The impact of new Inflammatory Bowel Disease (IBD)-specific materials on patients’ preparedness and image quality of MR Enterography (MRE).

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Introduction and Objectives

- Patients find the most unpleasant part of MRE is oral preparation (e.g. mannitol) and repeated breath holds.
- Patients’ levels of physical and psychological discomfort can impact compliance.
- IBD patients are likely to need multiple MREs so ensuring good compliance is essential.
- We compared new patient-focused materials covering these aspects of MRE via an online platform- IBD mate to generic MR information and assessed the impact on patients’ preparedness and image quality.
IBD-Mate is a website and app that provides videos regarding MRI scans answering common questions with information from patients and healthcare providers.
Methods

• IBD patients with upcoming MRE scans assigned to control (Con) or intervention (Int) cohorts

• Pre and post-scan questionnaire was administered to both groups (included questions surrounding patient feelings and understanding of the scan)
  • Proportion of unanswered questions were compared between the two groups using chi squared test

• MRE images were reviewed by a blinded radiologist for image quality
  • Small bowel distention scored between 0 (very poor distention) and 4 (excellent)
  • Respiratory motion was graded between 0 (significant artefact) and 2 (no artefact)
Figure 1: CONSORT diagram illustrating how the patient cohort was generated

Patient Cohort (152)
- Intervention = 78
- Control = 74

Survey Responders (60)
- Intervention = 28/78 (36%)
- Control = 32/74 (45%)

Image Quality Assessed (54)
- Intervention = 26
- Control = 28

Terminal Ileum Measurements (39)
- Intervention = 17
- Control = 22

Non-responders (92)

Patients excluded as small bowel MRE could not be found (6)

Patients with terminal ileum resection (13)
Results

IBD patients with upcoming MREs (152)

Intervention (78)

Responses (28) (36%)
- 21 participants watched all videos before completing the survey
- 10 patients were attending first MRE (36%)

Controls (74)

Responses (32) (45%)
- 13 were attending their first MRE (39%)
Results - Unanswered Questions

- In both groups, ≥ 85% of questionnaire respondents read the information provided.

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<thead>
<tr>
<th>Intervention (26)</th>
<th>Controls (29)</th>
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<td>1/28 (4%)</td>
<td>10/33 (30%)</td>
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Number of unanswered questions

- p = 0.02

Unanswered Questions:

- “I am not sure about how long the scan will take and if I will be able to go back to work”
- “What is Mannitol?”
- “I don’t know what is going to happen after”
- “Do I take my daily medications while I am fasting? Is it safe to take my daily medications on an empty stomach?”
- “I had requested a Large Bowl MRI so am a bit confused.”
Results - Image Quality

• 54 patients included in image quality analysis

- Intervention (26)
  - 2 ‘No artefact’ (2;2)
  - 3 ‘Good’ (2;4)

- Controls (28)
  - 2 ‘No artefact’ (1;2)
  - 3 ‘Good’ (3;4)

• 13 patients with prior small bowel resection excluded from TI diameter measurements

- Median (Q1;Q3)
  - Respiratory Motion
  - 16 ± 4 mm
  - p = 0.49
  - Median distention
  - 16 ± 4 mm
  - p = 0.85

- Mean ± SD
  - 16 ± 4 mm
  - p = 0.16
Discussion and Future Directions

- Similar response rates across our groups
- New patient focused materials reduced the numbers of unanswered questions patients had prior to scans
- Patients without enhanced information had questions around oral contrast and the purpose of the test e.g. large bowel MR
- No statistically significant difference in this gross assessment of scan quality on this study which may be due to methodological limitations
- Subjective assessment of distention
- Professional patient cohort (IBD patients for years)
- Pathology on scans affecting TI measurements

- Early and good education may ensure better patient compliance with follow-up imaging, a potential area of longitudinal study
- Developing a validated and objective method to assess small bowel distention in an MR naïve cohort in a longitudinal study
- Bowel preparation scoring methods exist for capsule endoscopy but not for MRE.