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MRI FOR DIAGNOSIS OF SMALL BOWEL DISEASE IN PAEDIATRIC CROHNS DISEASE: A SYSTEMATIC REVIEW

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Introduction Barium meal enteroclysis (BM) is the recommended imaging technique for small bowel inaccessable by ileocolonoscopy when diagnosing paediatric inflammatory bowel disease (IBD) (1). However it is subject to poor sensitivity and involves ionising radiation. MRI enterography (MRE) has recently been reported as an alternative methodology. We aimed to critically appraise the published evidence on use of MRE in diagnosis of paediatric IBD by systematic review.

Methods Review of all English language data reporting MRE for the investigation of patients <16 years with known or suspected IBD. Searches of Medline (January 1950–November 2010) and Pubmed (January 1950–November 2010) were performed using keyword and MeSH terms; IBD; MRI; small bowel imaging. Reference lists of potential studies, handsearching and personal collections of authors were also

Table 1 PWE-016

Study	Patient No	Index test	Reference test	Conclusions
Dagia 2008	24	MRE	Endoscopy	7/28 identified small bowel disease
Dagia 2010	46	MRE	Endoscopy	86% sensitivity
Horsthius 2010	33	MRE and BM	Endoscopy	60–90% sensitivity and specificity, 50–80% sensitivity 63–94% specificity for BM
Diarbari 2004	58	MRE and BM, CT	Endoscopy	96% sensitivity 92% specific 14/21 proximal small bowel disease, more sensitive than BM.
Durno 2000	14	MRE	Endoscopy	5/10 identified extensive small bowel disease.
Magnano 2003	22	MRE and US	Endoscopy	90% sensitivity, US equivalent
Laghi 2003	75	MRE	Endoscopy	84% sensitivity 100% specificity
Borthe 2006	43	MRE and US	Endoscopic	82% sensitivity 100% specificity, US equivalent

examined. Two authors independently assessed the quality of studies for inclusion using the QUADAS tool (2). A third author was an arbiter in cases of disagreement.

Results Database searches yielded 606 291 hits, combination word searches limited this to 968 titles. 38 studies were fully reviewed and 10 potential studies identified. 2 studies were excluded due to lack of separate paediatric data or inadequate methodological rigour. 8 studies were included (QUADAS scores 7–13/14) (table 1). Studies displayed heterogeneity in bowel preparation, scanning technique, reporting methodology and comparisons with BM, ultrasound and CT. Timing of ileocolonoscopy in relation to MRE was also variable. Two papers reported greater sensitivity and specificity for MRE in comparison to BM.

Conclusion MRE is an sensitive and specific tool for the diagnosis of paediatric IBD. However technical considerations require refinement and standardisation, however MRE offers a significant reduction in ionising radiation exposure. Current data suggest that MRE should supercede BM as the small bowel imaging technique in centres with appropriate expertise.

Competing interests None.

Keywords inflammatory bowel disease, paediatric, small bowel imaging.

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