



ENTERAL HISTAMINOSIS IN CHILDREN WITH MALABSORPTION SYNDROME: CLINICAL AND DIAGNOSTIC FEATURES

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ABSTRACT

In recent years, malabsorption syndrome has become widespread among children, characterized by impaired absorption of nutrients in the intestinal wall [1]. This condition may be associated with numerous causes, including celiac disease, lactase deficiency, dysbacteriosis, or inflammatory processes. Recent studies have shown that in some patients, a decrease in intestinal diamine oxidase (DAO) activity leads to histamine accumulation in the intestinal mucosa due to insufficient degradation [2]. This condition, known as enteral histaminosis, manifests clinically with symptoms similar to food allergies — abdominal pain, flatulence, skin reactions, headache, and fatigue — but without an IgE-mediated mechanism [3]

Introduction

In recent years, malabsorption syndrome has become widespread among children, characterized by impaired absorption of nutrients in the intestinal wall [1]. This condition may be associated with numerous causes, including celiac disease, lactase deficiency, dysbacteriosis, or inflammatory processes. Recent studies have shown that in some patients, a decrease in intestinal diamine oxidase (DAO) activity leads to histamine accumulation in the intestinal mucosa due to insufficient degradation [2]. This condition, known as enteral histaminosis, manifests clinically with symptoms similar to food allergies — abdominal pain, flatulence, skin reactions, headache, and fatigue — but without an IgE-mediated mechanism [3].

This study presents two clinical observations — one in a child with celiac disease and another in a child with lactase deficiency — illustrating the relationship between clinical and laboratory signs of enteral histaminosis.

Objective

To evaluate the clinical manifestations of enteral histaminosis in children with celiac disease and lactase deficiency, and to compare them with laboratory indicators (DAO, histamine, calprotectin, EDN).

Clinical Case 1: Child with Celiac Disease (9 years old)

Anamnesis: The 9-year-old patient had experienced abdominal pain, bloating, diarrhea, fatigue, and weight loss over the past two years. No allergic history was reported.

Clinical findings: The patient appeared pale, with mild abdominal distension and loose stools 2–3 times per day. VAS symptom severity scale: abdominal pain — 8 points, bloating — 7 points, fatigue — 6 points.

Laboratory results: DAO — 6.5 E/ml (below normal, <10 E/ml), Histamine — 12.8 ng/ml (above normal, $p < 0.01$), Calprotectin — 178 $\mu\text{g/g}$ (elevated), EDN — 90 ng/ml.

Analysis: Due to reduced DAO activity, histamine inactivation was impaired. Elevated calprotectin and EDN levels indicate intestinal inflammation. It is hypothesized that excessive histamine accumulation contributed significantly to the patient's clinical symptoms.

Clinical Case 2: Child with Lactase Deficiency (7 years old)

Anamnesis: A 7-year-old child complained of abdominal bloating and pain 2–3 hours after consuming dairy products. No allergic reactions were noted.

Clinical findings: The patient's general condition was satisfactory, with no skin manifestations, but abdominal distension and irregular stools were observed. VAS symptom severity scale: pain — 5 points, bloating — 6 points.

Laboratory results: DAO — 9.2 E/ml, Histamine — 8.9 ng/ml, Calprotectin — 112 $\mu\text{g/g}$, EDN — 64 ng/ml.

Analysis: A slightly reduced DAO level led to moderate histamine accumulation. Symptoms were milder than in the celiac case, but bloating and abdominal distension correlated with elevated histamine levels.

Discussion

The findings indicate an inverse relationship between DAO activity and histamine excess, which determines the severity of clinical symptoms (abdominal pain, bloating, diarrhea). In children with celiac disease, parameters were more severe, likely due to deeper intestinal mucosal damage.

Conclusion

1. Enteral histaminosis can be identified in children with malabsorption syndrome through clinical and laboratory features, even in individual cases.
2. There is an inverse relationship between DAO activity and histamine concentration.
3. Elevated calprotectin and EDN levels confirm the inflammatory component associated with enteral histaminosis.

Therefore, the use of DAO, histamine, and fecal biomarkers is an effective approach to establishing diagnostic criteria for enteral histaminosis.

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