Endoscopic biopsy samples of naïve “colitides” patients: Role of basal plasmacytosis

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Background

The histological diagnosis of IBD is based on the analysis of poorly specific lesions because it’s a reaction/repair processes secondary to inflammatory damage, relatively generic, especially in the early stages of the disease.

The pathological assessment must never be performed in isolation because further clinical, radiological or endoscopic information will often clarify the diagnosis of either Crohn’s disease or ulcerative colitis in the absence of definitive differential histopathological features on biopsy.

Geboes K et al, Clin Pathol 2009
European consensus on the histopathology of inflammatory bowel disease☆

F. Magro a, a, 1, C. Langner b, 1, A. Driessen c, A. Ensari d, K. Geboes e, G.J. Mantzaris f, V. Villanacci g, G. Becheanu h, P. Borrinho Nunes i, G. Cathomas j, W. Fries k, A. Jouret-Mourin l, C. Mescoli m, G. de Petris n, C.A. Rubio o, N.A. Shepherd p, M. Vieth q, R. Eliakim r on behalf of the European Society of Pathology (ESP) and the European Crohn's and Colitis Organisation (ECCO)
A diagnosis of established ulcerative colitis is based upon the combination of:

A) Basal Plasmacytosis (BP)
B) Heavy Diffuse Transmucosal Lamina Propria Cell Increase
C) Crypt Architectural Distortion

Background
Basal plasmacytosis (BP) is defined as the presence of plasma cells between the base of the crypts and the muscularis mucosae.
Background

A) Focal (discontinuos) chronic (lymphocytes and plasma cells) inflammation

B) Patchy chronic inflammation, focal crypt irregularity (discontinuous crypt distortion)

C) Granulomas (not related to crypt injury) are the generally accepted macroscopic features that permit a diagnosis of CD
"The strongest predictor of IBD was basal plasmacytosis [...] The presence of focal basal plasmacytosis seems to be the earliest sign of IBD"
Purposes of the study

A) Investigate the presence of BP

B) Establish its value as an individual variable in endoscopic biopsies from firstly diagnosed, non-treated “colitis” patients
**Materials and Methods**

### STUDY GROUP

- Archival slides: January 2005-2012
- Endoscopic procedures within four weeks from the onset of symptoms (diarrhea with or without presence of blood)
- Patients free from any treatment
- Complete histologic ileo-colonic mapping (terminal ileum, cecum and ascending colon, transverse colon, descending colon, sigmoid colon and rectum) for “colitis”
- At least two biopsies for each anatomical segment

### CONTROL GROUP

- Patients investigated for painless diarrhea
- Complete histological mapping
- Final diagnosis: *functional diarrhea* or *lactose malabsorption*
Materials and Methods

BP: at least three plasma cells around or below the crypts, alongside or penetrating the muscularis mucosae

Results

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographic variables of IBD and non-IBD patients.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
</tr>
<tr>
<td>IBD</td>
<td>66</td>
</tr>
<tr>
<td>UC</td>
<td>31</td>
</tr>
<tr>
<td>CD</td>
<td>35</td>
</tr>
<tr>
<td>Non-IBD</td>
<td>49</td>
</tr>
<tr>
<td>Controls</td>
<td>20</td>
</tr>
</tbody>
</table>
## Results

**Table 2**: Presence of basal plasmacytosis in the various groups.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Basal plasmacytosis</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absent</td>
<td>Present</td>
<td>Total</td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td>0</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Crohn’s disease</td>
<td>0</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Collagenous colitis</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Eosinophilic colitis</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Infectious colitis</td>
<td>16</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Lymphocytic colitis</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Pseudomembranous col</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Radiation colitis</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Diverticular colitis</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Ischemic colitis</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Controls</td>
<td>18</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>57</td>
<td>78</td>
<td>135</td>
</tr>
</tbody>
</table>

100%  

9%
Results

The presence of BP was always accompanied by at least one – three eosinophils intermingled with plasma cells in the same anatomical position.

This feature was not present in cases where basal plasmacytosis was absent.
The presence of BP as a single histological feature, at least in one colonic segment, is highly suggestive of IBD in patients with newly diagnosed “colitis” and no previous treatment.

The probability of IBD diagnosis dramatically increases with the number of segments positive for the presence of BP.

Strict association of basal plasma cells with one–three eosinophils, a feature only present in patients with BP.
The role of eosinophils in inflammatory bowel disease

S Al-Haddad, R H Riddell

Numbers of activated eosinophils are higher in patients with active and inactive ulcerative colitis (UC) compared with controls, but higher in the quiescent than in the active phase, indicating that eosinophils may play diverse roles in the pathophysiology of inflammatory bowel disease (proinflammatory versus repair).
In the future the answer !!!
Thanks for your attention !!!