic status, and gestational age at blood withdrawal were adjusted in the model.

Mean of both vitamin D intake levels and 25(OH)D concentration were below recommendation, 8.47 ± 6.09 mcg/day and 24.35 ± 11.46 ng/ml, respectively. Vitamin D intake was weakly correlated with serum 25(OH)D concentration ($r = 0.417$, $P = 0.045$). Vitamin D status was not associated with vitamin D intake levels after adjusted potential confounders ($P = 0.410$).

Dietary vitamin D and serum 25(OH)D levels were positively but weakly correlated. Our results support the need for strategies to improve eating vitamin D-rich foods pattern to meet the recommendation dietary intake requirements and reduce the high prevalence of vitamin D deficiency status. Further studies were required to confirm these findings.

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