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Subject:

Association of maternal 25-hydroxyvitamin D concentration and criteria for diagnose gestational diabetes mellitus by 75 gram OGTT

Abstract:

Background:

25-hydroxyvitamin D [25(OH)D] concentrations is associated to diabetes but in GDM it is uncertainly known.

Objective:

To investigate the association of maternal 25-hydroxyvitamin D [25(OH)D] concentrations to 75 gram oral glucose tolerance test criteria in GDM by the International Association of the Diabetes of pregnancy (IADPSG), World Health Organization (WHO) and Canadian Diabetes Association (CDA) criteria.

Methods and materials:

Cross sectional study was carried out in 197 pregnant women at Rajavithi hospital during October 2010 to July 2011. The plasma 25-hydroxyvitamin D [25(OH)D] concentration and HbA1c level during 75 gm OGTT in GDM and non GDM were evaluated.

Results:

Mean maternal 25-OHD levels were 32.54±9.26 ng/dl, 31.96±9.93 ng/dl, 28.50±8.82 ng/dl by WHO, IADPSG and CDA criteria. In univariate regression analyses show that all mean maternal 25(OH)D level in GDM group were lower than non GDM group by P = 0.017, 0.004, 0.001 by WHO, IADPSG and CDA criteria respectively. In multiple logistic analysis we found only CDA criteria; maternal 25(OH)D level is an independent predictor after adjusting all statistically significant risk factor of GDM. In CDA criteria, 25(OH)D level lower than 31.46 ng/dl was predicting GDM by 69.9% sensitivity, 68% specificity at area under the curve (AUC) 0.732, 95%CI; 0.16, 0.88.

Conclusion:

In GDM group of three criteria, we found 25(OH)D level were lower than non GDM group. 25(OH)D level is an independent predictor of GDM in CDA criteria, on the contrary, it cannot predict GDM in IADPSG and WHO criteria.

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