Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

COMPARATIVE EFFECTS OF GASTROCNEMIUS MUSCLE ENERGY TECHNIQUE AND STRAIN COUNTERSTRAIN ON GAIT OF FAST BOWLERS WITH GASTROCNEMIUS TRIGGER POINTS

Protocol summary

Study aim

Evaluate the effects of muscle energy technique and strain counterstrain on pain, cadance, stride length, ankle dorsiflexion and planterflexion of fast bowlers with gastrocemius trigger points.

Design

Randomized clinical trial, Non-probability simple random sampling technique was used in this study.

Settings and conduct

Saeed Ajmal International Cricket Academy Borannwalla Ground Jinnah Bagh Faisalabad Jawad Sports and Cultural Complex

Participants/Inclusion and exclusion criteria

Inclusion Criteria • Fast bowlers willing to participate in the age group of 20-30 years • Fast bowlers having at least one hypersensitive tender nodule within a palpable taut band in the gastrocnemius muscle • Fast bowlers having ankle dorsiflexion range of motion less than 20 degrees • Pain intensity of more than 4 on numeric pain rating scale • Subjects running for 3 days per week for more than 6-months will be recruited Exclusion Criteria • Participants having Fibromyalgia syndrome • Congenital deformity of the foot and ankle • Tumors of the lower back and lower limb • Lower limb fractures • Diabetic neuropathy • Peripheral vascular disease • 3-month recent injuries to legs, foot or ankle will be excluded from the study

Intervention groups

Patients were divided into two group i.e., group A (muscle energy technique group) and group B (strain counterstrain group).

Main outcome variables

Pain Cadence Stride length Ankle dorsiflexion/plantarflexion Sprinting

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230427058011N1**
Registration date: **2023-09-26, 1402/07/04**
Registration timing: **retrospective**

Last update: **2023-09-26, 1402/07/04**
Update count: **0**

Registration date

2023-09-26, 1402/07/04

Registrant information

Name

Nabeel Zahid

Name of organization / entity

The University of Faisalabad

Country

Pakistan

Phone

+92 322 6373400

Email address

nabeelzahid7@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-03-01, 1401/12/10

Expected recruitment end date

2023-05-01, 1402/02/11

Actual recruitment start date

2023-03-24, 1402/01/04

Actual recruitment end date

2023-05-15, 1402/02/25

Trial completion date

2023-05-15, 1402/02/25

Scientific title
COMPARATIVE EFFECTS OF GASTROCNEMIUS MUSCLE ENERGY TECHNIQUE AND STRAIN COUNTERSTRAIN ON GAIT OF FAST BOWLERS WITH GASTROCNEMIUS TRIGGER POINTS

Public title
COMPARATIVE EFFECTS OF GASTROCNEMIUS MUSCLE ENERGY TECHNIQUE AND STRAIN COUNTERSTRAIN ON GAIT OF FAST BOWLERS WITH GASTROCNEMIUS TRIGGER POINTS

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Fast bowlers willing to participate in the age group of 20-30 years Fast bowlers having at least one hypersensitive tender nodule within a palpable taut band in the gastrocnemius muscle Fast bowlers having ankle dorsiflexion range of motion less than 20 degrees Pain intensity of more than 4 on numeric pain rating scale Subjects running for 3 days per week for more than 6-months will be recruited

Exclusion criteria:
Participants having Fibromyalgia syndrome Congenital deformity of the foot and ankle Tumors of the lower back and lower limb Lower limb fractures Diabetic neuropathy Peripheral vascular disease 3-month recent injuries to legs, foot or ankle will be excluded from the study

Age
From **20 years** old to **30 years** old

Gender
Male

Phase
N/A

Groups that have been masked

- Participant

Sample size
Target sample size: **42**
Actual sample size reached: **42**

Randomization (investigator's opinion)
Randomized

Randomization description
Randomized clinical trial, a single-blinded experimental study was conducted. There was the formation of two study groups out of selected sample naming as group A and group B. Simple random sampling technique was used for the recruitment of study participants and they were allocating to groups using lottery method by keeping the allocation ratio (1:1) for both groups.

Blinding (investigator's opinion)
Single blinded

Blinding description
Participants were blinded from the interventionl groups during the study. They didn't know which study group contain which intervention.

Placebo
Not used

Assignment
Other

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
RESEARCH AND ETHICS / TECHNICAL COMMITTEE

Street address
Faisal Town, West Canal Road

City
Faisalabad

Postal code
38000

Approval date
2023-03-24, 1402/01/04

Ethics committee reference number
TUF/DR/SA/MSPP/2023/231

Health conditions studied

1

Description of health condition studied
GASTROCNEMIUS TRIGGER POINTS

ICD-10 code
M70.90

ICD-10 code description
Unspecified soft tissue disorder related to use, overuse and pressure of unspecified site

2

Description of health condition studied
GAIT IN GASTROCNEMIUS TRIGGER POINTS

ICD-10 code
R26.2

ICD-10 code description
Difficulty in walking, not elsewhere classified

Primary outcomes

1

Description
Pain

Timepoint
Before intervention, after 2nd week of intervention and after 4th week of intervention

Method of measurement
Pain was measured using NPRS (numerical pain rating scale)

Secondary outcomes

1

Description
Cadence
Timepoint
Before intervention, after 2nd week of intervention and after 4th week of intervention
Method of measurement
Measured by using stop watch and measuring tape

2

Description
Stride length
Timepoint
Before intervention, after 2nd week of intervention and after 4th week of intervention
Method of measurement
Measured by using stop watch and measuring tape

3

Description
Ankle dorsiflexion/plantarflexion
Timepoint
Before intervention, after 2nd week of intervention and after 4th week of intervention
Method of measurement
Using goniometer

4

Description
Sprinting and Function
Timepoint
Before intervention, after 2nd week of intervention and after 4th week of intervention
Method of measurement
LEFS (lower extremity functional scale)

Intervention groups

1

Description
Intervention group A Muscle Energy Technique (MET): Group A subject received 10 minutes session of moist hot pack from hydro collator at 55 degrees followed by a set of 7 repetitions of calf stretching where each stretch was held static for 10 seconds & after which treatment for each group was performed. This baseline treatment took almost 15 minutes. After that the participants of group A post-isometric relaxation technique of muscle energy technique was used. On a therapeutic bed, the participants were lying face down with their feet dangling off the edge. The individual feels a tension barrier when the dominant foot is gently moved into dorsiflexion. The subject next be told to perform an isometric contraction for seven seconds using 20% of their maximal strength against the therapist's resistance. The subject was told to relax after seven seconds as the therapist moves their ankle into a deeper range of dorsiflexion till, they feel the next stress barrier. This tension barrier continued for 60 seconds. There were three instances of this process. Total session time of group A treatment along with the common/baseline treatment was 30 minutes.
Category
Treatment - Other

2

Description
Intervention group B Strain Counter Strain (SCS): Group B subject received 10 minutes session of moist hot pack from hydro collator at 55 degrees followed by a set of 7 repetitions of calf stretching where each stretch was held static for 10 seconds & after which treatment for each group was performed. This baseline treatment took almost 15 minutes. After that the subject was laying prone with the knee bent at a 90-degree angle and ankle plantarflexed. Therapist exerted intense manual pressure on the trigger point, had been palpated and hold it 90 seconds. This process was carried out three times. Total session time of group B treatment along with the common/baseline treatment was 30 minutes.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Saeed Ajmal International Cricket Academy
Full name of responsible person
Hassan Ali (Manager)
Street address
Jhang Road, Faisalabad, Pakistan
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Web page address
http://saicacricketers.com

2

Recruitment center
Name of recruitment center
Borannwalla Ground Jinnah Bagh Faisalabad
Full name of responsible person
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3

Recruitment center
Name of recruitment center
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Full name of responsible person
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
The University of Faisalabad
Full name of responsible person
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
The University of Faisalabad
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
Persons

Person responsible for general inquiries

Contact
Name of organization / entity
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Full name of responsible person
Mohsin Ali
Position
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Not applicable
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
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When the data will become available and for how long
The Data will be available till the end of 2023
To whom data/document is available
Data will be available to all the students whom has access to the desired journals in which it will be published
Under which criteria data/document could be used
Cannot be used for republished purpose. For Study and knowledge purpose only
From where data/document is obtainable
mail at nabeelzahid7@gmail.com
What processes are involved for a request to access data/document
Detail how you want to use this data and for what purpose
Comments