A systematic review of clinical studies on dynamic magnetic resonance imaging of pelvic organ prolapse: the use of reference lines and anatomical landmarks

Broekhuis SR, Futterer JJ, Barentsz JO, Vierhout ME, Kluivers KB

CRD summary
This review found that few studies compared dynamic magnetic resonance imaging (MRI) with clinical examination for assessment of pelvic organ prolapse. MRI may be useful in the posterior compartment, but seemed interchangeable with clinical examination in the anterior and central compartments. The review did not provide evidence on the different anatomical compartments and these conclusions are unlikely to be reliable.

Authors' objectives
To determine the agreement between dynamic magnetic resonance imaging for staging pelvic organ prolapse and clinical examination.

Searching
PubMed and EMBASE were searched to January 2008; search terms were reported. References of retrieved studies were screened to identify additional studies. No language restrictions were applied.

Study selection
Studies that compared results of pelvic organ prolapse staging in women using dynamic magnetic resonance imaging (MRI) (cine loop obtained at rest, during squeezing, straining and/or defecation) with clinical examination (standard method of gynaecological prolapse staging, preoperative or intra-operative) were eligible for inclusion. Studies had to report on a reference line used to stage the prolapse on dynamic MRI and report on clinical findings of cystocele, rectocele, enterocele, and/or uterine or vaginal vault. Studies that reported only on postoperative gynaecologic examination were excluded.

Included studies assessed healthy asymptomatic women, women with pelvic organ prolapse or compared symptomatic women to healthy controls. Mean age ranged from 22 to 69 years. Most studies used Pelvic Organ Prolapse Quantification (POPQ) for clinical assessment; two studies used modified Baden-Walker assessment and one classified rectal protrusion in the vagina. All studies used MRI of the pelvic floor with women in the supine position.

Two reviewers independently assessed studies for inclusion; disagreements were resolved through discussion.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors stated neither how data were extracted for the review nor how many reviewers performed data extraction.

Methods of synthesis
A narrative synthesis was presented.

Results of the review
Ten studies were included (398 women, range 13 to 100 across studies). Studies assessed seven different reference lines in relation to a wide variety of anatomical landmarks.

Two studies reported 100% agreement between MRI and clinical examination in women without pelvic organ prolapse. One study showed an overestimation of pelvic organ prolapse on MRI compared to clinical examination in two out of five women. Three studies did not present agreement. Results from the remaining four studies were not discussed.
Authors' conclusions
Few studies had compared pelvic organ prolapse stages as assessed by dynamic MRI and clinical examination. Available evidence suggested that prolapse assessment on dynamic MRI may be useful in the posterior compartment, but clinical assessment and dynamic MRI seemed interchangeable in the anterior and central compartments.

CRD commentary
The review addressed a clear question supported by defined inclusion criteria in terms of intervention and comparator, but details were lacking on population and outcome. The literature search was adequate for published studies. No specific attempts were made to locate unpublished studies and so there was a possibility of publication bias. Appropriate steps were taken to reduce reviewer bias and error in assessment of studies for inclusion; it was unclear whether such steps were taken for data extraction. Study quality was not formally assessed and so the reliability of the included small studies was unclear. A narrative synthesis was appropriate given differences between studies. There appeared to be some discrepancy between results summarised in the text and table and there was a lack of numerical and statistical data. The authors' conclusions were not supported by the results of the review as these did not provide specific evidence in relation to the different anatomical compartments. The authors' conclusions are unlikely to be reliable.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice
Research: The authors stated that more evidence from well-conducted clinical studies was needed to enable the future definition of guidelines for dynamic MRI.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract
contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.