

STUDY OF FECAL CALPROTECTIN AS A NON-INVASIVE MARKER ASSOCIATED WITH DISEASE ACTIVITY IN CHRONIC GASTRITIS ADULT PATIENTS

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Introduction

Chronic gastritis is the most common finding at endoscopy in the general population of Eastern countries. It’s an inflammatory process characterized by variable inflammatory cellular infiltrate in the lamina propria, and within the foveolar lumen. Its clinical significance is under estimated although its role in occurrence of peptic ulcer disease and gastric adenocarcinoma is very clear. Helicobacter pylori infection is the most common cause of chronic active gastritis worldwide. The gold standard method for diagnosis of chronic gastritis, especially H.pylori infection related type, is endoscopy with histopathological evaluation of gastric biopsies. Fecal calprotectin is a well established biomarker for gastrointestinal inflammation. It is commonly used to differentiate between irritable bowel syndrome and IBD. The level of calprotectin in fecal matter is quantitatively related to the rate of neutrophil migration into gastrointetstinal wall. There are very few studies that investigated the relation between fecal calprotectin and upper gastrointestinal diseases including chronic gastritis.

Aim of the work

The aim of our study was to measure fecal calprotectin levels in patients with chronic gastritis and correlate those levels with gastritis activity score according to the updated Sydney System for gastritis grading and classification.

Patients and Methods

A pilot study was performed . A total of 55 individuals who were indicated for EGD and colonoscopy due to different causes {dyspepsia, epigastric pain, nausea &vomiting, hematemasis or melena, chronic diarrhea, chronic constipation} participated in the study. 40 subjects had histological diagnosis of chronic gastritis and those were enrolled in group I “cases group”. 15 subjects had normal upper endoscopy and biopsy specimens and those were enrolled in group II “control group”. All study population had normal colonoscopy with normal ileocolonosopic biopsies. Gastric biopsy specimens were assessed according to the updated Sydney System for gastritis grading and classification. Fecal calprotectin (Fclp) level was measured in all study population by quantitative chemiluminescent immunoassay.

Results

In group I “cases” fecal calprotectin was positive (>120 mg/kg) in 85% of patients with mean fecal calprotectin of 153.48 ± 48.74 mg/kg , indeterminate (50-120 mg/kg) in 4 patients and negative (< 50 mg/kg) in 2 patients. In group II “ control” FC was negative in 12 subjects and indeterminate in 3 subjects with a mean of 37.87 ± 20.67 mg/kg. FC was statistically significant higher in group I than in group II (P<0.001). This is shown in figure 1.

There was a positive correlation between fecal calprotectin and chronic gastritis, neutrophil infiltration (activity) and Helicobacter pylori density according to sydney classification in group I (rs= 0.743, 0.890, 0.860 respectively) with p value (<0.001) for all three parameters .THIS IS SHOWN IN Table 1 and figure 2.

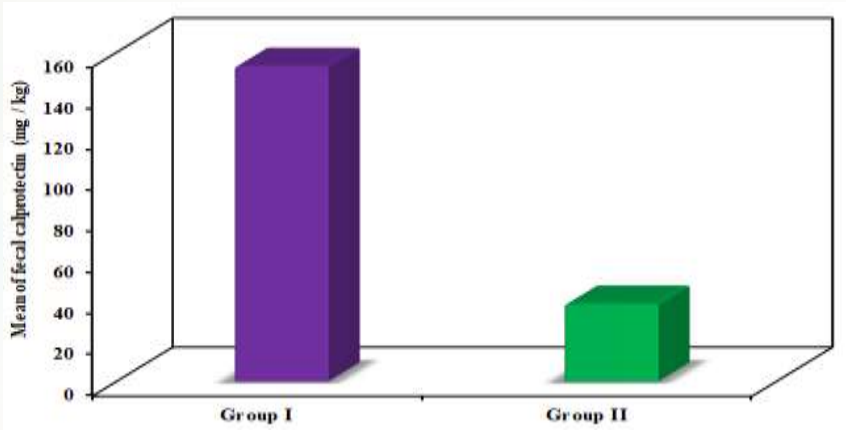


Figure 1: Comparison between the two studied groups according to mean of fecal calprotectin

Table 1: Correlation between Fecal calprotectin with chronic inflammation, Activity (neutrophil infiltration) and Helicobacter pylori density in group I (n = 40)

	Fecal calprotectin (mg / kg)	
	rs	p
Chronic inflammation	0.743*	<0.001*
Activity (neutrophil infiltration)	0.890*	<0.001*
Helicobacter pylori density	0.860*	<0.001*

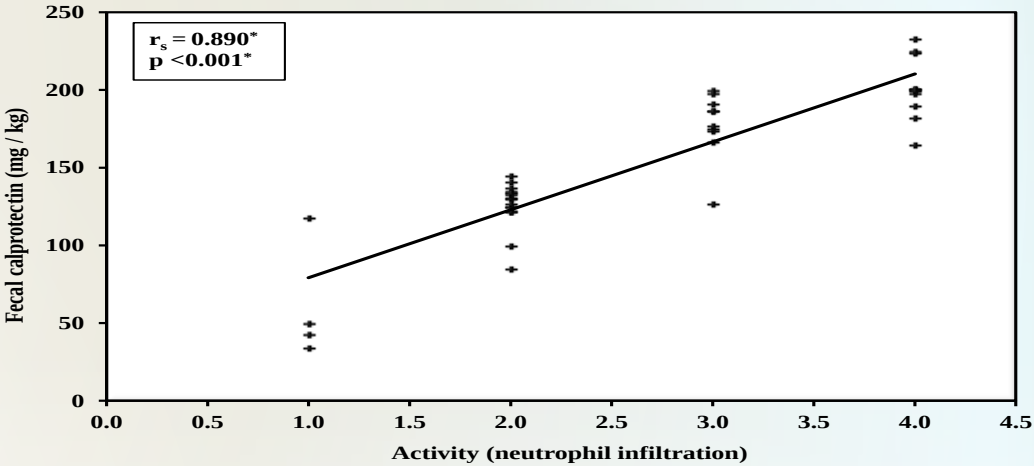


Figure 2: Correlation between Fecal calprotectin with Activity (neutrophil infiltration) in group I (n = 40)

Conclusion

Fecal calprotectin level was significantly higher in chronic gastritis patients than in healthy individual. It was statistically significant related to chronic inflammation , and activity “ neutrophilic infiltration” in biopsy specimens according to Sydney classification. There was a positive correlation between FC and Helicobacter pylori density in biopsy specimens. Fecal calprotectin represents gastric neutrophilic inflammation. Helicobacter pylori infection should be kept in mind during analysis of high fecal calprotectin levels. Further studies in a larger study group are needed in order to be able to use FC as a screening tool for chronic gastritis.