

Value of CT enterography in predicting activity of Crohn's disease: Correlation between Crohn's disease activity index and CRP

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Background: The accurate evaluation of disease activity in Crohn's disease is important in treatment of the disease and monitoring the response. CT enterography is a useful imaging modality reflecting the enteric inflammation as well as extramural complications.

Objectives: To evaluate the correlation of CT enterographic findings of active Crohn's disease with the Crohn's Disease Activity Index (CDAI) and CRP.

Patients & Methods: 50 CT enterorotraphys in 39 patients with Crohn's disease in the small bowel were enrolled in our study. CDAI was assessed through clinical or laboratory variables. Multiple CT parameters including mural hyper-enhancement, mural thickness, mural stratification, comb sign and mesenteric fat attenuation were examined with four-point scale. The presence of enhanced lymph nodes, fibro-fatty proliferation, sinus or fistula, abscess and stricture were also assessed. Two gastrointestinal radiologists independently reviewed all CT images. The inter-observer agreement was also examined. Correlations between CT findings, CRP and CDAI were assessed using Spearman's rank correlation and logistic regression analysis. To assess the predictive accuracy of the model, receiver-operating characteristic curve analysis for sum of CT enterographic scores was used.

Results: Mural hyper-enhancement, mural thickness, comb sign, mesenteric fat density, fibro-fatty proliferation, fistula and abscess were significantly correlated with CDAI ($p < 0.05$). Mesenteric fat density was correlated with CRP ($r = 0.32$; $p = 0.02$). The binary logistic regression model demonstrated that mesenteric fat density ($p = 0.02$) had an influence on the severity of CDAI. The AUROC of CTE index for predicting disease activity was 0.85. Using cut-off value of 8, the sensitivity and negative predictive value were 95% and 94%.

Conclusions: Most CTE findings are correlated with CDAI and CRP in patients with active Crohn's disease.

Biography

Min Ju Kim is an Abdominal Radiologist with an expertise in evaluation of gastrointestinal disease. She has reviewed about rectal ultrasonography and inflammatory bowel disease and there are many articles about gastrointestinal diseases, especially in inflammatory bowel disease or rectal MRI for evaluation of rectal cancer. She is at present a Professor of Korea University Medical School in Seoul, Korea and is teaching gastrointestinal radiology.

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