Session 2: Pediatric endocrinology

VITAMIN D STATUS IN INFANTS DURING THE FIRST 9 MONTHS OF AGE AND ITS EFFECT ON GROWTH AND OTHER BIOCHEMICAL MARKERS: A PROSPECTIVE COHORT STUDY

M. Gutch¹, S. Kumar¹, U.K. Mandal²
¹King George’s Medical College, Lucknow, India
²LLRM Medical College, Meerut, India

Background and aim. We planned this prospective cohort study in term newborn babies, with the objective to determine the incidence of vitamin D deficiency in infancy and to determine the level of vitamin D which triggers the physiological PTH axis of the body so as to differentiate truly deficient from sufficient vitamin D status.

Material and methods. 96 participants at birth were enrolled and followed up till 9 months of age. Serum 25OHD was estimated in cord blood at birth and at 14±1 weeks of life. 77 participants were followed up at 9 months for estimation of serum 25OHD, PTH, Alkaline phosphatase (ALP), calcium and phosphorus. Vitamin D deficiency was defined as serum 25OHD <15 ng/mL as per USIOM guidelines.

Results. Serum 25OHD levels at 9 months of age (17.58±8.97 ng/mL) were significantly increased in comparison to the level of 3 months of age (15.04±7.10 ng/mL) and at birth (8.94±2.24 ng/mL). At birth all the participants (77) were deficient in 25OHD levels. It was found that 16/94 (17%) and 19/77 (24.7%) participants on 3-й и 9-й месяц of age respectively became vitamin D sufficient without any vitamin D supplementation. There was a significant inverse correlation between serum 25OHD and PTH concentration (r=−0.522; p<0.001), serum 25OHD and ALP (r=−0.501; p<0.001). It was found that reduction in serum vitamin D level to below 10.25 ng/mL results in surge of serum PTH.

Conclusion. Vitamin D deficiency is common from birth to 9 months of age but incidence decreases spontaneously even without supplementation. Also large number of babies may be falsely labelled as vitamin D deficient with currently followed cutoffs. So a new cutoff for vitamin D deficiency needs to be established for neonates and infants.

KEYWORDS
Vitamin D, Growth and Development, Biochemical Markers.

THE EFFECT OF VITAMIN D DEFICIENCY ON THE SEVERITY AND COURSE OF MANIFESTATION IN TYPE 1 DIABETES MELLITUS IN CHILDREN

N. Zohrabyan, S. Hakobyan, S. Hakobyan, Y. Aghajanova
Yerevan State Medical University, Yerevan, Armenia

Background. As a hormone, vitamin D is involved in a number of processes (normal brain formation, anticancer effect, cardioprotection effect, immune defense, etc.). In diabetes mellitus type 1 several genetic and epidemiologic factors have been recognized. There is some epidemiologic evidence that