FPIN's Clinical Inquiries

Dry Needling for Low Back Pain

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Clinical Question

Is dry needling an effective treatment for chronic low back pain?

Evidence-Based Answer

A comprehensive treatment program that includes dry needling may provide some benefit in decreasing pain scores and perceived disability vs. standard physical therapy (PT) and home PT in the short term. However, this improvement is small, and the clinical significance is questionable. (Strength of Recommendation: B, randomized controlled trials [RCTs].) Additional research is needed to determine the best regimens to augment dry needling.

Evidence Summary

A 2016 single-blind RCT of adult patients (n = 58) with discogenic radicular back pain examined the effectiveness of dry needling plus PT vs. standard PT, which included transcutaneous electrical nerve stimulation (TENS), thermal modalities, and ultrasonography.[1] All patients received 10 sessions of PT every other day. At the end of PT sessions on even-numbered days, the dry needling group had 3- to 6-cm traditional acupuncture needles inserted into a trigger point or taut band; the needles were left in place until there was no more pain or twitching. Pain and disability were assessed using a visual analog scale (VAS; scored from 0 to 100) and the Oswestry Disability Index (scored from 1 to 50, with higher scores reflecting more notable disability) at the end of the session and two months later. There were no differences between the groups using dry needling plus PT vs. PT alone in baseline pain intensity on the VAS (79.0 vs. 74.1; $P = .12$) or Oswestry Disability Index (40.1 vs. 40.1; $P = .93$). The dry needling plus PT group had statistically lower postintervention VAS scores vs. PT alone (45.5 vs. 37.2; $P = .04$) and improved Oswestry Disability Index scores (32.7 vs. 28.5; $P = .03$), which persisted at the two-month follow-up (VAS = 42.4 vs. 25.2; $P = .008$; Oswestry Disability Index = 30.3 vs. 22.2; $P = .003$). This study was limited by the short follow-up period.

A 2017 single-blind RCT of adult patients (n = 34) who had chronic low back pain due to lumbar disk hernia examined the effectiveness of dry needling plus massage vs. a traditional PT program.[2] Both groups received treatment twice per week for a total of six sessions. Participants in the intervention group received Swedish massage, and dry needling was performed on active or latent trigger points (.4- or .6-mm needles inserted for 20 minutes, with rolling of the needle handle at 10 minutes to restimulate the area). Participants in the control group were asked to complete an at-home exercise program twice per day with a hot pack applied for 20 minutes, followed by burst TENS and constant ultrasonography during treatment. Before the intervention, the dry needling plus massage group had a baseline VAS score (0 to 10) of 2.5 vs. 2.4 for the control group. On the short-form McGill Pain Questionnaire (SF-MPQ; 0 to 45, with higher scores indicating more severe pain), the dry needling plus massage group had a total pain score of 7.1 vs. 7.8 for the control group. At the end of the three-week intervention, both

groups had significant decreases in total pain. After treatment comparisons, the dry needling plus massage group reported lower VAS scores (0.6 vs. 3.3 in the control group; $P < .05$) and lower total pain scores on the SF-MPQ (0.6 vs. 3.8 in the control group; $P < .05$). The dry needling plus massage group also had fewer trigger points (4.3 vs. 7.8 in the control group; $P < .05$) and lower fear of movement on the Tampa Scale of Kinesiophobia (rated on a 17- to 68-point scale; 37.8 vs. 45.4 in the control group; $P < .05$). No adverse effects were noted. Study limitations included smaller sample size, limited follow-up, and single-blinding.

A 2019 RCT of adults (n = 65) examined the effects of dry needling vs. nonthrust manipulation in patients with nonspecific low back pain.[3] Both groups received two visits per week for three weeks, for a total of six visits. The intervention group received five to seven minutes per session of dry needling (i.e., 50-mm needles were inserted into paraspinal muscles bilaterally at, above, and below the spinal level of pain, and then into the peripheral lower extremity matching nerve root distribution; 22 total needles were used). This was compared with semistandard nonthrust manipulation (a technique involving "repetitive, rhythmic, passive oscillatory movement, applied with either small or large amplitude to a symptomatic spinal level"). All patients were advised to complete a daily standardized home exercise program. There were no clinically or statistically significant differences between the groups at weeks 2, 4, or 6 in any primary or secondary outcomes. However, both groups experienced statistically significant within-group improvements from baseline to six weeks. First, the Oswestry Disability Index scores (scale = 0% to 100% disabled) improved. In the dry needling group, the mean difference (MD) from baseline was −17.2% (95% CI, −12.3% to −22.2%); in the nonthrust manipulation group, the MD was −10.6% (95% CI, −6.9% to −14.2%). Patient-specific functional scale scores also improved. A maximum score of 10 meant the patient was able to perform at the level they could before the injury occurred. The MD in the dry needling group was 3.8 (95% CI, 2.8 to 4.7) and the MD in the nonthrust manipulation group was 2.4 (95% CI, 1.6 to 3.2). Finally, the numeric pain rating scale (1 to 10) was lower. The MD in the dry needling group was −2.5 (95% CI, −1.6 to −3.3) and the MD in the nonthrust manipulation group was −1.7 (95% CI, −0.1 to −2.4). Neither group reported statistically significant improvement in the pressure pain threshold. Adverse effects were not listed in the report. This RCT was limited by the lack of complete standardization of treatments, especially the dry needling technique, and limited follow-up.

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References

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