Abstract

TITLE: A simplified histological Geboes Score for ulcerative colitis.

AUTHORS (LAST NAME, FIRST NAME): Jauregui-Amezaga, Aranzazu[1]; De Hertogh, Gert[2]; Bessissow, Talat[4]; Lemmens, Bart[2]; Lobatón, Triana[3]; Ferrante, Marc[1]; Bisschops, Raf[1]; Van Assche, Gert A.[1]; Vermeire, Severine[1]; Geboes, Karel[2]

INSTITUTIONS (ALL):

1. Gastroenterology - Translational Research Center for Gastrointestinal Disorders (TARGID), University Hospitals Leuven, Leuven, Belgium.
2. Pathology, University Hospitals Leuven, Leuven, Belgium.
3. Gastroenterology, Hospital Universitari Germans Trias i Pujol, Badalona, Spain.
4. Gastroenterology, Mc Gill University Health Center, Montreal, QC, Canada.

ABSTRACT BODY:

Abstract Body: Background: The current goal of medical treatment in ulcerative colitis (UC) is to achieve mucosal healing assessed by endoscopic examination. However, the presence of histological activity in patients with both clinical and endoscopic quiescent UC has been related to a higher risk of relapse. Although none of the numerous histological scores for UC has been validated, Geboes Score has been the most used in clinical trials, but the complexity of the score complicates its applicability in clinical practice (Geboes, Gut 2000). As it was previously developed to assess the effect of topical therapy, some aspects have become redundant in the era of biologicals. We therefore aimed to create a Simplified Geboes Score (SGS) and determine its accuracy to predict UC relapse. Methods: Only variables linked to active inflammatory activity were taken from the original Geboes Score: neutrophils/eosinophils in the lamina propria and neutrophils in the epithelium were reduced to 3 subcategories, and epithelial injury at crypts and surface was combined into one category. Additionally, basal plasmacytosis was included as a scoring variable (Bitton, Gastroent 2001) (see Table). All histological slides from a previous study (Bessissow, Am J Gastroenterol 2012) evaluating UC patients with complete mucosal healing (Mayo Endoscopic Subscore 0) were then re-read by two independent readers. UC relapse (clinical Mayo Score ≥3) was recorded in these patients over a 12-month follow-up period. Results: Seventy-five UC patients (40 men, median age 40 years) with endoscopic healing were included. Histological activity was observed in 33/75 (44%) patients: 17 (23%) presented basal plasmacytosis (SGS grade 1), in 7/75 (9%) eosinophils (SGS grade 2A) were observed and in 8/75 (11%) neutrophils (SGS grade 2B) were identified in the lamina propria. Crypts were involved in 13/75 (17%) cases (SGS grade 3) and epithelial injury (SGS grade 4) was diagnosed in 18/75 (24%) patients. During follow-up 15 patients (20%) experienced a clinical relapse, and histological activity at baseline was observed in 10 of these (67%). Basal plasmacytosis (SGS grade 1, p=0.004) and epithelial injury (SGS grade 4, p=0.02) were significantly associated with UC relapse (see Table) and identified as predictors of relapse in univariate regression analysis (SGS grade 1: OR 6.5 [1.9-22], p=0.003; SGS grade 4: OR 5.7 [1.7-19], p=0.005). After multivariate regression analysis, only epithelial injury was withheld as a UC relapse predictor (OR 6.9 [1.9-24], p=0.003. Conclusion: 67% of UC patients in endoscopic remission still showed histologic activity. We simplified the histological Geboes score and demonstrate that epithelial injury is a significant risk factor for relapse in these patients. Further studies should now be designed to validate this score.

(no table selected)

Simplified Geboes Score			
	Relapse	**Non-relapse**	**P value**
<u>Grade 1: Basal plasma cells</u>			**0.004**
1.0 No increase	7 (12%)	51 (88%)	
1.1 Mild increase	5 (56%)	4 (44%)	
1.2 Marked increase	3 (37%)	5 (63%)	
<u>Grade 2: Lamina propria neutrophils and eosinophils</u>			
<u>Eosinophils</u>			0.09
2A.0 No increase	12 (18%)	56 (82%)	
2A.1 Mild increase	2 (33%	4 (67%)	
2A.2 Marked increase	1 (100%)	0 (0%)	
<u>Neutrophils</u>			0.12
2B.0 No increase	13 (19%)	54 (81%)	
2B.1 Mild increase	1 (14%)	6 (86%)	
2B.2 Marked increase	1 (100%)	0 (0%)	
<u>Grade 3: Neutrophils in the epithelium</u>			0.17
3.0 None	10 (16%)	52 (84%)	
3.1 <50% crypts involved	4 (36%)	7 (64%)	
3.2 >50% crypts involved	1 (50%)	1 (50%)	
<u>Grade 4: Epithelial injury</u>			**0.02**
4.0 None	7 (12%)	50 (88%)	
4.1 Marked attenuation	1 (33%)	2 (67%)	
4.2 Probable destruction – Probable erosions	1 (25%)	3 (75%)	
4.3 Unequivocal crypt destruction – Unequivocal erosion	4 (67%)	2 (33%)	
4.4 Ulcer or granulation tissue	2 (40%)	3 (60%)	
Total Simplified Geboes Score			0.11
1.0	5 (12%)	37 (88%)	
1.1	0 (0%)	2 (100%)	
1.2	0 (0%)	3 (100%)	
2A.1	1 (50%)	1 (50%)	
2A.2	0	0	
2B.1	0 (0%)	3 (100%)	
2B.2	0	0	
3.1	1 (25%)	3 (75%)	
3.2	0	0	
4.1	1 (25%)	3 (75%)	
4.2	1 (25%)	3 (75%)	
4.3	4 (77%)	2 (23%)	
4.4	2 (40%)	3 (60%)	

Table: Proposed Simplified Geboes Score.

Disclosure Status

The following authors have completed their 2015 DDW disclosure:: Aranzazu Jauregui-Amezaga: Disclosure completed | Gert De Hertogh: No Answer. | Talat Bessissow: No Answer. | Bart Lemmens: Disclosure completed | Triana Lobatón: No Answer. | Marc Ferrante: Disclosure completed | Raf Bisschops: No Answer. | Gert Van Assche: Disclosure completed | Severine Vermeire: Disclosure completed | Karel Geboes: Disclosure completed