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Effect Of Instrument Assisted Soft Tissue Mobilization (IASTM) In Trapezitis -A Literature Review

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ABSTRACT

Background: Trapezitis is defined as "an inflammation of neck and upper back muscle" i.e., trapezius which involves myofascial pain syndrome. Most of the time, pain arises due to working in a static position, stress, tension, and non-ergonomic posture. The present review of literature has been undertaken to discover the effect of Instrument Assisted Soft Tissue Mobilization (IASTM) on Trapezitis.

Aim and Objectives: To explore the effect of IASTM in reducing pain, inflammation, and muscle tension in trapezitis, while promoting tissue healing and improving overall function.

Material and Methods: A systematic search was conducted using databases such as PubMed, ResearchGate, Google Scholar, and Scopus. Articles published between 2019 and 2025 were reviewed, focusing on randomized controlled trials (RCTs) relevant to IASTM. Only English-language publications were included. Keywords used in the search strategy included "IASTM," "trapezitis," "myofascial pain," and "soft tissue mobilization."

Conclusion: IASTM is an effective intervention for managing trapezitis, with evidence supporting its role in pain reduction, functional improvement, and tissue healing.

Keywords: Trapezitis, Instrument-Assisted Soft Tissue Mobilization (IASTM), Range of Motion, Pain, Myofascial Pain Syndrome.

INTRODUCTION

Trapezitis refers to inflammation of the trapezius muscle, particularly affecting the upper back and cervical regions. This condition is common in individuals who maintain prolonged static postures, such as those involved in desk jobs, dentistry, and other visually demanding professions. It predominantly affects middle-aged females, with a prevalence of approximately 13%.[1]

The trapezius muscle is divided into upper, middle, and lower fibers, each responsible for different movements, including shoulder elevation, scapular retraction, and rotation. The upper trapezius is particularly vulnerable to overuse and static strain due to poor posture and repetitive activities. When inflamed, patients often report symptoms like neck stiffness, radiating pain, restricted motion, and trigger point sensitivity.[2]

Common contributing factors include poor ergonomics, long periods of unsupported sitting, high keyboard positions, forward head posture, and tightness in associated musculature such as the pectoralis major and minor.[2] This may lead to muscle shortening, pain, and restricted passive range of motion due to protective spasms. Additionally, psychological stress and poor breathing patterns can exacerbate symptoms by increasing muscular tension.[3]

Recent research highlights the relationship between trapezius muscle activation and pain, necessitating effective interventions like IASTM that not only address the biomechanical dysfunction but also facilitate neuromuscular retraining.

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INSTRUMENT-ASSISTED SOFT TISSUE MOBILIZATION (IASTM)

IASTM is a modern technique designed to alleviate muscle stiffness and promote healing through controlled mechanical stimulation. Initially described by Cyriax in 1982, IASTM involves using stainless steel tools to apply pressure over soft tissue adhesions, enhancing mobility and facilitating tissue repair.[4-5]

The therapy stimulates mechanoreceptors and mechano-nociceptors, helping to break down fascial restrictions and scar tissue, while offering clinicians a mechanical advantage. It is particularly useful for treating myofascial restrictions and enhancing range of motion. The ergonomic design of IASTM tools allows for effective delivery of pressure without straining the therapist's hands.[6]

The primary objectives of IASTM include:

- Breaking down soft tissue fibrosis and scar tissue
- Improving lymphatic drainage and circulation
- Enhancing proprioception and neural activation
- Reducing muscular tension and pain

IASTM is often used in conjunction with other physiotherapeutic approaches such as stretching, neuromuscular re-education, postural correction, and strengthening exercises to produce holistic outcomes.

OBJECTIVE

Assess the effectiveness of IASTM in the management of trapezitis, focusing on pain relief, reduction of inflammation, muscle relaxation, tissue healing, and functional improvement.

METHODOLOGY

Inclusive Criteria

- Age: 20–60 years
- All genders
- Willingness to participate in treatment and follow-ups
- Articles published between 2019–2025
- Randomized Controlled Trials (RCTs)
- English-language studies

Exclusive Criteria

- Presence of trauma or tumour in the cervical region
- Articles published before 2019
- Non-English studies

A systematic review of published literature was conducted following PRISMA guidelines. Key search terms included "trapezitis," "IASTM," "cervical pain," "myofascial release," and "instrument-assisted therapy." Data was extracted and analyzed based on sample size, intervention protocols, outcomes measured, and statistical significance of results.

REVIEW OF LITERATURE

The literature reviewed includes a range of randomized clinical trials (RCTs) that support the efficacy of IASTM in improving clinical outcomes in various musculoskeletal conditions.

1. **Yang Liu et al. (2023)** [7] demonstrated that combining IASTM with blood flow restriction therapy significantly improved soft tissue flexibility and decreased pain in individuals with patellofemoral discomfort.
2. **Shamseldeen et al. (2023)** [8] compared IASTM and external shockwave therapy for treating upper trapezius myofascial pain. Both methods improved the range of motion and reduced symptoms, showing that IASTM is equally effective in myofascial pain management.
3. **Weber et al. (2022)** [9] explored the impact of IASTM on female footballers with low back pain, showing significant improvements in flexibility and fascial mobility.
4. **Rohit Banerjee et al. (2022)** [10] highlighted IASTM's effectiveness in relieving cervicogenic headaches among college students using mobile phones.
5. **Piyush Jain et al. (2022)** [11] contributed extensively to the field, conducting multiple RCTs. His studies showed IASTM, when used in combination with suction therapy and dry needling, resulted in enhanced treatment outcomes for conditions like cervical pain and tennis elbow.
6. In paediatric populations, **Dina Mostafa (2022)** [12] showed improved hamstring flexibility in children with diplegic cerebral palsy using IASTM.
7. Additional studies **Qadree et al., 2022**[13]; **Abdelhamid et al., 2020**[14] demonstrated improved outcomes in sciatic nerve entrapment and mechanical neck pain.

These studies collectively reinforce that IASTM is a valuable addition to rehabilitation protocols for conditions involving muscular stiffness, myofascial trigger points, and range of motion restrictions.

RESULT

A review of fifteen research studies indicates that **Instrument-Assisted Soft Tissue Mobilization (IASTM)** is effective in managing trapezitis by significantly reducing pain, improving muscle length, and enhancing biomechanical function. Several studies, both comparative and standalone, have demonstrated the positive impact of IASTM on range of motion and flexibility.

When compared with other techniques such as **trigger point release** and **Muscle Energy Technique (MET)**, IASTM consistently showed superior results in reducing pain and improving functional outcomes. Overall, the evidence supports the adaptability and effectiveness of IASTM as a valuable intervention in reducing discomfort and improving mobility in individuals with trapezitis.

DISCUSSION

IASTM's action mechanism is based on mechanical stimulation of soft tissues, which disrupt adhesions, increase blood flow, and facilitate tissue healing. Through mechanical stress, therapy enhances fibroblast activity, promoting collagen synthesis and remodeling.

The effectiveness of IASTM depends on factors such as treatment frequency, severity of the condition, patient adherence, and combination with other therapies. Evidence suggests that using IASTM alongside stretching, strengthening, and ergonomic training yields superior outcomes compared to isolated interventions.

IASTM's benefits extend beyond symptom relief; it contributes to functional restoration, improved posture, and enhanced quality of life in individuals with chronic conditions like trapezitis. This positionis an essential component in both preventative and rehabilitative physiotherapy programs.

CONCLUSION

This review concludes that Instrument-Assisted Soft Tissue Mobilization is a highly effective intervention for managing trapezitis. It plays a crucial role in reducing pain, improving functional mobility, and accelerating the healing process. Its integration into clinical practice is strongly supported by evidence from recent randomized controlled trials. Given its safety, cost-effectiveness, and adaptability, IASTM should be considered a standard modality in the physiotherapy management of trapezitis.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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