Higher Prevalence of Celiac Disease in the Microscopic Colitis Population: Results From a Large Pathology Database

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Background

- Microscopic colitis (MC) refers to two medical conditions which cause chronic diarrhea: collagenous colitis (CC) and lymphocytic colitis (LC).
- Previous studies have reported an increased prevalence of microscopic colitis in the celiac disease population. However, these studies were limited by small numbers or specialty referral populations.
- Further characterization of the patients who harbor both MC and celiac disease is needed.

Aims

- The aims of this study were the following:
  1. To determine the association between MC and celiac disease.
  2. To compare the demographic and clinical characteristics of patients with MC and celiac to those of patients with MC alone.

Methods

- Miraca Life Sciences, Inc. (Irving, Texas) is a nationwide pathology laboratory that receives specimens submitted by approximately 1,500 gastroenterologists distributed throughout the United States.
- From the electronic database of Miraca Life Sciences we extracted 1,163 patients with MC and celiac sprue vs. MC alone. Of these, 4,417 had MC (2,266 with CC and 2,151 with LC).
- The mean age of the MC population was 61.9, with a female: male ratio of 3.83:1.
- Celiac sprue was diagnosed in 1,113 patients, of whom 116 also had microscopic colitis (Table 1).
- Compared to controls without MC, there was a greater association of celiac sprue in patients with all forms of microscopic colitis (Table 2).
- In patients with MC and celiac sprue vs. MC alone, average age was 54.0 vs. 61.9 (p=0.0001) with a similar female: male predominance (ratio 4.04:1).
- Of the 116 subjects with MC and celiac sprue, microscopic colitis was diagnosed before celiac sprue in 32 (28%) of cases, simultaneously in 58 (50%), and after celiac sprue in 26 (22%).

Results

- There were 156,399 patients who had a colonoscopy and upper endoscopy with both duodenal and random colon biopsies during the study period.
- Of these, 4,417 had MC (2,266 with CC and 2,151 with LC).
- The mean age of the MC population was 61.9, with a female: male ratio of 3.83:1.
- Celiac sprue was diagnosed in 1,113 patients, of whom 116 also had microscopic colitis (Table 1).

Table 1 – Distribution of Celiac Disease and Microscopic Colitis by Age and Gender Among 156,399 Patients with Duodenal and Colon Biopsies.

<table>
<thead>
<tr>
<th>Gender (all ages)</th>
<th>Total Cases</th>
<th>LC</th>
<th>CC</th>
<th>Celiac + LC</th>
<th>Celiac + CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male (n=900)</td>
<td>300 (33.3)</td>
<td>52 (24.3)</td>
<td>248 (94.4)</td>
<td>292 (78.0)</td>
<td>62 (17.0)</td>
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<td>Female (n=663)</td>
<td>270 (40.6)</td>
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Table 2 – Association between microscopic colitis and celiac disease compared to controls without MC. (Abbreviations: CI, confidence interval; OR, odds ratio)

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<th>Type</th>
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<th>Female (%)</th>
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<td>Microscopic colitis</td>
<td>3.09 (2.40-5.00)</td>
<td>3.34 (2.27-4.87)</td>
<td>3.14 (2.40-4.00)</td>
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<tr>
<td>Collagenous colitis</td>
<td>4.60 (2.74-7.84)</td>
<td>4.79 (2.87-8.01)</td>
<td>4.60 (2.87-4.04)</td>
</tr>
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<td>Lymphocytic colitis</td>
<td>3.13 (1.70-5.72)</td>
<td>3.27 (1.99-6.01)</td>
<td>3.13 (1.66-6.08)</td>
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Study Highlights

- In a large nationwide pathology database, we found an increased association of microscopic colitis and celiac disease.
- Patients with both celiac disease and microscopic colitis were younger than patients with microscopic colitis alone.
- Such association could reflect on a shared set of risk factors or a common pathophysiology.

References


Duodenal mucosa with flattened villi and a dense lymphocytic infiltration, from a patient with celiac disease (A). Colonic biopsy from the same patient showing lymphocytic colitis (B), confirmed by the high density of CD3-positive intraepithelial lymphocytes, shown in panel C.