

Calprotectin and Inflammatory Bowel Diseases (IBD)

Isle of Wight Experience

Al-Bahrani A¹, Domanski A², Sheen C², Tracey C¹, Grellier L²
Department of Chemical Pathology¹ and Gastro-entology². St Mary's Hospital, Isle of Wight PO30 5TG

Introduction

The incidences of inflammatory bowel disease (IBD)¹ have increased in both adults and children.

In the majority of cases there are no pathognomonic signs or symptoms and endoscopic evaluation with histological finding are considered as the gold standard tools for diagnosing IBD.

The aim of this survey was to identify low risk patients with IBS that would reduce the unnecessary invasive procedures and prioritize patients with a high suspicion of inflammatory bowel diseases by using faecal calprotectin.

Calprotectin is a 36kDa calcium and zinc binding protein that has antimicrobial and antiproliferative effects. It is present in high concentrations in neutrophils and accounts for 60% of the cytosol protein. Calprotectin is released extracellularly during neutrophil activation and death and can therefore be used as a surrogate marker in IBD.

Calprotectin is resistant to proteolysis and is stable for seven days making it ideal for outpatient testing.

Methods

A retrospective study of 51 patients.
<45 years of age.

Referred from Primary Care with a potential diagnosis of IBD.

Faecal calprotectin taken and then collated with colonoscopy and histological findings.

Discussion

Our findings demonstrate that higher levels of Calprotectin are associated with an increased incidence of Inflammatory Bowel Disease.

Our study has demonstrated a negative predictive value of 94% and a sensitivity of 92%.

Results

Out of 52 patients surveyed:

- 25 (48%) had a Calprotectin level <30µg/g
- Colonoscopy and histology on 18
- Colitis was only reported in one patient (4%)

- 8 (15%) had an equivocal Calprotectin level between 40-60 µg/g.
- 2 patients underwent colonoscopy and had colitis reported on biopsies but endoscopic appearances were normal.

- 11(21%) had a Calprotectin level between 60-300 µg/g
- 7 (63%) patients underwent colonoscopy and had evidence of colitis

- 8 (15%) had a Calprotectin level greater than 300 µg/g.
- 5 underwent colonoscopy and all had evidence of colitis.

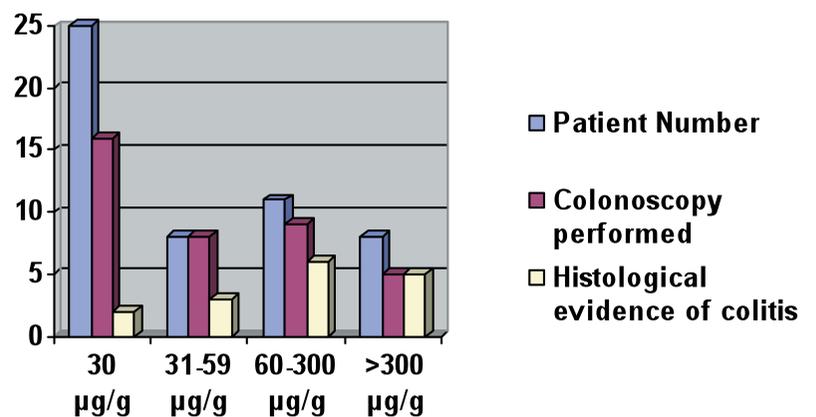


Figure 1: Calprotectin levels versus numbers of patients with colitis demonstrated histologically.

Conclusion

Calprotectin is a useful marker in ruling out IBD and stratifying patients with suspected IBD that require further investigation and rapid access for endoscopy.

¹Frontline Gastroenterology 2011;2:13–18.
doi:10.1136/fg.2010.001362