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Serum Vitamin D status in Libyan Preterm Babies

Abdalla Jarari, Dhastagir Sultan Sheriff and Eman Hossain Siluma

Benghazi University, Libya

Preterm birth (PTB) refers to the delivery of babies before the completion of 37th week of pregnancy and in such children the incidence of vitamin D (vit D) deficiency/insufficiency is studied. The present study is undertaken to bring out the relationship between vitamin D deficiency and its effect on biochemical parameters calcium, phosphorus and alkaline phosphatase in preterm babies and compared with full term.

Subjects: This project is a case-control study. The preterm infant with gestational age below 37 weeks born in the Altawra hospital center al-Bayda and admitted to the neonatal intensive care unit (NICU) between February to July 2019 were included in the study. We excluded children with cyanotic heart disease or congenital anomalies. Informed consent from the participants in the study were taken. Institute's Ethics review Board recommended the study. We have two groups of infants first one preterm infant sixty-two patient and the control group full-term infant thirty-four patient. Serum levels of vitamin D were considered as adequate when the concentration of 25(OH) D was higher Than 30 mg/ml, levels between 20-30 mg/ml were considered as insufficient, and values that were equal or lower than 20 mg/ml defined the diagnosis of vitamin D deficiency and values less than ten mg/ml considered as severe vitamin D deficiency.

Materials and Methods: The serum sample from the preterm infants were collected from Neonatal Intensive Care Unit of ALTAWRA HOSPITAL CENTER ALBAYDA or labor room between February to July 2019. Two groups of infants studied were preterm infants(N=62) and control group full-term infants (N=34).The concentration of serum calcium, phosphorus, alkaline phosphatase and 25OH-Vitamin.

D from cord blood or venous blood from preterm and full term infants were measured by Enzyme immunoassay and routine methods respectively.

Results: 62 preterm neonates were taken for the study median gestational age 32 weeks (28 - 36) weeks, median birth weight 1960 gram (900 – 2800) gram, median calcium 8.7 mg/dl (p=0.000), median phosphorus 4.1 mg/dl (p=0.584), median alkaline phosphatase (ALP) 458 U/L (p=0.008), and median vitamin D level 13.6 mg/ml).The vitamin deficiency was: Very severe vitamin D deficiency was 9.7 % (< 5 mg/ml), sever vitamin D deficiency was 19.4 % (5 – 10 mg/ml), vitamin D deficiency 45 % (10 – 20 mg/ml) suboptimal vitamin D 25.8 % (20 – 30 mg/ml). When we compare preterm to control (full-term infants) we found the p-value is very highly significantly (p<0.000).

Conclusion: We found that all preterm infant have vitamin D deficiency 99.9 % with no significant relation to

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gestational age and sex. The correlation between vitamin D deficiency and the biochemical parameters were proportional; when Vit D level is low the ALP level is high ($p=0.008$) and CA level is normal or low ($p= 0.000$).

Biography

Abdalla Jarari, PhD is working as Visiting Professor of Medicine and Biotechnology in AUSN, India. He has worked as Biochemistry Professor in Benghazi University, Benghazi, Libya.

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