Evidence Report/Technology Assessment
Number 62

Diagnosis and Treatment of Worker-Related Musculoskeletal Disorders of the Upper Extremity

Agency for Healthcare Research and Quality

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Diagnosis and Treatment of Worker-Related Musculoskeletal Disorders of the Upper Extremity

VOLUME 1

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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

To bring the broadest range of experts into the development of evidence reports and health technology assessments, AHRQ encourages the EPCs to form partnerships and enter into collaborations with other medical and research organizations. The EPCs work with these partner organizations to ensure that the evidence reports and technology assessments they produce will become building blocks for health care quality improvement projects throughout the Nation. The reports undergo peer review prior to their release.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality.

We welcome written comments on this evidence report. They may be sent to: Director, Center for Practice and Technology Assessment, Agency for Healthcare Research and Quality, 6010 Executive Blvd., Suite 300, Rockville, MD 20852.

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Structured Abstract

Objectives. We conducted a systematic review of published evidence on four common musculoskeletal disorders affecting workers; carpal tunnel syndrome (CTS), cubital tunnel syndrome, epicondylitis, and de Quervain's disease. This report is a "Best Evidence" synthesis in which we address the best available evidence, not the best possible evidence. We addressed 13 key questions regarding their diagnosis, treatment, and costs.

Search Strategy. To identify information for this report, we searched 31 databases, relevant web sites, four U.S. government datasets, hand-searched the reference lists of all studies retrieved for this evidence report, searched Current Contents-Clinical Medicine weekly, and reviewed over 1,600 documents maintained in ECRI's collections.

Selection Criteria. To be selected for evaluation, a published study had to enroll patients diagnosed with one of the four relevant disorders. All controlled trials were retrieved, regardless of year of publication or whether they were described as randomized or prospective. Other studies were evaluated only if they were published in 1980, or later, and included 10 or more patients. Only English-language articles were retrieved. After retrieval, documents were examined to ensure that they did not contain flaws (e.g. confounding, incomparable study groups) precluding interpretation of results.

Data Collection and Analysis. Data about trial design, patient signs, symptoms, comorbidities, characteristics, and treatments, treatment outcomes and diagnostic measurements were abstracted from articles meeting inclusion criteria using electronic forms. Data were meta-analyzed when possible. Other analyses included corrections for patient attrition, statistical power analyses, multiple regression analyses, effect size computation, determinations of statistically significant differences between patient characteristics and verification of diagnostic test characteristics.

Main Results

The literature describing these disorders is often of poor quality, with few studies addressing any given issue. The evidence currently available suggests the following tendencies:

Two diagnostic tests for CTS, distal motor latency and palmar sensory latency, appear to have high specificity and low-to-moderate sensitivity.

Patients who have undergone surgery for CTS are predominantly middle aged and female. It is not possible to determine the characteristics of those undergoing surgery for the other three conditions.

Studies comparing open and endoscopic carpal tunnel release show a small but statistically significant advantage for endoscopic release, despite a higher rate of complications and reoperation compared to open release.

CTS patients benefit, but may not recover fully or permanently after steroid injection into the carpal tunnel.

Published data do not support the use of neurolysis, ligament reconstruction, or ultrasound for most CTS patients.

Laser therapy does not appear to be an effective treatment for epicondylitis.

Patients with epicondylitis who were treated with acupuncture had better global outcomes and greater pain relief than patients given sham acupuncture.

Conclusions. Published literature describing the diagnosis, treatment and impact of worker-related upper-extremity disorders is diffuse and generally of low quality, making it difficult to come to firm evidence-based conclusions. There are trends in available data, but it is often difficult to quantify them.

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