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Vitamin D Supplementation Reduce Recurrent Wheezing in Black Infants Born Preterm

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A common complication of preterm infants is wheezing (a high-pitched whistling sound made while baby breathe). Wheezing is caused by lessened airways or inflammation that may affect the lung and airway development due to environmental exposure to air microbes[1].

Vitamin (D) is important in regulating inflammatory response, cytokines regulations and airway development[2,3]. Moreover, a noticeable effect to reduce allergic diseases, e.g. (asthma, eczema)[4,5]. Black infants experience complex rates of both prematurity and prematurity-associated wheezing, due to earlier epidemiological work suggests that; race may affect the relationship between vitamin (D) exposure and wheeze.[5,6,7]

In a recently published paper, Hibbs, MD et al.2018, acknowledge that the effect of Vitamin (D) had a positive effect in reducing wheezing complication in this population. They conducted a mask placebo-controlled randomized clinical trial in a total number of 300 Black/African American infants [1:1 ratio] toward grinding the effectiveness of two vitamin D supplementation approaches in black infants born at 28 to 36 weeks' gestational age (GA) [8].

All participants received open-label multivitamin until they were consuming 200 IU/d of cholecalciferol from formula or human milk fortifier. Then they were randomized to receive Vitamin (D) until 6 months with fixed age (sustained Vit-D supplementation – 400IU/day). Alternatively, another group, action cessation of the vitamin (D) to diet supplementation if they were taking enough Vitamin (D) in diet (200IU/day) [8.]

Using a Modified International Study of Asthma and Allergies in Childhood Questionnaire, recurrent wheezing by 12 months' adjusted age was the primary outcome. Secondary outcomes included parental report of upper and lower respiratory tract infections, pulmonary medications, hospitalization and emergency department visits, allergies, and eczema[8].

Results for this paper were promising; recurrent wheezing was significantly decreased in the sustained supplementation group (relative risk, 0.62 [95% CI, 0.44 to 0.87]; P = .005) which was their primary outcome. No significant differences between groups were seen in secondary outcomes[8].

In a conclusion; In this randomized clinical trial of black preterm infants, sustained supplementation with vitamin D group, compared with diet-limited supplementation group

resulted in a reduced risk of recurrent wheezing by 12 months' adjusted age. Neither group showed superiority in terms of allergic disease.

By this time, we need recent studies to further investigate how vitamin D affects this complication and what population will be often affected, also to distinguish more about if vitamin D is linked with allergic conditions and autoimmune diseases.

References

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