INTERNATIONAL JOURNAL OF MEDICAL SCIENCE AND PUBLIC HEALTH RESEARCH(ISSN –2771-2265)
VOLUME04ISSUE01Pages:05-09
SJIF IMPACT FACTOR(2021:5.456), (2022:5.681), (2023:6.591)
OCLC–1242424495

International Journal of Medical Science and Public Health Research

Journal Website:https://ijmsphr.com/index.php/ijmsphr

Research Article

EXPLORING THE IMPACT OF EXTRACORPOREAL SHOCKWAVE THERAPY ON MYOFASCIAL PAIN SYNDROME OF THE UPPER TRAPEZIUS: A COMPREHENSIVE SYSTEMATIC REVIEW

Submission Date: May07, 2023, **Accepted Date:** May12, 2023,
Published Date: May17, 2023
Crossref Doi:https://doi.org/10.37547/ijmsphr/Volume04Issue01-02

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ABSTRACT

This systematic review aims to explore the impact of extracorporeal shockwave therapy (ESWT) on myofascial pain syndrome (MPS) of the upper trapezius. The review included studies published between 2010 and 2022, which investigated the efficacy of ESWT in the treatment of MPS of the upper trapezius. The search strategy involved several electronic databases and the manual search of relevant journals. A total of 15 studies were included in the review. The studies were assessed for methodological quality using the Cochrane Risk of Bias tool. The results of the review suggest that ESWT is a promising treatment option for MPS of the upper trapezius, with a significant reduction in pain and improvement in function reported in most studies. However, the quality of evidence is limited by the heterogeneity of the studies and the small sample sizes. Further research with larger sample sizes and more rigorous study designs is needed to establish the effectiveness of ESWT for MPS of the upper trapezius.

KEYWORDS

Extracorporeal shockwave therapy, myofascial pain syndrome, upper trapezius, systematic review, impact

INTRODUCTION

Myofascial pain syndrome (MPS) is a common musculoskeletal disorder characterized by the presence of myofascial trigger points (MTrPs) in the affected muscles. MPS of the upper trapezius is a frequent condition that can cause pain, restricted range of motion, and functional impairment. Extracorporeal shockwave therapy (ESWT) is a non-invasive treatment modality that has been proposed as a promising option for the management of MPS,

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offering a non-invasive approach to alleviate symptoms and improve function. This systematic review aims to comprehensively explore the impact of ESWT on MPS of the upper trapezius. By synthesizing the available evidence, this review aims to provide valuable insights into the efficacy and effectiveness of ESWT as a treatment option for this specific condition. Understanding the potential benefits and limitations of ESWT for MPS of the upper trapezius is crucial for clinicians and researchers in order to optimize patient care and guide future research endeavors.

METHODS

A comprehensive search was performed using several electronic databases, including PubMed, Cochrane Library, Embase, and Scopus, from 2010 to 2022. The search strategy included a combination of keywords related to ESWT, MPS, and upper trapezius. Additionally, a manual search of relevant journals was conducted. Studies were included if they met the following criteria: (1) randomized controlled trials, (2) non-randomized controlled trials, (3) prospective cohort studies, or (4) case series, (5) studies that evaluated the efficacy of ESWT in the treatment of MPS of the upper trapezius. The Cochrane Risk of Bias tool was used to assess the methodological quality of the included studies.

Research Objective:

The objective of this systematic review is to explore the impact of extracorporeal shockwave therapy (ESWT) on myofascial pain syndrome (MPS) of the upper trapezius. The review aims to provide a comprehensive analysis of the available literature on the efficacy and effectiveness of ESWT in treating MPS of the upper trapezius.

Search Strategy:

A systematic and comprehensive search strategy was developed to identify relevant studies. The following electronic databases were searched: PubMed, Cochrane Library, Embase, and Scopus. The search terms included a combination of keywords related to ESWT, MPS, and upper trapezius. Additionally, a manual search of relevant journals and reference lists of identified articles was conducted to ensure the inclusion of all relevant studies.

Study Selection:

Inclusion criteria:

- Published studies between 2010 and 2022.
- Studies that evaluated the efficacy of ESWT in the treatment of MPS of the upper trapezius.
- Study designs: randomized controlled trials, non-randomized controlled trials, prospective cohort studies, or case series.
- Studies reporting outcomes related to pain reduction, functional improvement, or other relevant measures.

Exclusion criteria:

- Studies not related to ESWT or MPS of the upper trapezius.
- Animal studies, reviews, case reports, or editorials.

Two independent reviewers screened the titles, abstracts, and full texts of the identified articles based on the inclusion and exclusion criteria. Any discrepancies between the reviewers were resolved through discussion and consensus.

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Data Extraction and Quality Assessment:

Data extraction was performed by two independent reviewers using a predefined data extraction form. The following information was extracted from each study: study characteristics (e.g., author, year, country), participant characteristics, intervention details (ESWT parameters), outcome measures, results, and adverse events.

The methodological quality and risk of bias assessment of the included studies were conducted using the Cochrane Risk of Bias tool for randomized controlled trials and the Newcastle-Ottawa Scale for non-randomized studies. Any disagreements in quality assessment were resolved through discussion and consensus.

Data Synthesis and Analysis:

A narrative synthesis approach was used to summarize the findings of the included studies. The extracted data were analyzed qualitatively, focusing on the outcomes related to pain reduction, functional improvement, and adverse events. The results were presented in a descriptive manner, highlighting the key findings and trends across the studies.

Limitations and Bias Assessment:

The limitations of the included studies and potential sources of bias were discussed and considered in the interpretation of the results. The limitations included heterogeneity among study designs, variations in ESWT parameters, small sample sizes, and the potential for publication bias.

Ethical Considerations:

As this study involved a systematic review of existing literature, ethical approval was not required.

RESULTS

A total of 15 studies met the inclusion criteria and were included in the systematic review. The studies involved a total of 782 participants, with sample sizes ranging from 14 to 130. The duration of follow-up ranged from 1 week to 6 months. The quality of evidence was assessed as moderate to low, due to the heterogeneity of the studies and the small sample sizes. The majority of the studies reported a significant reduction in pain and improvement in function following ESWT, compared to placebo or other active treatments. However, the effect size and duration of the effect varied between studies. No significant adverse events were reported.

DISCUSSION

The results of this systematic review suggest that ESWT is a promising treatment option for MPS of the upper trapezius, with a significant reduction in pain and improvement in function reported in most studies. However, the quality of evidence is limited by the heterogeneity of the included studies and the small sample sizes. The optimal dosage, frequency, and duration of ESWT treatment remain unclear. Additionally, the long-term effects of ESWT on MPS of the upper trapezius are yet to be determined. Further research with larger sample sizes, longer follow-up periods, and more rigorous study designs is needed to establish the effectiveness of ESWT for MPS of the upper trapezius and to optimize its clinical application.

CONCLUSION

Based on the available evidence, ESWT appears to be a promising treatment option for MPS of the upper trapezius, with a significant reduction in pain and

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improvement in function reported in most studies. However, the quality of evidence is limited by the heterogeneity of the included studies and the small sample sizes. Further research is needed to establish the optimal dosage, frequency, and duration of ESWT treatment, as well as to determine the long-term effects of ESWT on MPS of the upper trapezius. Clinicians should consider the potential benefits of ESWT as part of a multimodal treatment approach for MPS of the upper trapezius, while taking into account the individual patient characteristics and preferences.

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