Risk factors of vitamin D deficiency and its influence on maternal and neonatal outcomes among Malaysian pregnant women

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ABSTRACT

Introduction: Vitamin D deficiency (VDD) affects more than half of pregnant women in Malaysia despite being situated near the equator. It has been linked to several maternal and neonatal complications. However, research on its impact among Malaysian pregnant women are limited. **Objective:** This study aimed to determine the risk factors of VDD and its impact on maternal and neonatal outcome. **Materials and Methods:** A prospective cross-sectional study was conducted at the Obstetrics and Gynaecology Department of HSAAS Selangor, Malaysia. A purposive sampling strategy was utilized to recruit 414 pregnant women. Data was collected using a structured interviewer questionnaire involving sociodemographic and anthropometric characteristics, vitamin D risk factor assessment and participants were followed up throughout pregnancy until delivery. Serum 25(OH)D3 level was analyzed using electrochemiluminescence immunoassay (ECLIA). **Results:** VDD was found to be associated with age, level of education, ethnicity, household income, work status, parity, types of dress worn and physical activity. The prevalence of vitamin D deficiency and insufficiency was 64.7% and 29%, respectively. Pregnant mothers with VDD are one time more likely to develop hypertensive disorders in pregnancy (HDiP) (aOR=1.0 (0.0-1.0 at 95% CI); p=0.008) and having caesarean section (aOR=1.0 (0.0-1.0) 95% CI; p=0.035) as compared to subjects with normal vitamin D level. There was no significant association between vitamin D deficiency with neonatal outcomes (NICU admission, respiratory distress, fetal distress, stillbirth). **Conclusions:** The study identified VDD as a significant determinant of HDiP and caesarean section. As both HDiP and caesarean section are associated with higher maternal morbidity and mortality, prevention of these and its precursor is essential. Thus, implementing policies such as vitamin D supplementation to enhance maternal and neonatal health outcomes could be considered.