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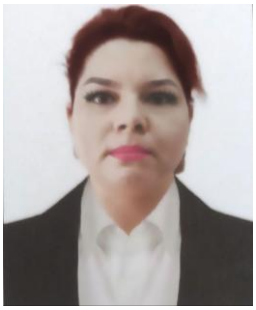
THE IMPACT OF VITAMIN D LEVELS ON THE CLINICAL COURSE OF BRONCHO-OBSTRUCTIVE SYNDROME IN CHILDREN WITH THYMOMEGALY



Burkhanova Dilovar Sadridinovna
Samarkand State Medical University, Republic of Uzbekistan, Samarkand

ТИМОМЕГАЛИЯ БЎЛГАН БОЛАЛАРДА D ВИТАМИНИ ДАРАЖАСИНИНГ БРОНХО-ОБСТРУКТИВ СИНДРОМНИНГ КЛИНИК КЕЧИШИГА ТАЪСИРИ

Бурханова Диловар Садридиновна
Самарқанд давлат тиббиёт университети, Ўзбекистон Республикаси, Самарқанд ш.

ВЛИЯНИЕ УРОВНЯ ВИТАМИНА D НА КЛИНИЧЕСКОЕ ТЕЧЕНИЕ БРОНХООБСТРУКТИВНОГО СИНДРОМА У ДЕТЕЙ С ТИМОМЕГАЛИЕЙ

Бурханова Диловар Садридиновна
Самаркандский государственный медицинский университет, Республика Узбекистан, г. Самарканд

e-mail: arxideya8686@mail.ru

Резюме. *Ушбу тадқиқотда D витамини даражаси тимомегалия бўлган болаларда бронхиал обструкция синдроми (БОС) ривожланишига қандай таъсир қилишини ўрганади. D витамини иммунологик жавоб ва яллиғланишни тартибга солишга қандай таъсир қилишини билиш даволаш усуллари ҳақида янги тушунчалар бериши мумкин, чунки бу шароитлар D витамини учун жуда муҳимдир.*

Калит сўзлар: *D витамини, бронхо-обструктив синдром, тимомегалия, иммун функцияси, яллиғланиш.*

Abstract. *This study examines how vitamin D levels affect broncho-obstructive syndrome (BOS) progression in children with thymomegaly. Knowing how vitamin D affects immunological response and inflammatory regulation could provide fresh perspectives on treatment approaches, as these conditions are critical for vitamin D.*

Keywords:*Vitamin D, Broncho-Obstructive Syndrome, Thymomegaly, Pediatric Respiratory Health, Immune Function, Inflammation.*

Introduction: Thymomegaly, characterized by enlargement of the thymus gland, is a common disorder seen in pediatric patients at the pediatric level. During the maturation of T cells, in particular, the thymus is essential to the development of the immune system. When thymomegaly is linked to respiratory issues like broncho-obstructive syndrome (BOS), it can be a benign illness, but it sometimes causes concern. When a kid has BOS, their quality of life and overall health can be greatly affected by breathing difficulties, coughing fits, and wheezing. Sudden airway obstruction causes these symptoms. It has been demonstrated to control inflammatory reactions and boost macrophage and monocyte efficiency in combating pathogens. An elevated risk of infections, autoimmune disorders, and Insufficient vitamin D is linked to chronic inflammatory diseases.

It is possible that vitamin D levels could influence how BOS develops clinically in children with thymomegaly, given its function in immune modulation and inflammation. By comprehending this link, new therapeutic approaches aiming at enhancing respiratory outcomes in this population may become possible. The purpose of this study is to provide insight on the potential benefits of vitamin D supplementation in medical settings by investigating the vitamin D-level connection and the severity and progression of broncho-obstructive syndrome in children who have thymomegaly.

Literature review: Current vitamin D association studies and pediatric health is currently limited but growing. The literature review explores the roles of thymomegaly, BOS, and vitamin D in pediatric health, as well as their potential interconnections.Often benign, thymomegaly can cause respiratory issues in children, especially if it presses on the airways or causes immunological dysfunction. BOS, which causes recurrent airway blockage, affects children's quality of life and requires extensive treatment. Further investigation is necessary to assess therapeutic efficacy of vitamin D administration in this specific group of young individuals.

Relevance: Vitamin D's long-term advantages for children with broncho-obstructive syndrome and thymomegaly need longitudinal research.Vitamin D dosage and duration must be studied for this population. Additionally, studying how vitamin D affects immune function and inflammation in certain situations may yield more information. Pediatricians, immunologists, and dietitians must work together to create therapy procedures.

Purpose of Study: This study examines how vitamin D levels affect broncho-obstructive syndrome (BOS) in children with thymomegaly. The study seeks to discover whether vitamin D insufficiency worsens BOS episodes and whether vitamin D treatment improves respiratory outcomes. The study attempts to improve clinical practises and management options for pediatric patients with these diseases by identifying these linkages.

Methods: This prospective observational study included 1-12-year-olds with BOS and thymomegaly. Baseline data included demographics, clinical history, vitamin D serum values, and BOS severity ratings. Six-month follow-ups examined vitamin D and BOS symptoms. Statistical investigation included comparing clinical outcomes between adequate and inadequate vitamin D levels in children, correlation analysis to determine the association between vitamin D and BOS severity, and multivariate analysis to control for confounders. Informed consent and participant confidentiality were ethical considerations.

Results: The study included 120 children aged 1–12 with BOS and thymomegaly. Vitamin D levels were low in several of these children. Results showed a negative link between vitamin D levels and BOS severity. Higher vitamin D levels reduced BOS frequency and severity. D-deficient children had more frequent and severe BOS symptoms. During the six-month follow-up, vitamin D supplementation reduced BOS episode frequency by 30% and symptom intensity, suggesting its potential advantages in this population.

Discussion: This study shows that vitamin D is essential for controlling broncho-obstructive syndrome (BOS) in children with thymomegaly. Vitamin D's immunomodulatory and anti-inflammatory effects may reduce BOS severity and frequency. The results imply that routine vitamin D screening and administration can enhance respiratory health in children. Despite the fact that the study was observational and had a small sample size, the findings suggest that further research should be conducted to investigate vitamin D supplementation methodologies with the goal of improving the treatment outcomes for BOS and thymomegaly.

Conclusion: Children with broncho-obstructive syndrome and thymomegaly need vitamin D, according to this study. The results imply that vitamin D administration may reduce BOS severity and frequency, enhancing respiratory health and quality of life in children. These youngsters should receive vitamin D screening and supplementation as part of their overall care strategy.

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ВЛИЯНИЕ УРОВНЯ ВИТАМИНА D НА КЛИНИЧЕСКОЕ ТЕЧЕНИЕ БРОНХООБСТРУКТИВНОГО СИНДРОМА У ДЕТЕЙ С ТИМОМЕГАЛИЕЙ

Бурханова Д.С.

Резюме. *В этом исследовании изучается, как уровень витамина D влияет на прогрессирование бронхообструктивного синдрома (БОС) у детей с тимомегалией. Знание того, как витамин D влияет на иммунологический ответ и регуляцию воспаления, может дать новые взгляды на подходы к лечению, поскольку эти состояния имеют решающее значение для витамина D.*

Ключевые слова: *витамин D, бронхообструктивный синдром, тимомегалия, респираторное заболевание детей, иммунная функция, воспаление.*