

Physiotherapy and Occupational Therapy Evidence-Based Intervention after Carpal Tunnel Release. Literature Review

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Main objective of this study is to review the effectiveness and safety of rehabilitation interventions following CTR compared with another intervention in order to provide a complete, exhaustive summary of current literature relevant to treatment after CTR.

Methods

Search Methods

The following electronic databases were searched through January 1996 until March 2016 (20 last years): PubMed, EMBASE, Cochrane Central Register of Controlled Trials, CINAHL, Physiotherapy and Evidence Database (PEDro). The literature search was performed by selecting clinical trials and systematic reviews based on the post-surgical procedure used in patients with carpal tunnel.

Keywords Carpal tunnel syndrome, Median nerve, Median neuropathy, Entrapment neuropathy carpal tunnel, Carpal tunnel syndrome release and CTS post-surgical intervention. The titles and abstracts of identified articles were checked against pre-determined criteria for eligibility and relevance to form an inclusion set.

Selection of the studies

Systematic reviews, meta-analyses and Randomized or quasi-randomized Controlled Trials (RCTs) studies that compare postoperative rehabilitation treatment with another rehabilitation treatment.

Were included all studies with participants over 18, diagnosis of CTS (as defined by the authors of each study) who have been operated, endoscopically or via any open technique who have received postoperative rehabilitation treatments as: manual physical therapy, exercise, desensitization, orthosis, scar management, edema management, electrotherapy, passive physical modalities and ergonomic modification that used as outcome measurement the Boston Carpal Tunnel Questionnaire (BCTQ), Disabilities of the arm, shoulder and hand questionnaire (DASH), pain referred by the patient, return to work or occupation and grip and pinch force.

We excluded any intervention before surgery and studies that compared surgery with rehabilitation interventions or any interventions provided before surgery, and interventions that were not considered to be rehabilitation treatment, for example, postoperative analgesia.

For selection of the study two researchers independently examined the titles and abstracts of trials for possible inclusion. Each of these authors compiled a list of trials that met the inclusion criteria and studies that not meet the inclusion criteria were eliminated. Full text of all studies included and discrepancies were resolved through discussion with a third review author.

Results were analyzed using a rating system with levels of evidence for each extracted outcome [14]. These levels are:

- Strong evidence: consistent findings among multiple high quality RCTs;
- Moderate evidence: consistent findings among multiple low quality RCTs and/or one high quality RCT;
- Limited evidence: one low quality RCT; Conflicting evidence: inconsistent findings among multiple trials;
- No evidence from trials.

Result

Figure 1 reports the search strategy, number of studies retrieved and the number of studies excluded. Using as keyword carpal tunnel syndrome 1599 studies was identified. In a first analysis we identify 35 duplicated articles. After reading title and abstracts 127 studies were eliminated because they did not meet the inclusion criteria. Eleven full text articles were assessed for eligibility. Two of them did not meet the inclusion criteria because did not address post-surgical recovery treatments with rehabilitation.

Group 1 used
a splint
(exercises

Cebesoy O 40
et al. [21]

blind trial with 102 patients in order to see if plaster slab could reduce

- 6 Yazdanpanah P, Aramesh S, Mousavizadeh A, Ghafari P, Khosravi Z, et al. (2012) Prevalence and severity of carpal tunnel syndrome in women. *Iran J Public Health* 41: 105-110.
- 7 Burton CL, Chesterton LS, Chen Y, van der Windt DA (2016) Clinical Course and Prognostic Factors in Conservatively Managed Carpal Tunnel Syndrome: A Systematic Review. *Arch Phys Med Rehabil* 97: 836-852.
- 8 Piazzini DB, Aprile I, Ferrara PE, Bertolini C, Tonali P, et al. (2007) A systematic review of conservative treatment of carpal tunnel syndrome. *Clin Rehabil* 21: 299-314.
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- 11.