JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205

Volume 15 Issue 12, December 2025

Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

CLINICAL AND LABORATORY FEATURES OF GASTROINTESTINAL DISORDERS IN CHILDREN WITH FOOD ALLERGIES

Qo'ziyev Diyor Voxidjonovich

Andijan State Medical Institute, Uzbekistan

Abstract: Food allergies are an increasingly common cause of gastrointestinal disorders in children and represent a significant diagnostic and therapeutic challenge. Gastrointestinal manifestations often mimic functional or inflammatory bowel diseases, leading to delayed diagnosis. This study aims to analyze the clinical presentation and laboratory characteristics of gastrointestinal disorders in children with food allergies. The findings demonstrate that a combination of gastrointestinal symptoms, immunological markers, and laboratory abnormalities plays a crucial role in early diagnosis and appropriate management. Recognition of specific clinical and laboratory patterns may improve diagnostic accuracy and reduce disease-related complications.

Keywords: Food allergy, gastrointestinal disorders, children, clinical features, laboratory diagnostics

Introduction

Food allergies are immune-mediated adverse reactions to dietary antigens and represent a growing public health concern in pediatric populations worldwide. In children, food allergies frequently manifest through gastrointestinal symptoms due to the immaturity of the intestinal barrier and immune system. Common gastrointestinal presentations include vomiting, diarrhea, abdominal pain, bloating, and failure to thrive. These symptoms often overlap with other gastrointestinal disorders, making diagnosis challenging in routine clinical practice.

Gastrointestinal involvement in food allergies may be mediated by immunoglobulin E (IgE)-dependent and non-IgE-mediated mechanisms. Conditions such as food protein-induced enterocolitis syndrome, allergic proctocolitis, and eosinophilic gastrointestinal disorders highlight the diverse spectrum of allergic gastrointestinal disease. Laboratory diagnostics, together with careful clinical evaluation, plays a pivotal role in differentiating food allergy–related disorders from infectious, inflammatory, and functional gastrointestinal diseases.

Materials and Methods

This study was conducted as a clinical and laboratory observational analysis of children diagnosed with food allergies presenting with gastrointestinal symptoms. The study population included children aged 6 months to 14 years who were evaluated in pediatric gastroenterology and allergy clinics. Clinical assessment focused on gastrointestinal symptoms, nutritional status, growth parameters, and associated allergic manifestations such as eczema or respiratory symptoms.

Laboratory investigations included complete blood count with differential, total and specific IgE

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levels, eosinophil count, inflammatory markers such as C-reactive protein, and stool analysis. In selected cases, elimination diets and oral food challenge tests were used to confirm the diagnosis. Laboratory findings were analyzed in relation to clinical presentation and disease severity.

Results

Clinical evaluation revealed that the most common gastrointestinal symptoms in children with food allergies were recurrent abdominal pain, diarrhea, vomiting, and feeding intolerance. Infants frequently presented with regurgitation, colic, and blood-streaked stools, whereas older children reported chronic abdominal discomfort and altered bowel habits. Growth retardation and failure to thrive were observed in children with prolonged or severe disease.

Laboratory findings demonstrated characteristic immunological and hematological changes. Elevated total and specific IgE levels were commonly detected in IgE-mediated food allergies. Peripheral eosinophilia was observed in a significant proportion of patients, particularly in those with eosinophilic gastrointestinal involvement. Stool analysis occasionally revealed occult blood and increased inflammatory cells, while C-reactive protein levels remained normal or mildly elevated, helping to differentiate allergic disorders from infectious or inflammatory bowel diseases.

Discussion

The results of this study highlight the importance of combined clinical and laboratory assessment in diagnosing gastrointestinal disorders associated with food allergies in children. Gastrointestinal symptoms alone are often nonspecific, but when accompanied by laboratory markers such as elevated IgE levels and eosinophilia, the likelihood of an allergic etiology increases significantly.

Early recognition of food allergy–related gastrointestinal disorders is essential to prevent unnecessary diagnostic procedures and inappropriate treatments. Laboratory findings, while not diagnostic in isolation, provide valuable supportive evidence and help guide further evaluation, including elimination diets and food challenge testing. Differentiation between IgE-mediated and non-IgE-mediated mechanisms is particularly important, as laboratory markers may be less pronounced in non-IgE-mediated conditions.

Conclusion

Gastrointestinal disorders in children with food allergies are characterized by distinct clinical patterns and supportive laboratory findings. Recognition of recurrent gastrointestinal symptoms in combination with immunological and hematological abnormalities facilitates early diagnosis and appropriate management. A multidisciplinary approach integrating clinical evaluation, laboratory diagnostics, and dietary interventions is essential for improving outcomes and preventing long-term complications in affected children. Further research is needed to refine diagnostic criteria and identify novel biomarkers for allergic gastrointestinal diseases in pediatric populations.

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