## GYNECOLOGY & OBSTETRICS PATHOLOGY

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## Maternal vitamin D replacement and pre-eclampsia risk-A randomized controlled trial

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**Background & Objective**: Vitamin D has a key role in decidualization and implantation of the placenta. Recent studies have shown that low serum level of vitamin D3 "25-hydroxyvitamin D (25[OH] D)" is a risk factor for pre-eclampsia. The main objective of this study is to determine the effect of vitamin D3 deficiency supplementation in pregnancy on the risk of preeclampsia and to explore the dose effect in attaining vitamin D3 normal level.

**Method**: An open labeled randomized controlled study was conducted on 179 pregnant women presenting in King Fahad Medical City Antenatal Clinic from Oct 2012- July 2015. Patients with fetal anomalies, history of hypertension, pre-eclampsia, recurrent miscarriage, renal or hepatic disease and malignancy were excluded from the study. Serum 25[OH]D was analyzed during the first trimester (between 6 and 12 weeks of pregnancy). Participants with vitamin D3 deficiency (serum levels < 25 nmol/L) were included in the study and randomized for vitamin D3 supplementation 400 IU (Group 1) versus 4000 IU (Group 2). Both groups were compared for prevalence of pre-eclampsia and dose effect on vitamin D level.

**Results**: Of 179 gravidae enrolled, 164 completed the trial. Mean maternal 25[OH]D was significantly increased in group 2 from 16.3 $\pm$ 5 nmol/mL to 72.3 $\pm$ 30.9 nmol/mL compared with group 1 from 17.5 $\pm$ 6.7 nmol/mL to 35.3 $\pm$ 20.7 nmol/mL (P>0.0001). In comparison to group 1, the group 2 reported fewer pre-eclampsia events during the study period (8.6% versus 1.2%; P<0.05). The total number of IUGRs was lesser in the group 2 (9.6%) versus group 1 (22.2%); P=0.027. However, other obstetric outcomes were comparable between both groups.

**Conclusion**: Vitamin D supplementation in deficient group reduces the risk of pre-eclampsia and IUGR in a dose dependent manner. However larger clinical trials are required to investigate optimum dosage of vitamin D3.

## Biography

Mansoor Ayesha Ali is working at tertiary care hospital "King Fahad Medical City Riyadh" (KFMC). She has completed her residency in a Women's specialized hospital which is one of the four hospitals existing in KFMC and recently got promoted as a Consultant Ob/Gyn in the same hospital.

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