● ENDOSCOPIC RECURRENCE AFTER OPERATIVE RESECTION IN CROHN'S DISEASE. H. Lochs, W.E. Fleig, M. Mayer, D. Genser, M. Starlinger, and the European Cooperative Crohn's Disease Study VI. Working Group, IV. Medizinische Klinik und Poliklinik, Charité, 10117 Berlin, Germany.

Background: Recent studies showed the prognostic relevance of endoscopic lesions at the anastomosis after surgery in Crohn's disease. For recurrence preventing therapy however, it would be important to know how early such lesions appear and if other parts of the intestine besides the anastomosis are also affected. We therefore performed a prospective study to investigate endoscopic recurrence after resective surgery in Crohn's disease.
Methods: Colonoscopy was performed six weeks after operation in 146 patients. In 118 patients, resections of the terminal ileum were performed. In the other patients, resections of different parts of the colon were performed. Endoscopic changes were graded according to Rutgeerts et al (Gastro. 1990) in Grade 0 - normal, and Grade 1-5 - severity of abnormalities.
Results: Endoscopically normal mucosa (Grade 0) was found in 37% of all patients only. All othesr patients had lesions Grade 1-5. Frequency of lesions was not different according to the site of resection. Location of lesions was: anastomosis 47%, terminal ileum 22%, colon asc. 5%, colon transv. 6%, colon desc.7%, sigma 13%, rectum 14%. The lesions at the anastomosis were graded 1 in 26%, 2 in 11%, 3 in 2%, 4 in 3%, and 5 in 15%.
Conclusion: Our data show that endoscopic recurrence appears very early after surgery in Crohn's disease and involves all parts of the intestine, although the anastomosis is the predominant location. From this data we conclude that maintenance therapy should be started immediately after surgical intervention to be effective.

SMALL BOWEL BACTERIAL OVERGROWTH AFTER GASTRIC SURGERY
G. Lock, S. Hollerbach, H. Linde, W. Vogt, V. Groß, J. Schölmerich, A. Holstege. Depts. of Internal Medicine I & Microbiology, University of Regensburg, 93042 Regensburg, Germany.
Operations of the stomach may predispose to small bowel bacterial overgrowth (SBBO) by altered gastric motility, achlorhydria and diverted small bowel loops. The aim of this study was 1. to investigate frequency and symptoms of SBBO in patients with operated or resected stomachs and 2. to evaluate the role of the glucose H_2 breath test in the diagnosis of SBBO by comparing the results of the breath test with a quantitative microbiological culture of small bowel contents.
Methods: In 21 patients with gastric surgery (16 x subtotal stomach resection with gastrojejunostomy [15] or gastroduodenostomy [1], 1x vagotomy, 1 x Whipple's operation, 1 x gastrectomy, 1 x esophageal resection with stomach dislocation) who were referred for gastroscopy, small bowel content (preferably from the afferent loop or as far distal as possible) was endoscopically aspirated in a sterile technique. The aspirate was immediately cultured on different media, and cultures were analysed for species and quantitative growth. Cultures containing ≥ 10^5 bacteria/ml intestinal juice were considered positive. 14/21 patients were examined with a 50g glucose H_2 breath test within a week of gastroscopy. A rise in H_2 exhalation of > 12 ppm was considered pathological. All patients were asked for possible symptoms of SBBO like diarrhea, bloating or diffuse abdominal pain. Patients who had taken antibiotics within the last 8 weeks were excluded from the study.
Results: 18/21 patients had positive bacterial cultures. The most common species was streptococcus (12x), followed by undefined gram negative bacilli (9x), staphylococci (5x), neisseria species (4x) and E. coli (3x). 8/18 (44%) patients with positive bacterial cultures had symptoms like abdominal pain or diarrhea; however, symptoms were mostly minor and could not necessarily be attributed to SBBO. When compared to bacterial culture, 50g glucose H_2-breath test had a sensitivity of 73% for SBBO (see table).

	Bact. culture < 10^5/ml	Bact. culture ≥ 10^5/ml
H_2 rise < 12 ppm	2	3
H_2 rise > 12 ppm	1	8

Conclusions: After gastric surgery, SBBO occurs in up to 90% of patients with only a minority of patients developing symptoms. Glucose H_2 breath test detects most of the patients with SBBO; if quantitative bacteriological examination is available, however, endoscopic sampling and culturing of intestinal juice appears to be the method of choice.

● COLONIC EXPRESSION OF CELL ADHESION MOLECULES CORRELATES WITH CLINICAL AND HISTOLOGIC SEVERITY IN ULCERATIVE COLITIS BUT NOT CROHN'S DISEASE. E.V. Loftus, P.A. Dean*, H. Nelson, W.J. Tremaine, W.J. Sandborn, K.P. Batts, A.R. Zinsmeister, D.W. Mahoney. Mayo Clinic, Rochester, MN; *University of Alabama, Birmingham, AL.

Cell adhesion molecule (CAM) expression is increased on colonic vascular endothelium and lymphocytes in ulcerative colitis (UC) and Crohn's disease (CD), suggesting that CAMs may play a role in the inflammatory processes that are the hallmark of UC and CD. We have previously shown that the patterns of colonic CAM expression differ between UC and CD (Gastroenterology 1993;104:A689). These disease-specific patterns may reflect different mechanisms of inflammation, the severity of inflammation, or both. AIM: To correlate clinical disease activity and histologic severity of colitis with endothelial CAM expression in patients (pts) with UC and CD. METHODS: Colonic tissue from patients (pts) with UC (n=23) and CD (n=24) were studied immunohistochemically using monoclonal antibodies to: E-selectin; intercellular adhesion molecule-1 (ICAM-1); vascular cell adhesion molecule-1 (VCAM-1); and platelet-endothelial cell adhesion molecule (PECAM). CAM expression on endothelial cells in the muscularis (musc) was quantitated at 200x optical field, and CAM expression on endothelium in the mucosa was graded qualitatively on a 0-3 scale. Histologic severity of colitis (histo) was graded on a 0-3 scale. Clinical disease activity was determined retrospectively using the St. Mark's index (SMI) for UC pts; and the Harvey-Bradshaw (HBI) and Oxford indices for CD pts. RESULTS:

Index	E-selectin mucosa	E-selectin musc	ICAM-1 mucosa	ICAM-1 musc	VCAM-1 mucosa	VCAM-1 musc	PECAM mucosa	PECAM musc
UC-SMI	0.68	0.15	-0.08	0.49	-0.89	0.10	0.17	0.23
UC-histo	0.69	0.54	0.03	0.48	-0.74	0.46	0.06	0.40
CD-HBI	-0.16	-0.06	-0.24	0.29	0.53	0.33	-0.30	-0.28
CD-Oxford	-0.01	-0.12	-0.29	-0.18	0.14	0.31	-0.47	-0.15
CD-histo	-0.19	-0.57	-0.23	-0.21	-0.25	-0.29	-0.41	-0.58

Spearman's rank correlation coefficient (r): underlined numbers indicate p<0.05; otherwise p = NS.
CONCLUSIONS: Colonic vascular endothelial expression of E-selectin correlates with clinical and histologic severity in UC. Colonic vascular CAM expression does not correlate with Crohn's disease activity as measured by 2 clinical indices and histologic severity. Thus, colonic CAM expression appears disease-specific, and not solely explained by severity of inflammation. Future investigations into these disease-specific findings may be informative and relevant to the differential pathogenesis of CD and UC.

● TOPICAL DEXPANTHENOL DOES NOT AFFECT FECAL SHORT CHAIN FATTY ACID LEVELS OR COLONIC COENZYME A LEVELS IN PATIENTS WITH ACTIVE ULCERATIVE COLITIS. E.V. Loftus, W.J. Tremaine, R.A. Nelson*, W.J. Sandborn, S.F. Phillips, K.P. Batts. Mayo Clinic, Rochester, MN; *University of Illinois-Urbana-Champaign, Urbana, IL; **St. Louis University, St. Louis, MO.

Isolated colonocytes from patients (pts) with quiescent or active ulcerative colitis (UC) oxidize short chain fatty acids (SCFA) less efficiently than colonocytes from controls. The resulting "energy deficiency" may play a role in UC pathogenesis. Indeed, SCFA and butyrate enemas have been efficacious in treatment of distal UC. Levels of coenzyme A (coA), an essential cofactor in fatty acid oxidation, are decreased in the colonic tissue of patients with UC and Crohn's. Topical administration of pantothenic acid (PA), a precursor of coA, might increase tissue levels of coA, improve SCFA oxidation, and be of benefit in UC. AIMS: To assess the effect of a topical preparation of PA (dexpanthenol enemas) on disease activity, intraluminal SCFA levels and colonic tissue coA in pts with active distal UC. METHODS: Three pts with mildly to moderately active distal UC received nightly enemas (60 mL) containing 1000 mg of dexpanthenol in tap water for 4 weeks. Before and after the course of enemas, pts underwent: urine assays (gas chromatography/mass spectroscopy [GCMS]) for dicarboxylic acids (succinic and ethylmalonic, DCA) as an indirect measure of defective β-oxidation; urine GCMS assays for PA; stool specimens for SCFA (capillary GC); and flexible sigmoidoscopy with biopsies for histology and measurement of colonic coA activity. A 12-point disease activity index (DAI) based on stool frequency (0-3), rectal bleeding (0-3), endoscopic appearance (0-3) and global assessment (0-3); and a 3 point histologic index (HI) were used. RESULTS: Despite marked increases in urine PA, the colonic tissue coA levels and stool SCFA levels did not change. There was no significant change in the DAI or HI. All pts noted increased abdominal cramping, and in one pt the extent of disease increased.

	DAI 0-12	HI 0-3	urine PA (mM/mM creat)	urine DCA (mM/mM creat)	fecal SCFA (mM)	colonic coA
pre	8±2	2±1	4.7±1.2	19.7±20.2	46.6±30.2	0.43±0.75
post	7.7±2.1	2±1	174±99	21±23	56.2±18.7	0.0±0.0

CONCLUSIONS: Despite excellent rectal absorption, topical delivery of a form of PA, a precursor of coA, does not appear to influence colonic coA levels or intraluminal SCFA levels in pts with active distal UC. PA administration does not improve symptoms or endoscopic or histologic abnormalities in distal UC.