

### BACKGROUND

Intravenous steroids remain the standard first line treatment for patients with acute ulcerative colitis (UC). However, 30% of patients fail to respond and require second line therapies and/or surgery. The purpose of this study was to determine whether day 1 parameters could identify a group at high risk of failure of first line therapies.

### METHODS

- All admissions for acute UC (ICD-10 K51) to hospitals within NHS Lothian (4 sites) from 1<sup>st</sup> November 2015 to 31<sup>st</sup> October 2016 were obtained from the regional coding department
- Inclusion was limited to patients with UC as the primary reason for admission
- Case record review confirmed diagnosis and clinical data were collected
- Response to steroids was defined as discharge from hospital with no further acute medical or surgical treatment
- The following parameters were recorded up to the first 10 days post admission: haemoglobin, platelet count, CRP, albumin, stool frequency, faecal calprotectin and abdominal x-ray results
- Each patient was later attributed a score based on CRP (<50 mg/dL = 0; >50 mg/dL = 1), albumin (>30 g/L = 0; <30 g/L = 1) and platelets (<450x10<sup>9</sup>/L = 0; >450x10<sup>9</sup>/L = 1)

Figure 1: Patient scoring - based on CRP, albumin and platelet results

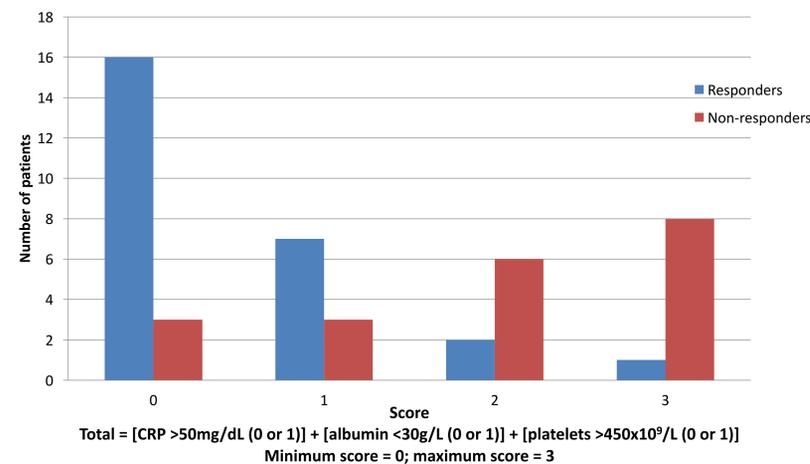


Table 1: Day one results

	Platelets (x10 <sup>9</sup> /L)		CRP (mg/dL)		Albumin (g/L)	
	Responders (n = 36)	Non-responders (n = 23)	Responders (n = 32)	Non-responders (n = 22)	Responders (n = 27)	Non-responders (n = 23)
Median	342	464	25	78	34	27
Interquartile range	107 (291-398)	172 (345-517)	45 (9-54)	131 (44-175)	5 (31-36)	9 (24-33)

Table 2: Patient scoring - based on CRP, albumin and platelet results

Total score	Number of patients	Responders (%)	Non-responders (%)
0 - 1	29	23 (79.3)	6 (20.7)
2 - 3	17	3 (17.6)	14 (82.4)

Total = [CRP >50mg/dL (0 or 1)] + [albumin <30g/L (0 or 1)] + [platelets >450 x 10<sup>9</sup>/L (0 or 1)] Minimum score = 0; maximum score = 3

Figure 2: Sensitivity and specificity of scoring in predicting non-response to medical therapy

**SENSITIVITY**  
70.00%

**SPECIFICITY**  
88.46%

### RESULTS

- From 1<sup>st</sup> November 2015 to 31<sup>st</sup> October 2016 61 admissions with acute UC were identified
- 37 (60%) of which responded to steroids, 24 (40%) patients were non-responders
- 3 (12.5%) non-responders received infliximab as second line therapy, 1 (4.2%) adalimumab and 20 (83.3%) ciclosporin
- 11 (45.8%) of the non-responders required surgery, 100% of whom had been previously treated with ciclosporin
- On univariate analysis, the albumin, platelet count and CRP differed significantly between responders and non-responders (p<0.05)
- But on multivariate analysis only CRP and albumin were significant
- No difference was seen for haemoglobin and stool frequency
- 88.9% of patients with concurrent hypoalbuminaemia, high CRP and high platelets (score = 3) were non-responders

### CONCLUSION

82.4% of patients with a score of 2 or more will fail first line medical therapy. The combination of these readily available parameters identifies a high risk population who may benefit from earlier second line medical or surgical intervention.