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Vitamin D Status in Exclusively Breastfed Infants

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Abstract: **Exclusive breast-feeding is recommended up to 6 months of age with all its beneficial effects on child survival. Several studies have concluded that adequate intake of vitamin D cannot be met with human milk as the sole source of vitamin D. As breast-feeding rates increase, the incidence of vitamin D deficiency rickets is also expected to rise.**

Objective: the aim of this study is to review the vitamin D status in exclusively Breastfed Infants through a systemic review of the previous studies that were discussing relation to this topic.

Methodology: a systemic review of previous studies discussing the vitamin D status in exclusively Breastfed Infants,

Conclusion: Maternal influences on vitamin D status in the exclusively breastfed neonate is more pronounced during the first 2 months of life, but, thereafter, infant vitamin D status is more directly affected by sunshine exposure and vitamin D supplementation.

Keywords: **vitamin D, Breastfed Infants.**

1. INTRODUCTION

Vitamin D is essential for bone development. It has additionally potential medical advantages in persons of all ages in decreasing the risk of autoimmune diseases, normal malignancy, and cardiovascular disease (1). The principle wellsprings of vitamin D are the synthesis in the skin after cutaneous introduction to daylight and dietary admission, however its accessibility actually in the eating regimen is exceptionally constrained. In this way, the real nourishments, for example, milk, squeezed orange, grains, or breads are for the most part invigorated with vitamin D in numerous created nations to forestall vitamin D insufficiency (2). In spite of various preventive procedures as of late, vitamin D lack is still a worldwide wellbeing issue both in the created and creating nations. The influencing considers for vitamin D status are skin pigmentation, dressing style attributable to religious or customary causes, and utilization of sunscreen or way of life decisions restricting presentation to daylight, level of scope, season, the degree of air contamination, and maternal inadequacy (3).

Vitamin D substance of breast milk is low (20–60 IU/L), even in vitamin D–replete moms. Hence, only breastfed infants, particularly when the presentation to daylight is constrained or supplementation with vitamin D is insufficient, are at risk for vitamin D lack. Every day vitamin D supplementation is thought to be the most proper approach to anticipate vitamin D lack and its clinical signs, for example, rickets, development disappointment, torpidity, or touchiness (4, 5).

Infants may get enough vitamin D from breast milk if their moms take high-measurement vitamin D supplements, a U.S. ponder recommends, offering a potential different option for the vitamin drops folks are right now advised to give nursing babies (6).

Pediatricians prescribe those moms only breastfeed infants until no less than six months of age since it can lessen children's risk of ear and respiratory diseases, sudden infant death disorder, sensitivities, adolescence weight and diabetes (7).

But since breast milk commonly doesn't contain enough vitamin D to help infants create sound bones, the American Academy of Pediatrics additionally advises nursing moms to give their children day by day supplements of 400 IU (global units) of vitamin D. As a distinct option for giving infants every day vitamin D drops, scientists gave moms diverse measurements of the supplement running from 400 to 6,400 IU day by day. At the point when ladies took the most astounding dosage, their breastfed babies received vitamin D levels in breast milk that were similar to the amount provided by the infant drops (8).

2. OBJECTIVES

Since increasing reports worldwide of vitamin D deficiency and rickets among breast-fed infants who lack adequate sunlight exposure and do not receive vitamin D supplementation, this study therefore Aim is to evaluate the Vitamin D Status in Exclusively Breastfed Infants worldwide. And to give an overview for the benefits of breastfeeding for the infants over the others who are not exclusively breastfed.

3. METHODOLOGY

We did a comprehensive search was undertaken by searching through the US National Library of Medicine (Pubmed), The following criteria had to be met for the publication to be selected will include all studies that were conducted in the past 30 years, Prospective and retrospective studies which provided outcome data on infants aged 2 months to 2 years or older, who were subjected to Vitamin D status in Exclusively Breastfed Infants were considered for inclusion. Studies reporting on at least one of the outcome measures were included. Articles not containing distinct data for patients undergo Vitamin D in Infants, studies that are discussing the status of Vitamin D in infants who are in exclusively breastfeeding, our research terms were as following, Vitamin D, Infant, breast feeding.

4. RESULTS AND DISCUSSION

In the study by Oya Halicioglu et al. 2012 recruited a total of 202 mothers were interviewed. Nineteen (9.4%) mothers refused to participate in the study. Excluded cases and reasons of exclusion are as follows: 28 (13.8%) infants because of the use of vitamin D <3 times a week, 7 (3.5%) infants with an incomplete questionnaire, 5 (2.5%) infants with an inappropriate blood sample. The study was performed with the remaining 143 infants who met the study criteria. Of 143 exclusively breastfed infants supplemented with daily 400 IU of vitamin D, 113 (79%) infants received vitamin D regularly. Mean serum 25(OH)D levels were 75.2 ± 27.3 nmol/L and 42.1 ± 19.7 nmol/L in infants with regular and irregular use of vitamin D, respectively (P< .001). All infants were evaluated to assess the factors affecting vitamin D status.

In a Balasubramanian S, et al. 2008 study of 50 cases of hypocalcaemia reported from an urban tertiary care children's hospital in Chennai, 13 exclusively breast-fed infants presented with hypocalcaemia due to vitamin D deficiency and most of them with seizures. None of them had received vitamin D supplementation and all their mothers had biochemical evidence for vitamin D deficiency. This review discusses the rising incidence of vitamin D deficiency in infancy and the need to consider and implement methods to prevent the same by supplementation and increased exposure to sunlight without the hazards of ultraviolet rays on the skin.

Another study by Wall CR, et al 2013, showed that 4 infants were enrolled (mean age 10 weeks). Median 25(OH)D concentration was 53 nmol/l (IQR 14-100 nmol/l). 23 (24%) infants had serum 25(OH)D concentration <27.5 nmol/l. Infants enrolled during winter had a median (IQR) 25(OH)D serum concentration of 21 nmol/l (14,31). Infants enrolled during summer had a median (IQR) 25(OH)D concentration of 75 nmol/l (55 100) (winter vs summer, p<0.0001).

5. CONCLUSION

Maternal influences on vitamin D status in the exclusively breastfed neonate is more pronounced during the first 2 months of life, but, thereafter, infant vitamin D status is more directly affected by sunshine exposure and vitamin D supplementation. Therefore, it is suggested that factors such as adequacy of sunlight exposure of mothers and infants, diet and vitamin supplementation, and skin pigmentation should be considered as well as seasonal differences. In the present study, all infants were standardized with respect to onset and dosage of vitamin D prophylaxis, age, and nutritional characteristics. Seasonal variation in the vitamin D status of the infants was the main result of our study.

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