TITLE: Portable Ultrasound Devices Use by Non-Radiologists: Clinical Evidence and Guidelines

DATE: 09 March 2016

RESEARCH QUESTIONS

1. What is the clinical evidence regarding the use of portable ultrasound by non-radiologists for the assessment and management of patients with musculoskeletal conditions?

2. What are the evidence-based guidelines regarding the use of portable ultrasound by non-radiologists?

KEY FINDINGS

Two non-randomized studies were identified regarding the use of portable ultrasound by non-radiologists for the assessment and management of patients with musculoskeletal conditions.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to the main search to limit the retrieval by study type. A second broader search for non-radiologist-performed ultrasound was also included. For this search, methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, and guidelines. For both searches, retrieval was limited to the human population where possible. The search was also limited to English language documents published between January 1, 2011 and March 1, 2016. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

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<th>Table 1: Selection Criteria</th>
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<td><strong>Population</strong></td>
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<td><strong>Comparator</strong></td>
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<td><strong>Study Designs</strong></td>
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MRI = magnetic resonance imaging.

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Two non-randomized studies were identified regarding the use of portable ultrasound by non-radiologists for the assessment and management of patients with musculoskeletal conditions. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or evidence-based guidelines were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One non-randomized study examined the use of bedside ultrasound by emergency room physicians to evaluate suspected anterior talofibular ligament injuries. The findings of the bedside ultrasound were compared with magnetic resonance imaging (MRI). The sensitivity of the bedside ultrasound was 93.8% and the specificity was 100%. The authors concluded that emergency room physicians were able to accurately use bedside ultrasound to diagnose ligament injury. A second non-randomized study compared the ability of non-physicians to operate portable ultrasound on their own after a short training session to non-physicians whose imagine was guided by a specialist via satellite. Diagnostic quality was obtained in 85.1% of the independent images and in 86.2% of the guided images. There was no significant difference observed between the two groups.
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


Guidelines and Recommendations
No literature identified.

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APPENDIX – FURTHER INFORMATION:

Systematic Reviews and Meta-Analyses

Portable Not Specified


Fracture


Non-Randomized Studies

Fracture


Policy and Position Statements


Training Requirements


Review Articles


