FPIN's Clinical Inquiries

Trigger Point Injection for Low Back Pain

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Clinical Question

Is trigger point injection therapy an effective treatment for low back pain?

Evidence-Based Answer

Trigger point injections with lidocaine or saline can be used for patients presenting to the emergency department with acute low back pain. (Strength of Recommendation: B, consistent, small randomized controlled trials [RCTs].) Trigger point injections, compared with intravenous nonsteroidal anti-inflammatory drugs (NSAIDs) or standard care, reduce pain by 2 to 3 points on a 10-point pain scale, decrease the length of stay in the emergency department by two hours, and decrease the short-term need for opioids by almost 50%.

Evidence Summary

A 2019 RCT of 54 adults in Turkey compared the effectiveness of trigger point injections to intravenous NSAIDs.[1] Participants presented to the emergency department with at least one trigger point as the cause of acute low back pain. Trigger points were diagnosed using the Delphi consensus criteria of a taut band, hypersensitive spot, and referred pain. One physician performed trigger point injections in the treatment group using a mixture of 2% lidocaine and saline. The comparison group received 50 mg of dexketoprofen (not available in the United States) in 100 mL of isotonic solution over five minutes. Visual analog scale (VAS) scores for pain on a 0 to 10 scale were obtained at zero, five, 10, 15, 30, and 60 minutes. At zero minutes, the mean VAS scores were similar in both groups (7.6 vs. 7.2; $P = .339$). At all other time intervals, the mean pain scores in the intervention group were significantly lower than in the NSAID group (five minutes; 2.8 vs. 6.2; $P < .001$), and this difference in pain persisted throughout the study (60 minutes; 0.4 vs. 2.6; $P < .0001$).

A 2020 single-center, prospective, randomized trial of 52 adults in the United States diagnosed with myofascial back or neck pain in the emergency department compared the effectiveness of trigger point injection with anesthetic vs. standard of care.[2] Patients met diagnostic criteria if they had a palpable taut band that reproduced their pain when depressed. The intervention group received a 1-mL injection of 1% lidocaine at a palpated trigger point. The usual care group received medical therapy at the discretion of their treating physician, excluding trigger point injections or other procedures such as acupuncture or dry needling. The primary outcome was the mean difference in pain score using a numeric rating scale of 0 to 10 immediately after and 20 minutes postintervention. The treatment group reported a significant decrease in pain scores compared with the usual care group at 20 minutes (mean difference = −3.0; 95% CI, −4.2 to −1.8; $P = .001$). The treatment group also had a statistically significant shorter median length of stay in the emergency department compared with the usual care group (2.6 vs. 4.6 hours; $P < .001$). Trigger point injection resulted in fewer opioid prescriptions at discharge compared with standard care (2.9% vs. 47%; $P = .001$)

A 2021 single-center, prospective, unblinded RCT of 112 adults 18 to 65 years of age presenting

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to the emergency department in Turkey with nonspecific low back pain of unclear chronicity compared the effectiveness of intradermal sterile water injection with an intravenous NSAID to intravenous NSAID alone.[3] Patients had a pain score of 4 or more on the VAS (1 to 10 points). The intervention group received 50 mg of intravenous dexketoprofen trometamol (not available in the United States) immediately followed by four intradermal 0.1-mL injections of sterile water at trigger points in the right or left lumbar region with 3 cm between each injection point. The standard care group received 50 mg of intravenous dexketoprofen alone. The primary outcome was a change in pain intensity as measured by the VAS score from application to 10, 20, 30 minutes, and 24 hours postintervention. Secondary outcomes included the need for opioids and total analgesic used within 24 hours of the initial treatment. There were no significant differences in VAS scores between groups at the time of intervention. At all other time intervals, the intervention group reported significantly greater pain relief than the control group (24 hours; 1.3 vs. 5.5; $P < .00012$). The intervention group had a higher rate of opioid avoidance than the control group (76.8% vs. 10.7%; $P < .001$), and a lower percentage of patients needed additional opioids if they were used (12.5% vs. 50%; $P < .001$).

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