

Baixo peso gestacional por deficiência de vitamina D3

01/06/10

Maternal Serum 25-Hydroxyvitamin D Concentrations Are Associated with Small-for-Gestational Age Births in White Women.

Bodnar LM, Catov JM, Zmuda JM, Cooper ME, Parrott MS, Roberts JM, Marazita ML, Simhan HN.
2010 Mar 3.

J Nutr.

Department of Epidemiology, Graduate School of Public Health, School of Medicine, University of Pittsburgh, Pittsburgh, PA 15261.

Abstract

Maternal vitamin D deficiency has been associated with numerous adverse health outcomes, but its association with fetal growth restriction remains uncertain. We sought to elucidate the association between maternal serum 25-hydroxyvitamin D [25(OH)D] concentrations in early pregnancy and the risk of small-for-gestational age birth (SGA) and explore the association between maternal single nucleotide polymorphisms (SNP) in the vitamin D receptor (VDR) gene and the risk of SGA. We conducted a nested case-control study of nulliparous pregnant women with singleton pregnancies who delivered SGA infants (n = 77 white and n = 34 black) or non-SGA infants (n = 196 white and n = 105 black). Women were followed from <16 wk gestation to delivery. Women's banked sera at <22 wk were newly measured for 25(OH)D and DNA extracted for VDR genotyping. SGA was defined as live-born infants that were <10th percentile of birth weight according to nomograms based on gender and gestational age. After confounder adjustment, there was a U-shaped relation between serum 25(OH)D and risk of SGA among white mothers, with the lowest risk from 60 to 80 nmol/L. Compared with serum 25(OH)D 37.5-75 nmol/L, SGA odds ratios (95% CI) for levels <37.5 and >75 nmol/L were 7.5 (1.8, 31.9) and 2.1 (1.2, 3.8), respectively. There was no relation between 25(OH)D and SGA risk among black mothers. One SNP in the VDR gene among white women and 3 SNP in black women were significantly associated with SGA. Our results suggest that vitamin D has a complex relation with fetal growth that may vary by race.

PMID: 20200114

Maternal early pregnancy vitamin D status in relation to fetal and neonatal growth: results of the multi-ethnic Amsterdam Born Children and their Development cohort.

Leffelaar ER, Vrijkotte TG, van Eijsden M. Br J Nutr. 2010 Mar 2;110.

Institute of Health Sciences, VU University Amsterdam, De Boelelaan 1085, 1081 HV Amsterdam, The Netherlands.

Abstract

Low vitamin D levels during pregnancy may account for reduced fetal growth and for altered neonatal development. The present study explored the association between maternal vitamin D status measured early in pregnancy and birth weight, prevalence of small-for-gestational-age (SGA) infants and postnatal growth (weight and length), as well as the potential role of vitamin D status in explaining ethnic disparities in these outcomes. Data were derived from a large multi-ethnic cohort in The Netherlands (Amsterdam Born Children and their Development (ABCD) cohort), and included 3730 women with live-born singleton term deliveries. Maternal serum vitamin D was measured during early pregnancy (median 13 weeks, interquartile range: 12-14), and was labelled 'deficient' (<= 29.9 nmol/l), 'insufficient' (30-49.9 nmol/l) or 'adequate' (>= 50 nmol/l). Six ethnic groups were distinguished: Dutch, Surinamese, Turkish, Moroccan, other non-Western and other Western. Associations with neonatal outcomes were analysed using multivariate regression analyses. Results showed that compared with women with adequate vitamin D levels, women with deficient vitamin D levels had infants with lower birth weights (-114.4 g, 95 % CI -151.2, -77.6) and a higher risk of SGA (OR 2.4, 95 % CI 1.9, 3.2). Neonates born to mothers with a deficient vitamin D status showed accelerated growth in weight and length during the first year of life. Although a deficient vitamin D status influenced birth weight, SGA risk and neonatal growth, it played a limited role in explaining ethnic differences. Although vitamin D supplementation might be beneficial to those at risk of a deficient vitamin D status, more research is needed before a nationwide policy on the subject can be justified.

PMID: 20193097