

ORIGINAL RESEARCH ARTICLES

Effect of Regenerative Injection Therapy on Function and Pain in Patients with Knee Osteoarthritis: A Randomized Crossover Study

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Abstract

Objective. We assessed the effectiveness of regenerative injection therapy (RIT) to relieve pain and restore function in patients with knee osteoarthritis.

Design. Crossover study where participants were randomly assigned to receive exercise therapy for 32 weeks in combination with RIT on weeks 0, 4, 8, and 12 or RIT on weeks 20, 24, 28, and 32.

Patients. Thirty-six patients with chronic knee osteoarthritis.

Interventions. RIT, which is made up of injections of 1 cc of 15% dextrose 0.6% lidocaine in the collateral ligaments and a 5 cc injection of 20% dextrose 0.5% lidocaine inside the knee joint.

Outcome Measures. The primary outcome was the Western Ontario and McMaster Universities Osteoarthritis Index of severity of osteoarthrosis symptoms (WOMAC) score (range: 0–96).

Results. Following 16 weeks of follow-up, the participants assigned to RIT presented a significant reduction of their osteoarthritis symptoms (mean \pm standard deviation: -21.8 ± 12.5 , $P < 0.001$). WOMAC scores in this group did not change further during the last 16 weeks of follow-up, when the participants received exercise therapy only (-1.2 ± 10.7 , $P = 0.65$). WOMAC scores in the first 16 weeks did not change significantly among the participants receiving exercise therapy only during this period (-6.1 ± 13.9 , $P = 0.11$). There was a significant decrease in this groups' WOMAC scores during the last 16 weeks when the participants received RIT (-9.3 ± 11.4 , $P = 0.006$). After 36 weeks, WOMAC scores improved in both groups by 47.3% and 36.2%. The improvement attributable to RIT alone corresponds to a 11.9-point (or 29.5%) decrease in WOMAC scores.

Conclusions. The use of RIT is associated with a marked reduction in symptoms, which was sustained for over 24 weeks.

Key Words. Knee Osteoarthritis; Regenerative Injection Therapy; Exercise Therapy; Pain Management; Randomized Controlled Study

Introduction

Osteoarthritis (OA) of the knee is the most frequent form of arthritis in older adults. Symptomatic knee disease occurs in approximately 6% of U.S. adults over the age of 30 and in 10% over the age of 55 [1]. The risk of disability from knee OA was suggested to be comparable with the risk attributed to cardiovascular diseases and greater than any other medical condition in the elderly [2]. Most of the available therapies for OA address the symptoms of the condition but not its underlying mechanisms. Moreover,