

NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

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Title

Prolotherapy for Chronic Ankle Instability Improves Postural Balance and Reduces Recurrent Sprains: Results of a 1-year RCT

Priority 1 (Research Category)

Musculoskeletal and rheumatology

Presenters

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Abstract

CONTEXT Chronic ankle instability (CAI) is common in primary care; up to 43% patients report residual instability and 21.4% report recurrent sprains after conservative care. Better non-surgical care is needed. OBJECTIVE We evaluated the efficacy of the regenerative injection dextrose prolotherapy (DPT), an emerging non-opioid pain procedure, compared with normal saline (NS) control injections as assessed by change in self-reported and objectively-assessed ankle stability, and ankle re-sprain rates, over 12 months. STUDY DESIGN/ANALYSIS/SETTING Blinded RCT; analysis by intention-to-treat and generalized estimating equations models; outpatient. POPULATION Participants met criteria of CAI by International Ankle Consortium Position Statement, ultrasound evidence of anterior talofibular ligament (ATFL) laxity, at least one ankle sprain within 12 months, and Cumberland Ankle Instability Tool (CAIT) score ≤ 24 . INTERVENTION Participants received DPT or NS injections to the anterior talofibular ligament (ATFL) attachment under in-plane ultrasound guidance on the talus and fibula at 0, 4, 8, and 16 weeks. OUTCOME The primary outcome was the CAIT (0-30 points); secondary outcomes included the Star Excursion Balance Test (SEBT), number of ankle re-sprains, and satisfaction. Assessment was at baseline and 16, 26, and 52 weeks;

RESULTS: Randomization produced two 57-participant groups (57 % female; 49.9 ± 14.8 years) without baseline differences. DPT and NS injections resulted in clinically meaningful improvements in the CAIT at 26 and 52 weeks but without difference between groups. However, DPT participants demonstrated a statistically significant improvement in SEBT compared to control, with a difference-in-difference estimate of 4.46 points ([CI] -0.51 to 8.41, $P=0.027$) at 26 weeks, and 4.27 points (CI 0.26 to 8.29, $P=0.037$) at 52 weeks. The number of re-sprains was significantly reduced in the DPT group compared with control (adjusted odds ratio 2.88 (CI 1.21 to 6.89, $P=0.017$)). Satisfaction with DPT was high; no procedure-related adverse events were reported. CONCLUSION: Participants with CAI receiving DPT

injections to the ATFL improved self-reported ankle stability compared to baseline status; they improved objectively-assessed performance in SEBT at 26 and 52 weeks, and experienced fewer re-sprains at 52 weeks, compared with those receiving saline injections.

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