

# New Fecal Biomarker, $\alpha$ 1-acid Glycoprotein, for Evaluation of Inflammatory Bowel Disease: Comparison with Calprotectin and Lactoferrin

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## Abstract

**Objective:** Fecal leukocytes biomarkers such as calprotectin (Cal) and lactoferrin (LF) have been shown to reflect the disease activity of inflammatory bowel disease (IBD). Here, we evaluated fecal  $\alpha$ 1-acid glycoprotein (AG), acute-phase reactant protein, as a new fecal biomarker.

**Methods:** Thirty six patients with ulcerative colitis (UC) and Crohn's disease (CD) were analyzed. Active or inactive conditions determined to clinical activity index (CAI), Mayo endoscopic subscore and Matts' histopathological grade in UC, while by Crohn's disease activity index (CDAI) and simple endoscopic score for Crohn's disease in CD. The fecal levels of biomarkers were measured by enzyme-linked immunosorbent assay.

**Results:** All three fecal biomarkers were significantly higher in the CAI active than in the inactive group, but not in the CDAI active compared with the inactive group. These biomarkers were significantly elevated in endoscopically active compared to the inactive UC and CD, respectively. These biomarkers were also significantly higher in the histologically active than in the inactive UC.

**Conclusions:** Fecal biomarkers, AG as well as Cal and LF, could differentiate active from inactive UC and CD. Our results strongly suggest that the fecal AG may be valuable noninvasive diagnostic tools for evaluation of the activity of IBD.

**Key words:** Fecal  $\alpha$ 1-acid glycoprotein, Calprotectin, Lactoferrin, Inflammatory bowel disease