

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Immediate effects of patellar taping on electromyographic indices of Vastus medialis oblique and Vastus lateralis muscles in Patellofemoral pain syndrome

Protocol summary

Study aim

Evaluation of the immediate effectiveness of patellar taping on electromyographic indices of Vastus medialis oblique(VMO) and Vastus lateralis(VL) muscles in Patellofemoral pain syndrome(PFPS)

Design

In this randomized, blinded study, 35 patients aged 20-50 years with PFPS are selected. KT on patella will be used for all people. The muscular activity of individuals in closed and open chain kinematic will be examined with an EMG device that the order of these activities is done randomly for individuals. A secondary evaluation is performed on the same day after patellar taping to evaluate the immediate effects of patellar taping on knee muscle activity.

Settings and conduct

Emg data analyzer will not know if the recorded information is pre- or post-taping.

Participants/Inclusion and exclusion criteria

In. criteria : Anterior knee pain for at least a month; Feeling of pain when touching the medial and lateral borders of the patella; Exacerbation of symptoms during prolonged sitting, climbing stairs, squatting, running and jumping activities; positive Clark test; Pain during resistance knee extension ex. criteria : History of direct trauma to the patella; History of patella dislocation; Any rheumatic conditions (OA, RA); Diabetes; Any trauma and injury of meniscus; Ligament instability; Referral pain from the lower back, hip, pelvis, and SI region; Significant inflammation and effusion of the knee joint; knee surgery; Steroid injection; knee physiotherapy; Severe knee pain; Lower limb malalignment (anteversion of femur, genu valgum and genu varum, flat foot)

Intervention groups

In order to evaluate the immediate effectiveness of kinesiotaping(KT) on muscle activity, a Y-shaped tape will be used on the patella.

Main outcome variables

Onset time of EMG activity and the amount of amplitude of EMG activity of VMO and VL muscles and the amplitude ratio of them during closed and open chain kinematic

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20091214002851N6**

Registration date: **2021-11-24, 1400/09/03**

Registration timing: **prospective**

Last update: **2021-11-24, 1400/09/03**

Update count: **0**

Registration date

2021-11-24, 1400/09/03

Registrant information

Name

Mohammad Taghipour

Name of organization / entity

Babol University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-12-18, 1400/09/27

Expected recruitment end date

2022-09-23, 1401/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Immediate effects of patellar taping on electromyographic indices of Vastus medialis oblique and Vastus lateralis muscles in Patellofemoral pain syndrome

Public title

Immediate effects of patellar taping in Patellofemoral pain syndrome

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Anterior knee pain for at least a month Feeling of pain when touching the medial and lateral borders of the patella Exacerbation of symptoms during prolonged sitting, climbing stairs, squatting, running and jumping activities positive Clark test Pain during resistance knee extension

Exclusion criteria:

History of direct trauma to the patella History of patella dislocation Any rheumatic conditions (osteoarthritis, rheumatoid arthritis) Diabetes Any trauma and injury of meniscus Ligament instability Referral pain from the lower back, hip, pelvis, and sacroiliac region Significant inflammation and effusion of the knee joint knee surgery Steroid injection knee physiotherapy Severe knee pain Lower limb malalignment (anteversion of femur, genu valgum and genu varum, flat foot)

AgeFrom **20 years** old to **50 years** old**Gender**

Both

Phase

N/A

Groups that have been masked

- Data analyser

Sample sizeTarget sample size: **35****Randomization (investigator's opinion)**

Randomized

Randomization description

In this study, muscle activity in closed and open chain kinematics will be examined during 6 tests. The sequence of these tests is done randomly for individuals based on a table of random numbers.

Blinding (investigator's opinion)

Single blinded

Blinding description

The person who will analyze the electromyographic data will not know if the recorded information is relevant before or after taping.

Placebo

Not used

Assignment

Single

Other design features

Investigation of the effect of patellar taping on all three electromyographic indicators (onset-amplitude-amp ratio) simultaneously: Comparison of the effect of taping on open and closed chain kinematic of the lower limb: Comparison of the effect of taping in different positions of the lower limb, including internal and external rotation of the hip

Secondary Ids

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Babol University of Medical Sciences

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Mazandaran, Babol, Ganj Afroz St., Babol University of Medical Sciences

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Approval date

2021-10-09, 1400/07/17

Ethics committee reference number

IR.MUBABOL.HRI.REC.1400.064

Health conditions studied**1****Description of health condition studied**

Patellofemoral pain syndrome

ICD-10 code

M22.2

ICD-10 code description

Patellofemoral disorders

Primary outcomes**1****Description**

Delayed onset time of Vastus medialis oblique activity

Timepoint

Before patellar taping and immediately after patellar taping

Method of measurement

Electromyograph

Secondary outcomes

1

Description

Intensity of pain

Timepoint

Before patellar taping and immediately after patellar taping

Method of measurement

Analog visual scale

2

Description

Amplitude of Vastus medialis oblique

Timepoint

Before patellar taping and immediately after patellar taping

Method of measurement

Electromyograph

3

Description

Amplitude of Vastus lateralis

Timepoint

Before patellar taping and immediately after patellar taping

Method of measurement

Electromyograph

4

Description

The ratio of VMO/VL amplitude

Timepoint

Before patellar taping and immediately after patellar taping

Method of measurement

Dividing the maximum amplitude of the Vastus medialis oblique muscle into the maximum amplitude of the Vastus lateralis muscle

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Description

Delayed onset time of Vastus lateralis activity

Timepoint

Before patellar taping and immediately after patellar taping

Method of measurement

Electromyograph

Intervention groups

1

Description

Intervention group: The Y-shaped kinesiotape strip will be placed on the patella. The patient will be seated or supine while the affected knee is bent. The base of the Y-shaped strip will be placed without stretching on the surface of the Quadriceps femoris half muscle. The tape continues with a slight stretch(25%) in the direction of

the patella. After correcting the location of the patella, the inner tail of the tape is placed along the medial border of the patella and the outer tail is placed along the lateral border of the patella and ends without stretching on the patellar tendon.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Orthopedic and Physiotherapy clinic of Shahid Beheshti hospital

Full name of responsible person

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Sponsors / Funding sources

1

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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

Babol 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**

Babol University of Medical Sciences

Full name of responsible person

Asal Hasanpour Moqaddam

Position

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Latest degree

Bachelor

Other areas of specialty/work

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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

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 data can potentially be shared after unidentified individuals

When the data will become available and for how long

Access period starts 2 months after the results are published

To whom data/document is available

Researchers working in academic, scientific and medical institutions

Under which criteria data/document could be used

To cite other researchers from the results of our research

From where data/document is obtainable

Dr. Mohammad Taghipour, Babol University of medical sciences, college of Rehabilitation, 00989126899352 ,taghipour@mubabol.ac.ir Asal Hasanpour Moqaddam, Babol University of medical sciences, college of

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What processes are involved for a request to access data/document

2-4 weeks after request by email

Comments