

## Tu1105 Development of the Crohn's Disease (CD) Digestive Damage Score: The L mann Score

Benjamin Pariente, Jean-Yves Mary, Jean-Frederic Colombel, Jacques Cosnes

**BACKGROUND:** CD is a chronic progressive destructive disease leading to accumulation of bowel damage over time. Currently available indices measure disease activity at a specific point in time and not bowel damage. We here report the development of the first instrument to measure cumulative structural bowel damage in CD: the L mann score.

**METHODOLOGY:** 24 centres from 15 countries were involved in a cross-sectional study. In each centre 10 patients stratified by disease location (upper digestive tract [UT]; small bowel [SB]; colon and rectum [CR]; anus [AN]) and duration (<2; 2-10; >10 years) were evaluated using clinical examination, magnetic resonance imaging (MRI), CT-scan if available and endoscopy performed within a maximum of 4 months. For each patient, the digestive tract was divided into 4 organs (UT, SB, CR, AN) and each organ into segments (3 for UT; 20 of 20-cm for SB; 6 for CR; 1 for AN). For each segment, information about previous surgery and presence of stricturing ( $\geq$  or <5 cm) and/or penetrating lesions ranked per grade of severity was recorded. Lesions and grades were predefined. A segmental score ranging from 0 (no lesion) to 10 (complete resection of the segment) was given taking into account the presence and severity of lesions. An organ score was then calculated by adding all segmental scores. Finally, a global score was given by the investigators taking into account the damage observed in the 4 organs. A multiple linear regression model was used to construct the L mann score per organ as a function of the number of segments involved by each type of lesion of each grade of severity (and length for stricture) showing the highest correlation R with the investigator's organ score.

**RESULTS:** 138 patients from 12 centres were included (>7 patients in each centre and 2 centres with twice 10 patients). The respective number of patients and segments involved in the construction of the L mann score was 24 and 72 for UT, 115 and 1725 for SB, 92 and 500 for CR, 59 and 59 for AN. Table 1 shows the number of patients with suspected or demonstrated organ damage and the organ score distributions in these patients. For SB and CR, median organ scores significantly increased with duration of the disease. R<sup>2</sup>, i.e. proportion of the variance of the reported organ score explained by the corresponding L mann score, were 0.765, 0.905, 0.831 and 0.697 for UT, SB, CR and AN, respectively.

**CONCLUSION:** The L mann score should be the instrument of choice for further clinical trials looking at blockade of damage progression in CD.

Organ	Number of patients with organ damaged	Organ score (median)	Organ score (ranges)
UDT	24	0.75	0.06-1.50
SB	118	0.73	0.22-1.37
CR	105	1.57	0.71-2.79
AN	59	3	2.00-5.00