

Comparison of Fecal Calprotectin Level in Inflammatory Bowel Disease and Irritable Bowel Syndrome

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ABSTRACT

Background: Fecal calprotectin (FC) has been suggested as a noninvasive substitute marker to determine the degree of intestinal inflammation in patients with inflammatory bowel disease (IBD). The aim of this study was to compare FC levels in IBD and irritable bowel syndrome (IBS), to show its discriminative value and relationship with clinical disease activity in patients with IBD.

Materials and Methods: During the time period between May 2008 and November 2009, 41 patients with newly diagnosed or relapse of IBD and 40 patients with IBS who referred to Gastroenterology Clinic of Firoozgar Hospital, Tehran, Iran, were selected in a consecutive random manner. A sample of stool was collected from each patient before colonoscopy, and fecal calprotectin levels were measured using an ELISA kit (Buhlmann Co., Switzerland). Differences in FC levels were considered statistically significant where $p < 0.05$.

Results: Mean calprotectin level in IBD cases (newly diagnosed and relapse) was $193.57 \pm 147.79 \mu\text{g}/\text{gr}$, which was significantly higher than those in IBS cases ($28.25 \pm 15.13 \mu\text{g}/\text{gr}$) and the difference was statistically significant ($p < 0.001$).

Conclusion: FC levels can be used to differentiate patients with IBD from those with non-inflammatory gastrointestinal disorders such as IBS and can be used as a screening tool for selection of patients who need colonoscopy.

Keywords: Calprotectin, Inflammatory bowel disease, Irritable bowel syndrome.

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INTRODUCTION

Inflammatory bowel disease (IBD) is a chronic condition characterized by recurrent episodes of inflammation in the gastrointestinal tract and includes crohn's disease (CD) and ulcerative colitis (UC). Patients with IBD experience diarrhea, abdominal pain and cramps, disrupted

digestion, rectal bleeding, weight loss and a substantial personal burden (1-2). The precise etiology of IBD is remained mainly unknown but is thought to be a complex interaction of immunological, genetic and environmental (such as enteric microflora) factors (3-4). Interrelated with IBD is irritable bowel syndrome (IBS), one of the most common gastrointestinal disorders seen in primary health care (5). It is characterized as a functional bowel disorder wherein discomfort or abdominal pain is related with defecation or a change in bowel habit and with features of disordered defecation (6). Several studies

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