



POSTER PRESENTATION

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# Fecal S100A12 levels measured by a new ELISA are increased in ulcerative colitis (UC) and Crohn's disease (CD) and correlates with intestinal damage

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## Introduction

Inflammatory bowel diseases (IBDs) are characterized by inflammation and intestinal damage. The S100 proteins S100A8/A9 and S100A12 have been suggested to be useful for assessing disease activity and monitor treatment efficacy. S100A8/A9 is produced by granulocytes, monocytes and macrophages whereas S100A12 expression is restricted to granulocytes and may thus be more specific.

## Aim

To develop an ELISA for fecal S100A12 and investigate its utility for the clinical investigation of patients with UC and CD.

## Patients and methods

The ELISA (Inflamark™, Cisbio bioassays) is based on 2 monoclonal antibodies raised against recombinant human S100A12. After stool extraction, S100A12 was measured in UC (n=30), CD (n=30) and healthy (n=30) subjects. Fecal S100A12 was correlated with the endoscopic Mayo score in subjects with UC and data were compared to fecal S100A8/A9.

## Results

Western blotting showed that the two antibodies selected for the ELISA recognized both recombinant and purified native human S100A12 and did not cross-react with S100A8/A9. Intra and inter assay precision errors were below 10%. Fecal S100A12 levels were significantly higher in UC (median: 167 µg/g stool,  $p < 0.0001$ ) and CD (median 14 µg/g stool,  $p < 0.0001$ )

patients than in healthy controls (median: 0), with a corresponding area under the ROC of 0.83 ( $p < 0.0001$ ) and 0.71 ( $p < 0.0001$ ), in UC and CD, respectively. In patients with UC, fecal S100A12 correlated with the endoscopic Mayo score ( $r = 0.48$ ,  $p = 0.0067$ ) and levels were on average 24 fold higher in subjects presenting with active (n=16, Mayo score 2-3) than in patients with inactive (n=14, Mayo score 0-1) disease. The difference between active and non-active UC patients was lower (5.2 fold) for S100A8/9 than for S100A12 and did not reach statistical significance ( $p = 0.067$ ).

## Conclusions

The new ELISA for fecal S100A12 is precise and could detect increased inflammatory activity in patients with UC and CD. Measurements of fecal S100A12 should be useful for the non-invasive assessment of intestinal damage in patients with IBDs.

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