Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Comparison between the effectiveness of laser therapy and graston technique on trigger points of upper trapezius

Protocol summary

Study aim
To find out whether graston or laser, comparative or combined helps in speedy recovery of MTrPs of upper Trapezius To change in quality of life of participants after treatment

Design
Pragmatic, parallel group, single blind, randomized clinical trial

Settings and conduct
The trial is conducted in Allied hospital, Faisalabad and Al- Nawab physiotherapy clinic, Faisalabad. Subjects are chosen according to inclusion criteria. They are asked for their consent to involve them in clinical trial. Subjects are blinded as they don't know about their treatment protocol and group.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Females aged 18 to 50 years old with bilateral myofascial pain syndrome of the upper trapezius muscle. According to Simon’s diagnostic criteria five major and one minor sign of myofascial fascial pain syndrome was diagnosed in participants. Complaint of pain from at least 8 weeks Pain score between 30mm to 80mm on VAS Neck extension range up to 30 degrees Neck right and left side flexion range up to 20 degrees NDI score between 10 and 24 Exclusion criteria: Neck or shoulder pain that has lasted less than 8 weeks Within the previous three months, local injectable physiotherapy. Infection Febrile state Cervical radiculopathy symptoms Hypertension that has not been treated Coagulatory disease or anticoagulant therapy Injury to the cervical spine or surgery Implants and metal devices

Intervention groups
3 intervention groups has been made; Group A is the graston therapy group, Group B is the Laser therapy group and groups C is the graston and laser therapy group (it will be given both therapies in combination).

Main outcome variables
Pain Neck disability index score Cervical extension range of motion Cervical right lateral flexion range of motion Cervical left lateral flexion range of motion

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20210809052129N1**
Registration date: **2021-10-08, 1400/07/16**
Registration timing: **registered_while_recruiting**

Last update: **2021-10-08, 1400/07/16**
Update count: **0**

Registration date
2021-10-08, 1400/07/16

Registrant information

Name
Saba Iqbal

Name of organization / entity
The University of Faisalabad

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Pakistan

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-07-05, 1400/04/14

Expected recruitment end date
2021-10-30, 1400/08/08

Actual recruitment start date
empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison between the effectiveness of laser therapy and graston technique on trigger points of upper trapezius

Public title

Comparison between the effectiveness of laser therapy and graston technique on trigger points of upper trapezius

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Females aged 18 to 50 years old with bilateral myofascial pain syndrome of the upper trapezius muscle. As stated by Simon’s diagnostic criteria, following sings should be present: Five majors: 1. Pain in a region 2. Pain referring to another area 3. A tight muscle band 4. A tender/painful location in the tight muscle band 5. Limited ROM. One minor: 1. Pain that can be regenerated by applying pressure on the location of the tender area 2. A local twitch response in the affected area 3. With prolonged neck and/or shoulder region pain, pain relief that can be achieved with injection or stretching. Complaint of pain from at least 8 weeks. Pain score between 30mm to 80mm on VAS. Neck extension range up to 30 degrees. Neck right and left side flexion range up to 20 degrees. NDI score between 10 and 24

Exclusion criteria:

Neck or shoulder pain that has lasted less than 8 weeks Within the previous three months, local injectable physiotherapy Infection Febrile state Cervical radiculopathy symptoms Hypertension that has not been treated Coagulatory disease or anticoagulant therapy Injury to the cervical spine or surgery Implants and metal devices

Age

From **18 years** old to **50 years** old

Gender

Female

Phase

3

Groups that have been masked

- Care provider

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Lottery method was used for subject randomization in groups. Groups names were written on papers and were folded. After that subjects were asked to pick one paper. The groups were allotted to the subjects and then treatment was started.

Blinding (investigator's opinion)

Single blinded

Blinding description

There were three treatment groups in this study. No control group. Groups were allocated to the subjects by the investigator after lottery method but the subjects weren't told which group they belong to. The measurements taken from the participants on questionnaires were also not shown to the participants.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of The University of Faisalabad

Street address

Sargodha Rd, University Town, Faisalabad, Punjab

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38000

Approval date

2021-06-14, 1400/03/24

Ethics committee reference number

TUF/DR/MSPP/299

Health conditions studied

1

Description of health condition studied

Myofascial pain syndrome

ICD-10 code

MG30.01

ICD-10 code description

Chronic widespread pain

Primary outcomes

1

Description

Pain

Timepoint

before intervention and after 2nd, 5th intervention session and then after 5 days of 5th session

Method of measurement

Pain measurement by visual analogue scale.

2

Description

Neck disability Index

Timepoint

before intervention and after 2nd, 5th intervention session and then after 5 days of 5th session

Method of measurement

Neck functioning measurement by neck disability index.

Secondary outcomes

1

Description

(1) Cervical extension ROM.

Timepoint

before intervention and after 2nd, 5th intervention session and then after 5 days of 5th session

Method of measurement

Ranges of motion are measured by goniometry.

2

Description

Cervical right lateral flexion ROM.

Timepoint

before intervention and after 2nd, 5th intervention session and then after 5 days of 5th session

Method of measurement

Ranges of motion are measured by goniometry.

3

Description

Cervical left lateral flexion ROM

Timepoint

before intervention and after 2nd, 5th intervention session and then after 5 days of 5th session

Method of measurement

Ranges of motion are measured by goniometry.

Intervention groups

1

Description

Intervention group 1: Graston therapy. Graston tool is used for 1 minute sweeping of upper trapezius, 2 minute swiveling and fanning of Trps then 1 minute swiveling of upper trapezius. After that stretching of muscle with 30 seconds hold in 3 repetitions.

Category

Treatment - Devices

2

Description

Intervention group 2: Laser therapy. GaAlAs semiconductor laser is used with 808nm wavelength. Myofascial trigger points are marked by drawing an X on them over the skin. With gentle pressure, the laser device is positioned perpendicular to the area of skin to be irradiated and moved in a circular pattern. Each trigger point is irradiated for 60 seconds. After that stretching of muscle with 30 seconds hold in 3 repetitions.

Category

Treatment - Devices

3

Description

Intervention group 3: Graston and laser therapy. GaAlAs semiconductor laser is used with 808nm wavelength. Myofascial trigger points are marked by drawing an X on them over the skin. With gentle pressure, the laser device is positioned perpendicular to the area of skin to be irradiated and moved in a circular pattern. Each trigger point is irradiated for 60 seconds. After that graston tool is used for 1 minute sweeping of upper trapezius, 2 minute swiveling and fanning of Trps then 1 minute swiveling of upper trapezius. After that stretching of muscle with 30 seconds hold in 3 repetitions.

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Allied Hospital

Full name of responsible person

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2

Recruitment center

Name of recruitment center

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Full name of responsible person

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Sponsors / Funding sources

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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Self financed
Proportion provided by this source
100
Public or private sector
Private
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Undecided - It is not yet known if there will be a plan to make this available

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
Not applicable

Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report
Not applicable

Analytic Code
Not applicable

Data Dictionary
Not applicable