

Magnetic resonance enterography compared with ultrasonography in newly diagnosed and relapsing Crohn's disease patients: the METRIC diagnostic accuracy study

Stuart A Taylor,^{1*} Sue Mallett,² Gauraang Bhatnagar,¹ Stephen Morris,³ Laura Quinn,² Florian Tomini,³ Anne Miles,⁴ Rachel Baldwin-Cleland,⁵ Stuart Bloom,⁶ Arun Gupta,⁵ Peter John Hamlin,⁷ Ailsa L Hart,⁸ Antony Higginson,⁹ Ilan Jacobs,¹⁰ Sara McCartney,⁶ Charles D Murray,¹¹ Andrew AO Plumb,¹ Richard C Pollok,¹² Manuel Rodriguez-Justo,¹³ Zainib Shabir,¹⁴ Andrew Slater,¹⁵ Damian Tolan,¹⁶ Simon Travis,¹⁷ Alastair Windsor,¹⁸ Peter Wylie,¹⁹ Ian Zealley²⁰ and Steve Halligan¹

¹Centre for Medical Imaging, University College London, London, UK

²Institute of Applied Health Research, National Institute for Health Research Birmingham Biomedical Research Centre, College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK

³Applied Health Research, University College London, London, UK

⁴Department of Psychological Sciences, Birkbeck, University of London, London, UK

⁵Intestinal Imaging Centre, St Mark's Hospital, London North West University Healthcare NHS Trust, Harrow, UK

⁶Department of Gastroenterology, University College Hospital, London, UK

⁷Department of Gastroenterology, St James's University Hospital, Leeds Teaching Hospitals NHS Trust, Leeds, UK

⁸Inflammatory Bowel Disease Unit, St Mark's Hospital, London North West University Healthcare NHS Trust, Harrow, UK

⁹Department of Radiology, Portsmouth Hospitals NHS Trust, Portsmouth, UK

¹⁰Independent patient representative, c/o Centre for Medical Imaging, University College London, London, UK

¹¹Department of Gastroenterology and Endoscopy, Royal Free London NHS Foundation Trust, London, UK

¹²Department of Gastroenterology, St George's Hospital, London, UK

¹³Department of Histopathology, University College Hospital, London, UK

¹⁴Comprehensive Clinical Trials Unit, Institute of Clinical Trials and Methodology, University College London, London, UK

¹⁵Oxford University Hospitals NHS Foundation Trust, Oxford, UK

¹⁶Department of Radiology, St James's University Hospital, Leeds Teaching Hospitals NHS Trust, Leeds, UK

¹⁷Translational Gastroenterology Unit, Oxford University Hospitals NHS Foundation Trust, Oxford, UK

¹⁸Department of Surgery, University College Hospital, London, UK

¹⁹Department of Radiology, Royal Free London NHS Foundation Trust, London, UK

²⁰Department of Radiology, Ninewells Hospital, Dundee, UK

*Corresponding author stuart.taylor@ucl.ac.uk

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Plain English summary

The METRIC diagnostic accuracy study

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Plain English summary

Crohn's disease is a waxing and waning lifelong inflammatory condition that affects the colon (large bowel) and small bowel. Treatment relies on accurately determining disease extent and underlying inflammation. Colonoscopy is very good for examining the colon, but it is invasive and, at best, can only visualise a few centimetres of the small bowel, so radiological imaging is very important. Magnetic resonance enterography (a type of magnetic resonance imaging scan) and ultrasonography are both radiological tests commonly performed in the NHS, and it is unclear which method is better. We performed a study to compare the accuracy of magnetic resonance enterography and ultrasonography for determining the extent of Crohn's disease in the bowel of participants newly diagnosed and in those participants with established Crohn's disease but with suspected deterioration. We also investigated how often radiologists agree with each other during test interpretation, the participant experience of undergoing the tests and their cost-effectiveness. We compared the tests in 284 participants (133 newly diagnosed and 151 with suspected deterioration). We found that both tests were accurate for detecting the presence (97% for magnetic resonance enterography and 92% for ultrasonography) and location (80% for magnetic resonance enterography and 70% for ultrasonography) of disease in the small bowel, but magnetic resonance enterography was better than ultrasonography for both (correctly classifying disease extent in 107 more participants for every 1000 participants with Crohn's disease). Magnetic resonance enterography was similarly better than ultrasonography at determining if the bowel was inflamed. The results were similar in newly diagnosed participants and those participants with suspected deterioration. Agreement between radiologists interpreting the same images was, at best, moderate for both tests. A total of 88% of participants tolerated magnetic resonance enterography well or fairly well, which was less than the percentage (99%) of participants who tolerated ultrasonography well or fairly well. Both tests had a similar effect on the treatment decisions made by doctors. Both tests were also similar in their value for money for the NHS.

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