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## **Prevalence and risk factors for low vitamin D status among breastfeeding mother and infant dyad in an environment with abundant sunshine**

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**Purpose:** Evaluation of vitamin D (vD) status and risk factors for low vD among breastfeeding mother and infant dyads in high-risk populations are scarce despite reported increased risk of rickets in breastfed infants. We determined the prevalence and associated risk factors low vD status in breastfeeding mother-infant dyads in a population with high prevalence of infantile rickets.

**Patients & Methods:** We evaluated vD status of 60 consecutive exclusively breastfeeding Arab mother-infant pairs in Doha, Qatar participating in a high dose vD supplementation study to prevent vD deficiency, prior to study enrollment during August to September 2014 (sunny months). Serum 25(OH)D and PTH were measured within 1 month postpartum. Demographic, sun exposure and vD supplementation data were collected using standardized questionnaires. Vitamin D deficiency was defined as serum 25(OH)D <50nmol/L and severe deficiency as 25(OH)D < 25nmol/L in mothers and infants.

**Results:** Mean maternal age was 29 years and 77% had college or university education. Maternal median 25(OH)D was 32.5 nmol/L. Seventy-eight percent of mothers were deficient and 20% had serum 25(OH)D <25 nmol/L. Negative correlation between serum 25(OH)D and PTH was not statistically significant ( $r = -0.22, p = 0.09$ ). In the entire group, only 50% of mothers had reportedly taken vD supplements with median dietary vD of 119 IU/day. Median maternal sun index score (sun exposure (hrs/wk) x body surface area exposed while outdoor) was 0. Maternal serum 25(OH)D correlated with age ( $p < 0.02$ ), and percent BSA exposure while outdoor ( $p < 0.004$ ). Infant median 25(OH)D was 20.0 nmol/L and 83% were deficient while 64% had serum 25(OH)D <25nmol/L. Infant 25(OH)D correlated with maternal levels ( $r = 0.41, p = 0.001$ ). None of infants had received vD supplement at 1 month of age and median sun index score was 0. Infant's serum PTH showed significant negative correlations with 25(OH)D ( $r = -0.28, p = 0.03$ ).

**Conclusion:** Vitamin D deficiency is common in breastfeeding mothers-infants dyad and severe deficiency is more common in infants than mothers in this sunny environment. Low maternal and infant vitamin D status is associated with lack of sun exposure and low or lack of vD supplement intake. We suggest corrective vD supplement strategy to prevent vD deficiency in breastfeeding mothers and their infants, which should preferably start during pregnancy.

### **Biography**

Dr. Khalil Salameh has completed his M.D at the age of 24 years from Zagreb University and postgraduate residency in Jordan. He has a membership of royal college of physicians in Edinburgh. He is the chairman of pediatrics department in Al Wakrah Hospital, Doha, Qatar. He has published more than 10 articles in international journals.

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