

Comparative Effectiveness of Injection Therapies in Rotator Cuff Tendinopathy: A Systematic Review, Pairwise and Network Meta-analysis of Randomized Controlled Trials.

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Abstract

OBJECTIVE:

To compare the effectiveness of diverse injections in patients with rotator cuff tendinopathy using pairwise and network meta-analysis.

DATA SOURCES:

PubMed, EMBASE, Scopus and Cochrane Library were searched for studies published up to September 31, 2017.

STUDY SELECTION:

We included all published or unpublished randomized controlled trials (RCTs) comparing diverse injections including corticosteroid, nonsteroidal anti-inflammatory drugs, hyaluronic acid, botulinum toxin, platelet-rich plasma (PRP), and prolotherapy in patients with rotator cuff tendinopathy. Among the 1495 records screened, 18 studies were included in the meta-analysis.

DATA EXTRACTION:

The quality of RCTs was assessed with Cochrane Risk of Bias Tool by two independent raters. The primary outcome was pain reduction, and the secondary outcome was functional improvement.

DATA SYNTHESIS:

Standardized mean difference (SMD) was utilized for pairwise and network meta-analysis. In pairwise meta-analysis, corticosteroid was more effective only in the short-term in both pain reduction and functional improvement. Network meta-analysis indicated that prolotherapy significantly reduced pain compared with placebo in the long-term [over 24 weeks, SMD: 2.63, 95% confidence interval (CI): 1.88-

3.38]; meanwhile PRP significantly improved shoulder function compared with placebo in the long-term (over 24 weeks, SMD: 0.44, 95% CI: 0.05-0.84).

CONCLUSIONS:

For patients with rotator cuff tendinopathy, corticosteroid plays a role in the short-term (3-6 weeks) but not in long-term (over 24 weeks) pain reduction and functional improvement. By contrast, PRP and prolotherapy may yield better outcomes in the long-term (over 24 weeks). On account of heterogeneity, interpreting these results with caution is warranted.

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KEYWORDS:

injection therapies; meta-analysis; rotator cuff tendinopathy

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