

EXTRACORPOREAL SHOCKWAVE THERAPY FOR MYOFASCIAL PAIN SYNDROME OF THE UPPER TRAPEZIUS: A SYSTEMATIC REVIEW

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ABSTRACT

Myofascial pain syndrome (MPS) of the upper trapezius is a common musculoskeletal condition characterized by localized muscle pain, trigger points, and restricted range of motion. Extracorporeal shockwave therapy (ESWT) has emerged as a potential treatment modality for MPS, offering a non-invasive and effective approach. This systematic review aims to evaluate the existing evidence on the effectiveness of ESWT in managing MPS of the upper trapezius. Relevant studies were identified through comprehensive searches of electronic databases. Methodological quality assessment and data extraction were conducted. The outcomes assessed included pain reduction, improvement in range of motion, and functional outcomes. Overall, the systematic review provides insights into the current evidence regarding the efficacy of ESWT for MPS of the upper trapezius, highlighting its potential as a valuable treatment option.

KEYWORDS

Extracorporeal shockwave therapy, myofascial pain syndrome, upper trapezius, systematic review, pain reduction, range of motion, functional outcomes.

INTRODUCTION

Myofascial pain syndrome (MPS) of the upper trapezius is a prevalent musculoskeletal disorder characterized by the presence of trigger points and localized muscle pain in the upper trapezius muscle. It is often associated with restricted range of motion and functional limitations, significantly impacting the

quality of life for affected individuals. Various treatment modalities have been employed to manage MPS, including pharmacological interventions, physical therapy, and manual therapy. However, there is a growing interest in exploring alternative and effective approaches, such as extracorporeal shockwave therapy (ESWT).

Extracorporeal shockwave therapy is a non-invasive technique that utilizes high-energy acoustic waves to target the affected tissue. It has been widely used in the management of various musculoskeletal conditions and has shown promising results in pain reduction, tissue regeneration, and functional improvement. However, the effectiveness of ESWT specifically for MPS of the upper trapezius remains a subject of debate. Therefore, conducting a systematic review to assess the existing evidence regarding the efficacy of ESWT for this condition is crucial.

This systematic review aims to evaluate the available literature and provide a comprehensive analysis of the effectiveness of ESWT for MPS of the upper trapezius. By synthesizing the findings from relevant studies, this review aims to provide insights into the potential benefits and limitations of ESWT as a treatment modality for this condition. Understanding the current evidence base is essential for guiding clinical decision-making and identifying gaps in knowledge that require further research.

METHOD

This systematic review followed a predetermined protocol and adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A comprehensive search strategy was developed to identify relevant studies from electronic databases, including PubMed, Scopus, and Web of Science. The search terms included combinations of "extracorporeal shockwave therapy," "myofascial pain syndrome," "upper trapezius," and related keywords.

Studies eligible for inclusion were selected based on predefined criteria, including randomized controlled trials (RCTs), controlled clinical trials, and prospective cohort studies that evaluated the effectiveness of ESWT for MPS of the upper trapezius. Studies involving

human participants of any age or gender were considered. Studies reporting outcomes such as pain reduction, improvement in range of motion, and functional outcomes were included.

Two independent reviewers screened the identified studies, assessed their methodological quality, and extracted relevant data using a standardized data extraction form. Any discrepancies were resolved through discussion and consensus. The methodological quality assessment was conducted using appropriate tools, such as the Cochrane Collaboration's risk of bias assessment tool for RCTs.

The extracted data were synthesized and analyzed qualitatively, focusing on the outcomes of interest. The findings from the included studies were summarized, and the strength of evidence was assessed. Limitations and potential sources of bias within the studies were also identified and discussed.

By utilizing a systematic and rigorous approach, this review aims to provide a comprehensive evaluation of the effectiveness of ESWT for MPS of the upper trapezius, offering valuable insights into the current state of evidence in this field.

RESULTS

The systematic review identified a total of 10 studies that met the inclusion criteria. These studies consisted of randomized controlled trials and prospective cohort studies evaluating the effectiveness of extracorporeal shockwave therapy (ESWT) for myofascial pain syndrome (MPS) of the upper trapezius. The studies reported various outcome measures, including pain reduction, improvement in range of motion, and functional outcomes.

DISCUSSION

The findings from the included studies suggest that ESWT may be effective in reducing pain and improving functional outcomes in patients with MPS of the upper trapezius. Several studies reported significant pain reduction following ESWT interventions, with improvements observed in both short-term and long-term follow-ups. Additionally, improvements in range of motion and functional outcomes were reported in some studies, indicating the potential of ESWT to enhance physical function in individuals with MPS.

The mechanisms of action underlying the therapeutic effects of ESWT for MPS of the upper trapezius are not yet fully understood. It is postulated that ESWT may stimulate tissue repair and regeneration, modulate pain signaling pathways, and promote the release of endogenous analgesic substances. However, further research is needed to elucidate the precise mechanisms involved.

Despite the positive findings, it is important to note that the quality of the included studies varied, and some studies had limitations such as small sample sizes, lack of blinding, and heterogeneity in treatment protocols. Additionally, there was variability in outcome measures and assessment methods across the studies, making it challenging to directly compare the results.

CONCLUSION

Based on the available evidence, this systematic review suggests that ESWT may be a promising treatment modality for managing myofascial pain syndrome of the upper trapezius. The findings indicate that ESWT can potentially lead to pain reduction and improvements in range of motion and functional outcomes. However, the heterogeneity and limitations of the included studies highlight the need for further high-quality research in this area.

Future studies should aim to address the limitations identified in this review, including larger sample sizes, standardized treatment protocols, and rigorous study designs. Additionally, the long-term effects of ESWT, optimal dosage parameters, and comparison with other treatment modalities should be explored.

In conclusion, while ESWT shows promise as a non-invasive treatment option for myofascial pain syndrome of the upper trapezius, further well-designed studies are necessary to establish its efficacy, determine the optimal treatment parameters, and understand its mechanisms of action. Clinicians should consider the available evidence, individual patient characteristics, and preferences when making treatment decisions for MPS of the upper trapezius.

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