

# HIGH PREVALENCE OF ELEVATED FECAL CALPROTECTIN IN STOOL SAMPLES FROM PATIENTS WITH DIVERTICULAR DISEASE

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## BACKGROUND and AIMS

An interesting role has been reported for fecal calprotectin in diverticular disease. It seems to significantly correlate with the inflammatory infiltrate and might even predict the recurrence of colonic diverticulitis.

As information about fecal calprotectin in colonic diverticular disease is interesting but relatively rare, the present study assessed fecal calprotectin levels in a large cohort of patients with diverticular disease and compared it with other colonic disease conditions as well as routinely used GI markers such as fecal occult blood (FOB).

## METHODS

In a retrospective analysis stool samples, which were obtained from 553 randomly selected hospitalised patients undergoing endoscopy, were analysed for calprotectin and occult blood. The patient characteristics documented on the endoscopy report were the following: 102 pts. with diverticular disease, 15 pts. with adenoma, 4 pts. with carcinoma, 10 pts. with inflammatory bowel disease (IBD, 4 x ulcerative colitis, 6 x Crohn's disease) 53 pts. with irritable bowel syndrome (IBS) and 369 pts. without abnormalities (normal).

Stool samples were collected over a period of more than 48 months and were stored at -80°C. Stool samples were analysed by a bedside test termed FD Darm ("Bowel") check professionell triple test (FROST Diagnostika, Otterstadt, Germany), which detects fecal calprotectin, haemoglobin (Hb) and haemoglobin / haptoglobin complex (Hb/Hp complex) based on an immunological test method. Elevated fecal calprotectin levels were defined as a positive test result in the bedside test or by a value >50 mg/g in 2 standard lab assays tested (Calpro ELISA, CalproLab ELISA, Calpro AS Norway). In all cases a positive calprotectin bed site test was accompanied by a positive test result in the calprotectin lab assays and vice versa demonstrating the reliability of the tests.

## RESULTS

In patients with diverticular disease elevated calprotectin levels were evident in 46 % of cases (47 out of 102 pts.), while in the other patient populations studied fecal calprotectin levels were elevated in 4/15 pts. with adenoma, 0/4 pts. with carcinoma, 10/10 IBD pts., 0/53 IBS pts. and in 0/369 healthy controls.

In the 102 patients with diverticular disease a positive FOB test was detectable only in 8 patients, all of these patients had an elevated fecal calprotectin level. Among the 8 FOB positive pts., 4 pts. had a positive test result both in the Hb and Hb/Hp assay, 2 pts. were positive only in one of the assays.

Patients with diverticular disease had calprotectin levels >150 mg/g indicating significant and meaningful colonic inflammation in 28% of all cases (29/102 pts.). In the subpopulation of patients with an elevated fecal calprotectin 61% of the cases had values > 150 mg/g (29/47 pts).

Disease	n	Fecal Calprotectin positive	FOB (Hb, Hb/Hp) positive
Diverticular disease	102	47	8
Colon adenoma	15	4	11
Colon carcinoma	4	0	4
IBD	10	10	7
IBS	53	0	0
Healthy controls	369	0	0

## CONCLUSIONS

In this large study fecal calprotectin levels were elevated in a major portion of patients with diverticular disease, even with a high percentage of patients showing levels >150 mg/g indicating significant inflammation. Therefore fecal calprotectin is a useful biomarker to detect inflammation not only in the course of IBD but also in disease conditions such as diverticulosis.