of endoscopic lesions was similar to that of fCal. Using these fecal markers to monitor patients with IBD could reduce the need for endoscopic examination.

**P119**
Assessment of Crohn’s disease activity by confocal laser endomicroscopy

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**Background:** Confocal laser endomicroscopy (CLE) allows microscopic imaging within the mucosal layer of the gut during ongoing endoscopy. Different studies have addressed the potential of CLE for in vivo diagnosis of ulcerative colitis and microscopic colitis. However, there are no data on the utility of CLE for in vivo diagnosis of Crohn’s disease (CD). Aim was to assess the clinical utility of CLE in patients with CD and to determine whether disease activity can be graded using CLE.

**Methods:** Consecutive patients with and without CD were enrolled. The colonic mucosa was examined by standard white-light endoscopy followed by CLE. The features seen on CLE were compared between CD patients and controls.

**Results:** 76 patients with CD were screened of whom 54 patients were included in the present study. 18 patients without IBD served as controls. A significantly higher proportion of patients with active CD had increased colonic crypt tortuosity, enlarged crypt lumen, microerosions, augmented vascularisation and increased cellular infiltrates within the lamina propria. In quiescent CD, a significant increase in crypt and goblet cell number was detected compared to controls. Based on our findings, we propose a Crohn’s disease endomicroscopic activity score (CDEAS) for assessing CD activity in vivo.

**Conclusions:** CLE has the potential to significantly improve diagnosis of CD compared to standard endoscopy and to further define the term “mucosal healing”. These findings should be evaluated in future prospective trials to assess the value of this newly developed CLE score for prediction of disease course and therapeutic responses.

**P120**
A new computed assisted algorithm allows automatic evaluation of inflammatory activity in inflammatory bowel disease (IBD) using confocal laser endomicroscopy (CLE)

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**Background:** Confocal diagnosis of acute inflammation in IBD is based on goblet cell depletion, vessel structures and crypt architecture. Nevertheless, interobserver agreement and intraobserver agreement in the assessment of these features is only moderate making a comparison of different studies nearly impossible. Aim of the study was to develop a new algorithm for the computed assisted diagnosis (CAD) of inflammatory activity in IBD in order to improve diagnostic reliability and comparability of CLE.

**Methods:** The CAD-algorithm semi-automatically segmented anatomical structures, like goblet cells, vessel structures, crypt architecture, and relevant cell types in CLE-image sequences. Therefore, the CAD-algorithm segmented and counted intestinal crypts and crypt lumens within each image. From the residual part of the image, image artifacts were automatically identified and afterwards excluded from further analysis using digital postprocessing. Subsequently, additional image filtering, segmentation and thresholding methods were applied to classify the different cell types and to measure a quantitative ratio.

**Results:** A new CAD-algorithm for the automatic evaluation of inflammatory activity in IBD using CLE was developed and evaluated. The CAD-algorithm allowed successful, fast and repeatable analysis of different architectural and cellular features, including goblet cells, crypt architecture and microvasculature with excellent overall accuracy.

**Conclusions:** The newly developed CAD-algorithm allowed automatic evaluation of inflammatory activity in IBD using CLE sequences. Thus, the technique has the potential to better characterize patients with IBD and to contribute to consistent data in different studies assessing inflammatory activity in IBD.