

## **The role of IgA and IgG anti-transglutaminase antibodies in the diagnosis of celiac disease in children**

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### **Abstract:**

Aims: Diagnosing celiac disease in children presents various challenges for pediatricians in the various clinical stages. Thus, the diagnosis of cases increased significantly, although children did not always present symptoms or clinical signs of the disease. In support of the diagnosis, several factors come into play:

screening, serological tests, awareness of the presence of celiac disease and the factors that favor its occurrence.

**Material and methods:** We performed a retrospective study at the Pediatric Clinical Hospital "St. Ioan " Galati between January 1, 2014 and October 2022. In this study we included 2640 children with suggestive symptoms of celiac disease.

**Results:** A number of 102 patients were diagnosed with celiac disease, recurrent abdominal pain being the most common symptom.

**Conclusions:** Early diagnosis is a decisive factor in the treatment and evolution of celiac disease with a good psychological contribution for parents.

**Keywords:** recurrent abdominal pain, celiac disease, child

**Introduction:** Celiac disease is characterized by malabsorption syndrome, associated with total or subtotal villous atrophy. It is slowly reversible after the exclusion of gluten from the diet and reproducible to some degree after a variable interval after the reintroduction of gliadin (1).

The diagnosis of celiac disease in children has increased significantly in recent years due to screening, serological tests, awareness of celiac disease and the factors that favor the appearance of the disease. Another beneficial factor in diagnosis is the redirection of the costs of performing serological tests through different forms of hospitalization.

The purpose of the study is to identify the particularities of the clinical, paraclinical and serological picture.

### **Materials and Methods**

The study was carried out retrospectively in the Pediatric Clinical Hospital "St. Ioan " Galati, which included a number of 2640 pediatric patients, between January 2014 and October 2022.

**Inclusion criteria:** presence of digestive and extra-digestive signs and symptoms, determination of IgA and IgG anti-tissue transglutaminase antibodies. Patient data were recorded in an inclusion form: demographic data, dietary history, nutritional status, signs and symptoms. The diagnosis of celiac disease was established according to the ESPGHAN criteria, revised from 2012.

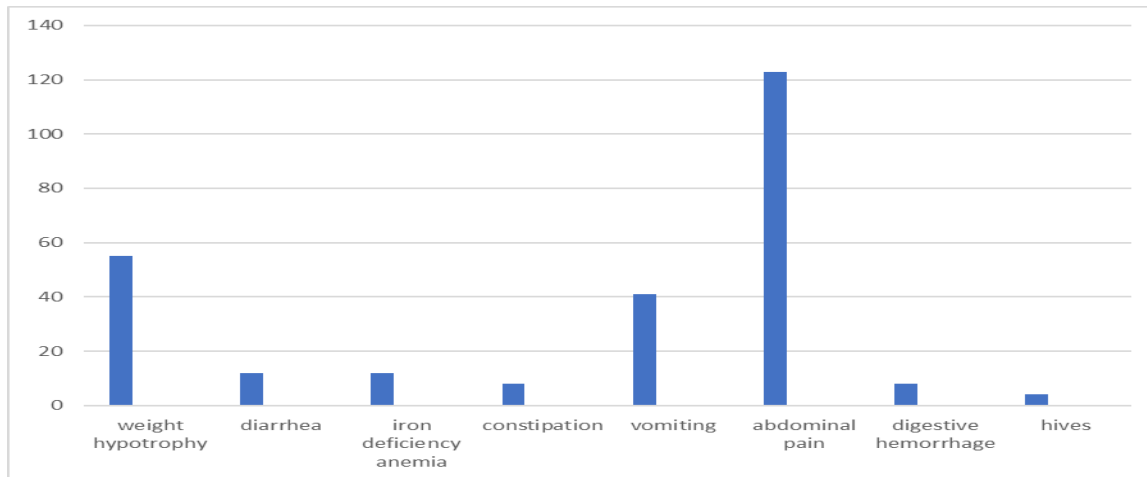
The study was approved by the Ethics Committee of the "St. John "Galati.

**Results:**

Between January 2014 and October 2022, signs and symptoms associated with celiac disease were observed

to a number of 2640 patients, hospitalized in the Pediatric Clinic "St. Ioan "Galati, the ratio is 1:1,1 (boys/girls).

The incidence of the disease was observed in the 15-18 age group. The majority was observed in the presence of abdominal symptoms.



**Figure 1. Common Symptoms**

To confirm the diagnosis, serological tests were performed: antibodies, transglutaminase IgA and IgG.

Following the results, 102 patients were diagnosed. The age at which gluten was introduced was 6.2 months.

AGE	NEGATIVE TEST	POSITIVE TEST	WEAKLY POSITIVE
1-4	208	7	298
5-9	148	38	731
10-14	187	19	428
15-18	148	38	390

Tabel 2- Confirmation of the presence of IgA (ATTG)

**Discussion:**

From the number of 2640 patients who presented with celiac symptoms, 7 patients aged between 1-4 years presented positive ATTG, 5-9 years - 38 cases, 10-14 years - 19 cases, 15-18 years - 38 cases . The ratio of boys to girls being 1:1.1, unlike the epigemological data where the ratio of boys/girls is 1:2.

In the conducted study, the increased incidence of celiac disease was observed in the age group 5-9 years and 15-18 years. Among the clinical manifestations of celiac disease, the most common were abdominal pain, weight loss, food vomiting.

**Conclusions**

The prevalence of celiac disease in symptomatic patients was 3.9%. Abdominal pain, vomiting, hypotrophy in children should be taken into account and serological screening performed.

Serological tests carried out in good time can help in the early diagnosis of the presence of celiac disease in children. The introduction of funding for genetic analysis within the screening program is another benefit for early diagnosis, with beneficial effects for both the child and the parents.

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