Research

INSIGHT JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY

Role of Anti-Endomysial Antibodies in Predicting the Need for Repeat Endoscopy in Patients Suspected of Coeliac Disease with Initially Negative Duodenal Biopsies

Shashan Mathew
[2]Department of Medicine, Mexico

[*]**Corresponding Author:**
Shashan Mathew
Departments of Medicine, Mexico

Received Date: 02 Feb 2026
Accepted Date: 23 Feb 2026
Published Date: 27 Feb 2026

Citation: Shashan Mathew. Role of Anti-Endomysial Antibodies in Predicting the Need for Repeat Endoscopy in Patients Suspected of Coeliac Disease with Initially Negative Duodenal Biopsies. IJGH. 2026; 1: 1-3

1. Abstract

1.1. Background and Aim: Some individuals suspected of having coeliac disease require more than one oesophago gastro duodenoscopy (OGD) before histological confirmation is achieved. This can occur even when the recommended number of duodenal biopsy samples is taken during the first endoscopy. The purpose of this study was to compare such patients with those diagnosed after a single endoscopic procedure and to determine whether specific predictors could identify individuals likely to require repeat endoscopy.

1.2. Methods: Patients with suspected coeliac disease who underwent OGD in our department were included in the study. Information related to clinical symptoms, laboratory findings, and biopsy results was collected from medical records. Patients were divided into two categories: Group 1, those diagnosed after the first OGD, and Group 2, those who required a second OGD to confirm the diagnosis.

1.3. Results: A total of 178 patients underwent OGD (average age 47 years; 73.6% female). Among them, 12 patients (6.7%) needed a second endoscopic procedure for diagnosis. The number of duodenal biopsy samples taken during the initial endoscopy was similar in both groups (4.6 vs 4.5; P = 0.76). However, the second procedure in Group 2 involved significantly more biopsy samples (6.4 vs 4.5; P = 0.028). Patients in Group 2 more frequently had negative or weakly positive anti-endomysial antibody (anti-EMA) results (P = 0.039) and showed a tendency toward lower anti-tissue transglutaminase IgA (anti-tTG IgA) levels compared with Group 1.

1.4. Conclusion: Low or negative anti-EMA results in patients suspected of coeliac disease may indicate the need to collect a greater number of duodenal biopsy samples during the initial endoscopy. This strategy may help establish the diagnosis earlier and reduce the need for repeat procedures. Therefore, anti-EMA testing plays an important role in the diagnostic evaluation of coeliac disease.

2. Keywords: Coeliac disease, anti-endomysial antibody, anti-tissue transglutaminase IgA, duodenal biopsy

3. Introduction

Biopsy of the small intestine remains the most reliable method for confirming the diagnosis of coeliac disease (CD). Typically, this procedure is carried out when patients present with symptoms such as chronic diarrhoea, nutrient malabsorption, or iron-deficiency anaemia, especially when blood tests show positive coeliac-specific antibodies. Among these markers, the anti-tissue transglutaminase IgA (tTG-IgA) antibody is considered highly sensitive and specific in patients who do not have IgA deficiency.

Current international guidelines recommend that at least four biopsy samples should be collected from the second portion of the duodenum during endoscopic evaluation in individuals suspected of having coeliac disease. Despite following these guidelines, some patients still show normal histological findings. One explanation for this is that intestinal damage in coeliac disease can appear in a patchy pattern, meaning that biopsy samples might miss the affected areas of the mucosa, resulting in a false-negative diagnosis.

When such cases occur, patients who continue to have strong clinical suspicion or persistently elevated antibody levels may need to undergo a second upper gastrointestinal endoscopy to obtain additional biopsy samples. Unfortunately, it is currently difficult to predict which patients have this patchy form of disease before the first endoscopic examination.

Being able to identify such patients in advance would be beneficial. If clinicians knew that a patient was more likely to have patchy intestinal involvement, they could take more biopsy samples during the initial procedure rather than the standard number. This approach could help establish the diagnosis earlier and prevent the need for repeat endoscopies, thereby reducing both patient risk and the burden on endoscopy services.

INSIGHT JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY

The present study therefore aimed to compare two groups of coeliac patients: those whose diagnosis was confirmed after a single endoscopy and those who required more than one procedure for histological confirmation. In addition, the study sought to determine whether certain clinical or serological markers, particularly specific antibodies, could predict the need for additional biopsies during the first endoscopic evaluation.

4. Materials and Methods

This retrospective study involved 178 patients who were referred to the gastroenterology department between January 2008 and April 2013. These individuals either presented with symptoms suggestive of coeliac disease or had positive serological tests indicating possible disease. All patients underwent endoscopic examination with duodenal biopsies for diagnostic confirmation.

Patient records were reviewed to obtain information on demographics, presenting symptoms, laboratory investigations, endoscopic findings, and histological results. Serological tests included measurements of anti-tTG IgA and anti-endomysial antibodies (EMA), which were performed within six months prior to the initial endoscopy. Testing for HLA typing was not routinely performed at this medical center.

A repeat endoscopy was recommended for patients in whom clinical suspicion remained high or antibody levels continued to be elevated despite normal histological findings from the first biopsy samples. Patients were then classified into two groups:

- Group 1: Patients diagnosed after a single endoscopy
- Group 2: Patients requiring two endoscopic procedures for diagnosis

The prevalence of newly diagnosed coeliac disease in both groups was calculated, and comparisons were made to determine potential predictors for the need for repeat endoscopy.

5. Results

During the study period, 178 patients received a confirmed histological diagnosis of coeliac disease. The average age of participants was 47 years, with ages ranging from 18 to 84 years, and 131 patients (73.6%) were female. The symptoms reported by patients included diarrhoea, abdominal bloating following consumption of gluten-containing foods, weight loss, and iron-deficiency anaemia.

Among these individuals, 12 patients (6.7%) required a second gastroduodenoscopy to establish the diagnosis. The mean age of this subgroup was 50.6 years, and the majority were women.

No statistically significant difference was found in the average age between the two groups. Similarly, the number of biopsy samples collected during the first endoscopy was almost identical in both groups, confirming that standard guideline recommendations were followed in each case.

However, patients in Group 2 required a significantly greater number of biopsy samples during the second endoscopic examination, which ultimately confirmed the diagnosis in all cases. Furthermore, the severity of mucosal damage evaluated using the Modified Marsh classification did not differ significantly between the groups, suggesting that the need for additional biopsies was not due to milder disease.

Serological testing revealed that anti-EMA results differed between the two groups. Individuals who required a second endoscopy were more likely to have negative or weakly positive anti-EMA results. This association was statistically significant. Additionally, there was a tendency for patients in Group 2 to have lower anti-tTG IgA levels compared with those diagnosed after a single procedure, although this difference did not reach statistical significance.

6. Discussion and Conclusion

The findings of this study suggest that strong anti-EMA positivity is associated with a higher likelihood of obtaining a definitive histological diagnosis when the standard protocol of four duodenal biopsies is followed during endoscopy.

More importantly, patients with negative or low anti-EMA results, particularly when anti-tTG IgA levels remain elevated, may require a larger number of biopsy samples to confirm the diagnosis of coeliac disease. Collecting additional tissue samples during the first endoscopy could therefore reduce the need for repeat procedures.

In the present study, all patients who required a second endoscopy were successfully diagnosed after six biopsy samples were obtained. Although the number of cases in this subgroup was small, the findings suggest that taking more than the recommended four biopsies may improve diagnostic accuracy in certain patients.

This research is among the first to explore the relationship between serological markers and biopsy sampling strategies in individuals suspected of coeliac disease. While anti-tTG IgA testing is widely used due to its high sensitivity, the ability of anti-EMA results to predict patients requiring additional biopsies highlights the importance of including this test in the diagnostic work-up.

However, the study has certain limitations, including its retrospective design and the relatively small number of patients requiring repeat endoscopy. Larger studies are needed to confirm these findings and to determine the optimal number of biopsy samples required in such cases.

Overall, patients with strong clinical suspicion of coeliac disease or significantly elevated anti-tTG IgA levels should still be considered for repeat endoscopic evaluation if the initial biopsy samples do not demonstrate typical mucosal abnormalities, regardless of anti-EMA results.

INSIGHT JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY

References

1. Ciclitira PJ, Dewar DH, McLaughlin SD, Sanders DS. The Management of Adults with Coeliac Disease. British Society of Gastroenterology. 2010.
2. Rubio-Tapia A, Hill ID, Kelly CP, Calderwood AH, Murray JA. American College of Gastroenterology. ACG clinical guidelines: diagnosis and management of celiac disease. Am J Gastroenterol. 2013; 108: 656-676.
3. Gonzalez S, Gupta A, Cheng J, Tennyson C, Lewis SK, Bhagat G, et al. Prospective study of the role of duodenal bulb biopsies in the diagnosis of celiac disease. Gastrointest Endosc. 2010; 72: 758-765.
4. Abrams JA, Diamond B, Rotterdam H, Green PH. Seronegative celiac disease: increased prevalence with lesser degrees of villous atrophy. Dig Dis Sci. 2004; 49: 546-550