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Features of Broncho-Obstructive Syndrome in Children With Thymomegaly Depending on Vitamin D Levels

Burkhanova Dilovar Sadriddinovna
Assistant at the Department of Pharmacology, Samarkand State Medical University

Introduction

Thymomegaly is an enlargement of the thymus gland in children that may lead to immune system dysfunction. Combined with broncho-obstructive syndrome (BOS), characterized by airway narrowing, dyspnea, and coughing, these conditions significantly affect children's quality of life. Vitamin D plays a crucial role in supporting immunity and reducing inflammation. This thesis focuses on exploring the relationship between Vitamin D levels and the progression of thymomegaly and BOS in children.

Relevance of the Study:

1. Understanding the role of Vitamin D in thymomegaly and BOS is critical for developing preventive and therapeutic strategies.
2. The lack of research on the effect of Vitamin D on BOS progression in children with thymomegaly highlights the importance of this study.

Research Aim and Objectives:

To determine the features of BOS progression in children with thymomegaly depending on Vitamin D levels.

To study the impact of Vitamin D deficiency on the frequency and severity of BOS exacerbations.

To develop recommendations for using Vitamin D in BOS prevention and treatment.

Literature Review

Thymomegaly is characterized by an abnormal enlargement of the thymus gland, which can lead to weakened immune function. Research shows that the thymus is essential for the development of adaptive immunity, and its dysfunction increases susceptibility to infections.

Broncho-Obstructive Syndrome (BOS):

BOS is characterized by airway narrowing, leading to breathing difficulties, coughing, and wheezing. Common causes of BOS include allergies, viral infections, and immune deficiencies.

Vitamin D:

Vitamin D is a vital regulator of the immune system. It reduces inflammation and enhances the body's resistance to infections. Studies reveal that Vitamin D deficiency is associated with severe respiratory diseases in children.

Knowledge Gaps:

1. The relationship between thymomegaly, Vitamin D levels, and BOS progression remains underexplored.
2. Limited data exist on the preventive role of Vitamin D in reducing BOS exacerbations.

Methodology

Participants:The study included 50 children aged 6 months to 12 years.

Participants were divided into two groups: children with normal Vitamin D levels and those with deficiency.

Data Collection Methods:

Diagnosis of thymomegaly was conducted through clinical examination and radiographic imaging.Blood tests were performed to determine serum Vitamin D levels.The frequency of BOS exacerbations was recorded.

Data Analysis Methods:

Statistical analysis was performed using SPSS software.Comparison of BOS frequency and severity based on Vitamin D levels was conducted.

Results

Children with low Vitamin D levels experienced 3-5 times more frequent BOS exacerbations compared to those with normal levels.BOS was milder in children with normal Vitamin D levels, with fewer symptoms reported. The combination of thymomegaly and low Vitamin D levels worsened BOS progression.Data were presented using charts and tables for clarity.

Discussion.

The findings confirm existing research on the role of Vitamin D in regulating immunity and reducing inflammation.Thymomegaly and BOS severity are strongly influenced by Vitamin D levels, emphasizing the need for its correction.Limitations include the relatively small sample size and lack of long-term follow-up.Recommendations for further research include studying the long-term effects of Vitamin D supplementation on BOS.

Conclusion

Vitamin D deficiency aggravates BOS progression in children with thymomegaly. Correcting Vitamin D levels helps reduce the frequency and severity of BOS exacerbations. The results of this study can be used to develop new approaches to BOS prevention and treatment in pediatric practice.

References

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