

The effects of ultrasound-guided corticosteroid injection compared to oxygen-ozone (O₂-O₃) injection in patients with knee osteoarthritis: a randomized controlled trial.

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Abstract

Osteoarthritis (OA) is a chronic multifactorial disease characterized by progressive joint degeneration. The purpose of this study was to compare the effects of ultrasound-guided corticosteroid injection with oxygen-ozone injection in patients with knee OA. This double-blind randomized clinical trial was performed on 62 patients with knee OA. The patients were randomly divided into two groups. In the first group 40 mg triamcinolone (1 cc) and in the second group 10 cc (15 µg/ml) oxygen-ozone (O₂-O₃) were injected into the knee joint under ultrasound guidance. Outcome measures included the Western Ontario and McMaster Universities Osteoarthritis (WOMAC), knee flexion range of motion (ROM), effusion in ultrasound images of the suprapatellar recess, and visual analog scale (VAS), which were evaluated before injection, 1 week, 1 month, and 3 months after the treatment. Sixty-two patients (10 men and 52 women) were enrolled with mean age of 57.9 years. VAS improved in both groups (steroid P value = 0.001, oxygen-ozone P value > 0.001). The improvements seen in VAS and WOMAC scores 3 months after treatment were in favor of the oxygen-ozone group when compared to the steroid group (P = 0.041 vs P = 0.19). There was no significant difference between the two groups in ROM and joint effusion seen under ultrasound (ROM p = 0.880, effusion p = 0.362). However, in the oxygen-ozone-receiving group, joint effusion was decreased significantly (p < 0.001). Both steroid and oxygen-ozone injections are effective in patients with knee osteoarthritis. Our study showed that the effects of oxygen-ozone injection last longer than those of steroid injection to the knee joint.