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The effectiveness of radial shockwave therapy on myofascial pain syndrome: a two-armed, randomized double-blind placebo-controlled trial

Abstract:

Background: Myofascial pain syndrome (MPS) is a common, costly, and often persistent musculoskeletal condition. Radial shockwave therapy (RSWT) is one of the most frequently used treatments for MPS. However, there is limited evidence to support its short-term effectiveness, primarily due to the poor methodological quality of the studies. This study aimed to determine the effectiveness of radial shockwave therapy, compared with placebo treatment, in patients with MPS in the neck and upper back.

Method: A two-armed, randomized, double-blind, placebo-controlled trial was carried out in an outpatient physical rehabilitation department in a tertiary hospital. The sample comprised 70 adults aged 18 years or above with MPS. The intervention group received six treatment sessions. These consisted of RSWT: 1.5 bars (0.068 mJ/mm2), 2000 pulses, and a frequency of 15 Hz; and standard physical therapy stretches and exercises, including therapeutic home exercises. The control group received an identical treatment regime, except that they received a no-energy shock (nontherapeutic dose) of 0.3 bar (0.01 mJ/mm2). The outcome measures were the numeric pain score (NPS), neck disability index (NDI), pressure pain threshold (PPT), and SF-12 score at the 4-, 8-, and 12-week follow-ups.

Results: The study revealed a significant improvement ($p < 0.05$) in the NPS and PPT at the follow-up assessments (0–4, 0–8, and 0–12 weeks). The placebo group showed a significant difference in NDI scores at all intervals, whereas the shockwave group only showed significant improvement at 0–4 weeks. The shockwave group did not have significant changes in SF-12 scores, whereas the placebo group showed significant improvement in the SF physical score between 0–8 weeks ($p = 0.01$) and 0–12 weeks ($p = 0.02$). No statistically or clinically significant differences were observed between the placebo and shockwave groups across all outcomes at 4, 8, and 12 weeks.

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Conclusion: No significant differences were found between the placebo and shockwave groups at 4, 8, and 12 weeks. However, both groups showed statistically and clinically significant improvements in the NPS and PPT. Both groups showed improvements in the NPS and PPT scores; therefore, we recommend using radial RSWT as an adjunct to standard care, which includes therapeutic home exercises for individuals with MPS.

Keywords: Myofascial pain syndrome, shockwave, physical therapy, randomised controlled trial

Biography: Dr. Collins Ogbeivor is a Consultant Physiotherapist with over 27 years of experience. He serves on the Hospital Research Ethics Committee and as the Director of the Saudi Board for Musculoskeletal Residency at King Faisal Specialist Hospital and Research Centre in Riyadh.

In 2012, he was appointed Consultant Extended Scope Physiotherapist at Virgin Care, UK. He contributed to the 2012 London Olympics and was honored by former UK Prime Minister David Cameron. Recently, he was nominated by the World Physiotherapy Congress 2023 as an Abstract Reviewer and Chair of e-posters for musculoskeletal and pain management. Dr. Ogbeivor has published in peer-reviewed journals, and he is an expert in MSK shoulder and spinal conditions.

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