Contribution of clinical tests to the diagnosis of rotator cuff disease: a systematic literature review


CRD summary
The authors concluded that data on the diagnostic performance of clinical tests for rotator cuff tendon disease were fragmentary. This review suffered from a number of limitations that included the possibility of missing studies, failure to assess study quality and limited study details, which made the reliability of the conclusions unclear.

Authors’ objectives
To evaluate the accuracy of clinical tests for degenerative rotator cuff disease.

Searching
MEDLINE, EMBASE and Pascal were searched to 2006. Search terms were reported and included a diagnostic filter.

Study selection
Studies that included at least 30 patients with rotator cuff disease, a good description of the clinical tests and diagnostic method, clear definitions of positive and negative test results, had a known reference standard (for subacromial impingement or tendon disease) and that reported details on the prevalence of the abnormality in the overall study population were eligible for inclusion. Studies had to report data on sensitivity and specificity.

Mean age ranged from 40 to 57 years. Most studies included surgical patients, but medical patients were also included. Specific tests evaluated for subacromial impingement were the painful arc test, Neer test, Hawkins test and Yocum test. Tests evaluated for rotator cuff tendons were the Jobe test, full can test, resisted external rotation with the elbow at the side flexed at 90 degrees, Patte test, weakness in active external rotation arm in 20 and 90 degrees of abduction, lift off test weakness in active internal rotation and the palm up test. The most commonly reported reference standard tests were arthrography, arthroscopy and intra-operative observation.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

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

Data extraction
One reviewer extracted data on sensitivity and specificity and where reported on positive (PPV) and negative predictive values (NPV), and accuracy. Data were agreed and validated by other authors, but it was unclear exactly what this involved.

Methods of synthesis
A narrative synthesis was presented with results grouped according to clinical test.

Results of the review
Nine studies (n=1,668) were included in the review: seven (n=1,463) assessed rotator cuff lesions and three (n=653) evaluated the detection of subacromial impingement.

Sensitivity ranged from 32% to 97% and specificity ranged from 10% to 80% for detection of subacromial impingement. Sensitivity ranged from 21% to 97% and specificity ranged from 35% to 100% for detection of rotator cuff lesions. Each included test was only evaluated by one or two studies. There was considerable heterogeneity across studies, even among those that evaluated the same test. None of the tests showed consistently good sensitivity and specificity.
Authors' conclusions
Data on the diagnostic performance of clinical tests for rotator cuff tendon disease were fragmentary, but objective data existed to support the use of some of the tests.

CRD commentary
The review addressed a clear question and inclusion criteria were reported. The literature search was limited to electronic databases and included a diagnostic filter. No additional attempts were made to identify studies such as screening references or to identify unpublished studies. It was, therefore, likely that relevant studies were missed and the review may have been subject to publication bias. It was unclear whether appropriate steps were taken to minimise bias and errors in the selection of studies. Data extraction was carried out by one reviewer. The authors stated that the other authors discussed and validated the data from the literature review, but it was unclear whether this was done in sufficient detail to constitute double checking the data extraction. Study quality was not assessed and so the reliability of the included studies was unclear. Very few details were reported on the included studies, in particular in relation to patients. This made it impossible to determine the generalisability of the review findings. Given the differences between studies and small numbers of studies that evaluated each test a narrative synthesis was appropriate. These limitations made the reliability of the findings from this review unclear.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that further evaluations were needed, including efforts to standardise the way in which the tests are used, performed and interpreted.

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