

Abstract

An Observational Study of Serum Vitamin D Levels in Pregnancy Complicated With Spontaneous Preterm Birth

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Objectives:

The aim of this study was to determine the association between maternal and neonatal outcomes and maternal vitamin D status.

Methods:

This observational study was conducted in the Department of Obstetric and Gynaecology, Universiti Kebangsaan Malaysia Medical Centre. The eligible women were grouped into 3 arms after assessment of antenatal history, vitamin D level and bacterial vaginosis status. Women who continued their pregnancy till term were allocated as the control arm, whereas the preterm arm was further divided into pregnancies continued until term and those who delivered prematurely. The pregnancy and the neonatal outcomes were measured.

Results:

A total of 161 pregnant women were recruited in this study. The prevalence for vitamin D deficiency was 41.3% and vitamin D insufficiency was 50.9%, while only 6.8% of the pregnant mothers had sufficient level of vitamin D ($p=0.0001$). The mean level for maternal serum vitamin D for control group was 26.46ng/mL (± 3.78), the preterm group was 13.45ng/mL (± 6.88) and those who managed to continue the pregnancy despite episode of threatened preterm labour was 17.94ng/mL (± 8.02) ($p=0.0001$). A moderate positive correlation was seen between vitamin D level and gestational age at delivery ($p=0.0001$). The bacterial vaginosis infection was seen to occur more commonly in the premature group and those with threatened preterm labour. Maternal serum vitamin D was negatively correlated with BV infection with correlation coefficient -0.562 and $p=0.0001$. Fetal mean weight, length and head circumference were higher in control and threatened preterm labour group ($p=0.0001$). Significant positive correlations were found between maternal serum vitamin D and newborn weight, length and head circumference ($p=0.0001$).

Conclusion:

Majority of our pregnant mothers had vitamin D deficiency and insufficiency which was shown to associate with spontaneous or threatened preterm labour. The deficiency has positive correlation with gestational age at delivery and neonatal size in contrast to bacterial vaginosis infection.