Clinical Trial Protocol
Iranian Registry of Clinical Trials

28 Jun 2026

The effect of trigger point dry needling of Quadratus lumborum on improvement of maximal isometric force of gluteus medius , pain and function of patellofemoral joint in patients with patellofemoral pain syndrome (single-blind randomized controlled trial)

Protocol summary

Study aim
The effect of dry needling of quadratus lumbarum muscle technique on improvement of maximal isometric force of gluteus medius muscle, pain and patellofemoral joint function in patients with patellofemoral pain syndrome

Design
A randomized control trial with blinded examiner .52 patients , enrolled between February 2020 and June 2020.

Settings and conduct
This study done at Mahdieh Clinic and the participants randomly divided into two groups after filling out the consent form. Subjects in the intervention group receive 6 sessions of routine physiotherapy and 3 sessions of dry needle technique and in the control group receive only 6 sessions of routine physiotherapy. An evaluator who is blind to the grouping of patients and the treatment provided for each measure outcomes before the first session, immediately after the first session, and at the end of the sixth session.

Participants/Inclusion and exclusion criteria
Entery requirements: individuals between 18 and 40 years old; unilateral symptoms; gradual onset of pain not due to trauma and lasts for at least three months; anterior or knee pain that is aggravated by at least two of the following: _ Prolonged sitting _ Climbing stairs _ Squat _ Run _ to jump _ Lee Lee Exclusion criteria: a patella apprehension test or patella dislocation; knee effusion; radicular pain from hip or lumbar; surgery on the patellofemoral joint; signs of meniscus, collateral or cruciate ligament injury.

Intervention groups
The intervention group received 6 sessions of routine physiotherapy electrical stimulation and exercise therapy. In the first, third and fifth session, dry needle technique of the quadratus lumbarum is performed. Control group will receive 6 sessions of routine physiotherapy including electrical stimulation and exercise therapy.

Main outcome variables
Maximal isometric force of gluteus medius; pain; function

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20200113046113N1**
Registration date: **2020-02-01, 1398/11/12**
Registration timing: **prospective**

Last update: **2020-02-01, 1398/11/12**
Update count: **0**

Registration date
2020-02-01, 1398/11/12

Registrant information

Name
Fatemeh Mehrabi

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 31 3625 6142

Email address
fatemehhh@rehab.mui.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2020-02-20, 1398/12/01

Expected recruitment end date
2020-06-19, 1399/03/30
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of trigger point dry needling of Quadratus lumborum on improvement of maximal isometric force of gluteus medius , pain and function of patellofemoral joint in patients with patellofemoral pain syndrome (single-blind randomized controlled trial)

Public title
The effect of Quadratus lumbarum muscle dry needling in patients with patellofemoral pain syndrome
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Men and women Aged 18-40 years Unilateral Insidious onset of symptoms not due to trauma present for at least 3 months Anterior or Peripatellar knee pain during at least 2 of the following:Prolonged sitting,Stair ascent, squatting, running, jumping, hopscotch Ability to read and write The minimum visual scale being 2
Exclusion criteria:
Positive patellar apprehension sign and History of recurrent patellar dislocation Knee joint effusion Hip or lumbar referred pain Previous surgery to the patellofemoral joint Prolonged nonsteroidal anti-inflammatory drug or corticosteroid use Known articular cartilage damage based on XRay Local or systemic infections or inflammation Bleeding disorders Taking anti coagulation medication Needle phobia Pregnancy The history of regular exercise activity Leg length discrepancy Hip adductor shortness Neurological low back pain Meniscal, Cruciate or collateral ligament injury
Age
From **18 years** old to **40 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **52**
Randomization (investigator's opinion)
Randomized
Randomization description
Subjects were randomly divided into control and experimental groups using randomized block design
Blinding (investigator's opinion)
Single blinded
Blinding description
The evaluator is not aware of what patients are in the group and what treatment is being given to them.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Isfahan University of medical sciences
Street address
Hezar Jerib street
City
Isfahan
Province
Isfehan
Postal code
8174673461
Approval date
2020-01-02, 1398/10/12
Ethics committee reference number
IR.MUI.RESEARCH.REC.1398.570

Health conditions studied

1

Description of health condition studied
Patellofemoral pain syndrome
ICD-10 code
M22.2X
ICD-10 code description
Patellofemoral disorders

Primary outcomes

1

Description
Maximal isometric force of gluteus medius muscle
Timepoint
Before the first session, immediately after the first session, the end of the sixth session
Method of measurement
Handheld dynamometer

2

Description
Pain
Timepoint
Before the first session, immediately after the first session, the end of the sixth session
Method of measurement

Visual Analogue Scale

3

Description
Function of patellofemoral joint
Timepoint
Before the first session, immediately after the first session, the end of the sixth session
Method of measurement
Kujala scoring questionnaire

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Six sessions routine physiotherapy include electrical stimulation performed by TENS and exercise therapy for knee joint . we also do Quadratus lumbarum muscle dry needling technique in first, third and fifth session.
Category
Rehabilitation

2

Description
Control group: Six sessions routine physiotherapy include electrical stimulation performed by TENS and exercise therapy for knee joint
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Mahdieh clinic
Full name of responsible person
Fatemeh Mehrabi
Street address
Robat aval street
City
Isfahan
Province
Isfehan
Postal code
8138913531
Phone
+98 31 3442 9946
Email
info@mahdiehisfahan.com
Web page address
https://www.madiehisfahan.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Shaghayegh Haghjoo Javanmard
Street address
Hezar Jerib street
City
Isfahan
Province
Isfehan
Postal code
8174673461
Phone
+98 31 3668 5149
Email
research@mui.ac.ir
Web page address
https://www.research.mui.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Esfahan University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
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

Contact
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Fatemeh Mehrabi
Position
Master student
Latest degree
Bachelor
Other areas of specialty/work
Physiotherapy
Street address
School of Rehabilitation Sciences, Hezar Jerib street
City
Isfahan
Province
Isfehan
Postal code

81746-73461
Phone
+98 31 3792 3071
Fax
Email
fatemehhh@rehab.mui.ac.ir

Person responsible for scientific inquiries

Contact
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Fatemeh Mehrabi
Position
Master student
Latest degree
Bachelor
Other areas of specialty/work
Physiotherapy
Street address
School of Rehabilitation Sciences, Hezar Jerib street
City
Isfahan
Province
Isfehan
Postal code
8174673461
Phone
+98 31 3792 3071
Fax
Email
fatemehhh@rehab.mui.ac.ir

Person responsible for updating data

Contact
Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Fatemeh Mehrabi
Position
Master student
Latest degree
Bachelor
Other areas of specialty/work
Physiotherapy
Street address
School of Rehabilitation Sciences, Hezar Jerib street
City
Isfahan
Province
Isfehan
Postal code
8174673461
Phone
+98 31 3792 3071
Fax
Email
fatemehhh@rehab.mui.ac.ir

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
Yes - There is a plan to make this available
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
All obtained data, such as demographic information and primary outcomes measured at all time points, and data analysis can be shared after unidentifiable subjects.
When the data will become available and for how long
The access period begins after the results are published.
To whom data/document is available
Anyone working in the medical and rehabilitation field can access the information.
Under which criteria data/document could be used
After receiving information if they wish to use it in future studies, they should seek permission from the designers.
From where data/document is obtainable
Postal address:School of Rehabilitation Sciences, Hezar Jerib street, Isfahan, Iran Postcode: 8174673461 Email address : fatemehhh@rehab.mui.ac.ir fmehrabipt@yahoo.com Phone Number : +98 31 3792 3071 Cell Number : 09139649659 Responsible person: Fatemeh Mehrabi
What processes are involved for a request to access data/document
The applicant can request the data by email. After 5 working days the data will be sent to them.
Comments