**MR Enteroclysis Evaluation of the Activity of Crohn's Disease.**

G. Masselli[1], M. G. Brizi[2], L. Menchini[3], L. M. Minordi[3], A. Vecchioli[3]

[1]Radiology, S. Eugenio Hospital, Rome, Italy, Italy, [2]Radiology, Gemelli University hospital, Rome, Italy, Italy, [3]Radiology, Gemelli University hospital, Rome, Italy

OBJECTIVE: To evaluate the sensitivity and specificity of MR enteroclysis (MRE) in assessing the activity of Crohn's disease.

SUBJECTS AND METHODS: Thirty-eight patients (20 male and 18 female; mean age 34 years; range 18-75 y) with previously proven Crohn's disease but uncertain disease activity were prospectively examined using MR enteroclysis.

MRE was performed on 1.5 T magnet (GE) by injection of 1,5-2 l of PEG solution via a nasojejunal catheter with the patient in prone position using a phase array body coil. To monitor the filling process of the the small bowel, a ssFSE sequence was applied every 7 seconds. As soon as the entire small bowel was adequately distended, 2O mg of Buscopan was administered i.v.

MRE examination protocol included: FIESTA, ssFSE, obtained on coronal and axial plane and gadolinium enhanced fat suppressed 3D FSPGR sequences.

Images were assessed by two radiologists who were unaware of the patient's symptoms, clinical scoring, and other imaging tests, and who reached a consensus about the following imaging findings: bowel wall thickening, bowel wall enhancement, and perienteric changes and determined the absence or presence of active disease in each patient. MR imaging findings were correlated with endoscopy and surgery, the gold standards of this study. All patients were scored using the Crohn's disease activity index with the value of 150 considered as threshold for disease activity.

RESULTS: Basis on endoscopy (n=31) and surgery (n= 7), twenty-nine patients had inactive disease and eleven patients had active disease. The median interval between MRE and gold standard was 15 days.

On a per patient basis, MR imaging had an overall sensitivity of 92% and a specificity of 83% for active disease. The Crohn's disease activity index had a sensitivity of 81% and a specificity of 37%. On a per segment basis, MR imaging had a sensitivity of 85% and a specificity of 71%. The product of wall layered enhancement and enhancement of lymph nodes ranks was the optimum combination for discriminating active from not active disease ($p<0.01$).

Bowel wall thickening of greater than 4 mm, perienteric fibro-fatty proliferation , and increased mesenteric vascularity were useful in identifying active disease, but were less statistical significance ($p>0.05$).

CONCLUSION: MRE is an accurate tool in the assessment of the activity of Crohn's disease and may be helpful in treatment planning. Futhermore our results showed a higher capacity of MRE in evaluating disease activity compared with CDAI.