



Dextrose Prolotherapy for Knee Osteoarthritis: A Randomized Controlled Trial

David Rabago, MD¹↑, Jeffrey J. Patterson, DO¹, Marlon Mundt, PhD¹, Richard Kijowski, MD², Jessica Grettie, BS¹, Neil A. Segal, MD, MS³ and Aleksandra Zgierska, MD, PhD¹

+ Author Affiliations

+ Author Affiliations

CORRESPONDING AUTHOR: David Rabago, MD, Department of Family Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI 53715, david.rabago@fammed.wisc.edu

Abstract

PURPOSE Knee osteoarthritis is a common, debilitating chronic disease. Prolotherapy is an injection therapy for chronic musculoskeletal pain. We conducted a 3–arm, blinded (injector, assessor, injection group participants), randomized controlled trial to assess the efficacy of prolotherapy for knee osteoarthritis.

METHODS Ninety adults with at least 3 months of painful knee osteoarthritis were randomized to blinded injection (dextrose prolotherapy or saline) or at-home exercise. Extra- and intra-articular injections were done at 1, 5, and 9 weeks with as-needed additional treatments at weeks 13 and 17. Exercise participants received an exercise manual and in-person instruction. Outcome measures included a composite score on the Western Ontario McMaster University Osteoarthritis Index (WOMAC; 100 points); knee pain scale (KPS; individual knee), post-procedure opioid medication use, and participant satisfaction. Intention-to-treat analysis using analysis of variance was used.

RESULTS No baseline differences existed between groups. All groups reported improved composite WOMAC scores compared with baseline status ($P < .01$) at 52 weeks. Adjusted for sex, age, and body mass index, WOMAC scores for patients receiving dextrose prolotherapy improved more ($P < .05$) at 52 weeks than did scores for patients receiving saline and exercise (score change: 15.3 ± 3.5 vs 7.6 ± 3.4 , and 8.2 ± 3.3 points, respectively) and exceeded the WOMAC-based minimal clinically important difference. Individual knee pain scores also improved more in the prolotherapy group ($P = .05$). Use of prescribed postprocedure opioid medication resulted in rapid diminution of injection-related pain. Satisfaction with prolotherapy was high. There were no adverse events.

CONCLUSIONS Prolotherapy resulted in clinically meaningful sustained improvement of pain, function, and stiffness scores for knee osteoarthritis compared with blinded saline injections and at-home exercises.

Key Words:

- randomized controlled trial
- osteoarthritis
- knee
- prolotherapy
- dextrose

TRACK Comments:

David Rabago

Author response to recipe question in Dextrose Prolotherapy for Knee Osteoarthritis: A Randomized Controlled Trial

Ann Fam Med published online June 20, 2013

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Ann Fam Med published online June 27, 2013

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Author response to Beth A Fox RE Prolotherapy for Knee OA

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Ann Fam Med published online September 10, 2013

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Commentary on 'Dextrose prolotherapy for knee osteoarthritis: a randomized controlled trial'

Ann Fam Med published online August 12, 2013

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