

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Rheumatoid Factor and Anti-cyclic Citrullinated Peptide Testing for Arthralgia: Diagnostic Accuracy, Clinical Utility, and Guidelines

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Research Questions

1. What is the diagnostic accuracy of rheumatoid factor tests for patients presenting with arthralgia but no arthritis on a physical exam?
2. What is the diagnostic accuracy of anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on physical exam?
3. What is the clinical utility of rheumatoid factor tests for patients presenting with arthralgia but no arthritis on physical exam?
4. What is the clinical utility of anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on physical exam?
5. What are the evidence-based guidelines regarding rheumatoid factor tests or anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on physical exam?

Key Findings

One non-randomized study was identified regarding the diagnostic accuracy of rheumatoid factor tests and anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on a physical exam. No relevant literature was identified regarding the clinical utility of rheumatoid factor tests or anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on physical exam. No relevant evidence-based guidelines were identified regarding rheumatoid factor tests or anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on physical exam.

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were arthralgia, and rheumatoid factor or anti-cyclic citrullinated peptide tests. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2015 and November 1, 2020. Internet links were provided, where available.

Selection Criteria and Summary Methods

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. The Overall Summary of Findings was based on information available in the abstracts of selected publications. Open access full-text versions of evidence-based guidelines were reviewed when abstracts were not available, and relevant recommendations were summarized.

Table 1: Selection Criteria

Population	Patients with arthralgia but no arthritis on physical examination
Interventions	Q1,3: Rheumatoid factor tests Q2,4: Anti-cyclic citrullinated peptide tests Q5: Rheumatoid factor tests or anti-cyclic citrullinated peptide tests
Comparators	Q1,2: Imaging or other confirmation of diagnosis Q3,4: Physical exam alone Q5: Not applicable
Outcomes	Q1,2: Diagnostic accuracy (e.g., clinical validity, sensitivity, specificity, positive predictive value, negative predictive value) Q3,4: Clinical utility (e.g., risks associated with testing, clinical improvement, difference in pain, appropriate treatment) Q5: Recommendations regarding the use of rheumatoid factor tests or anti-cyclic citrullinated peptide tests for patients presenting with joint pain but no arthritis
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines

Results

One non-randomized study¹ was identified regarding the diagnostic accuracy of rheumatoid factor tests and anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on a physical exam. No relevant health technology assessments, systematic reviews, randomized controlled trials, or evidence-based guidelines were identified.

Additional references of potential interest that did not meet the inclusion criteria are provided in the appendix.

Overall Summary of Findings

One non-randomized study¹ was identified regarding the diagnostic accuracy of rheumatoid factor tests and anti-cyclic citrullinated peptide tests for patients presenting with arthralgia but no arthritis on a physical exam. The authors concluded that the sensitivity and specificity of rheumatoid factor and anti-cyclic citrullinated peptide antibodies ranged from 0.63 to 0.802, with the reference standard being medical examination.¹

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-Analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Hermosillo-Villafranca JA, Guillen-Lozoya AH, Vega-Morales D, et al. Role of Rheumatoid Factor Isotypes and Anti-citrullinated Peptide Antibodies in the Differential Diagnosis of Non-selected Patients with Inflammatory Arthralgia. *Reumatol Clin.* 2019 Aug 06; S1699-258X(19)30051-8.
[PubMed: PM31399351](#)

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Previous CADTH Reports

2. Clark M, Argáez C. Rheumatoid factor testing: guidelines. Ottawa: CADTH; 2018 Jul. (CADTH rapid response report: summary of abstracts)
<https://www.cadth.ca/sites/default/files/pdf/htis/2018/RB1242%20Rheumatoid%20Factor%20Testing%20Final.pdf>

Clinical Practice Guidelines – Methodology Unclear

3. Choosing Wisely: Don't order rheumatoid factor alone, or as part of a "panel" or "cascade" in children to evaluate for rheumatologic disease such as juvenile idiopathic arthritis due to musculoskeletal complaints. Don't let laboratory results guide referral. Leawood (KS): American Academy of Family Physicians. 2020.
<https://www.aafp.org/afp/recommendations/viewRecommendation.htm?recommendationId=406>