

Clinical Trial Protocol

Iranian Registry of Clinical Trials

02 Jun 2026

The Comparison of Different Intensities of Modified Holmich Protocol on Performance, Pain and Return-to-Sport in Athletes with Long-Standing Adductor Longus Related Groin Pain

Protocol summary

Study aim

To evaluate the effect of Exercise Treatment (Modified Holmich Protocol) in different intensities (low, moderate, and high) on groin pain

Design

Clinical trial with parallel groups consist of 3 intervention groups on 36 subjects

Settings and conduct

36 athletes according to the inclusion and exclusion criteria will be included in the study and in order their entrance date, they will be divided in intervention groups from 1 to 3, respectively . After the initial evaluations, they will perform therapeutic exercises for ten weeks with three different intensities. Then, after the tenth session, the initial evaluations will be performed again.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Male athletes (18-35 years) , groin pain for at least 2 months Exclusion criteria: inguinal hernia, Pelvic or lower extremity fracture, chronic urinary system disorder

Intervention groups

Intervention group 1: Low-intensity modified Holmich therapeutic exercise protocol with 10% of maximum voluntary isometric contraction of adductor muscle, three times a week for ten weeks, intervention group 2: moderate-intensity modified Holmich therapeutic exercise protocol with 30% to 50% of maximum voluntary isometric contraction of adductor muscle, , three times a week for ten weeks and intervention group 3: high-intensity modified Holmich therapeutic exercise protocol with 70% of maximum voluntary isometric contraction of adductor muscle, , three times a week for ten weeks will perform.

Main outcome variables

pain, hip adductor and abductor muscle strengths, hip range of motion, 8 figure test

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20130121012210N9**

Registration date: **2021-06-18, 1400/03/28**

Registration timing: **prospective**

Last update: **2021-06-18, 1400/03/28**

Update count: **0**

Registration date

2021-06-18, 1400/03/28

Registrant information

Name

Azadeh Shadmehr

Name of organization / entity

Tehran University of Medical Sciences

Country

Iran (Islamic Republic of)

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+98 21 7752 8468

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-07-11, 1400/04/20

Expected recruitment end date

2021-10-12, 1400/07/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Comparison of Different Intensities of Modified Holmich Protocol on Performance, Pain and Return-to-Sport in Athletes with Long-Standing Adductor Longus Related Groin Pain

Public title

The Comparison of Different exercise therapy on improvement of Long-Standing Groin Pain in Athletes

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Male athletic with Right dominant leg age 18-35 years desire to return to the former level of sports activity groin pain for at least 2 months pain at palpation of the adductor tendons or the insertion on the pubic bone or both moderate groin pain during active adduction against resistance (squeeze test) moderate pain during adduction against resistance had to be more than two and less than six at least two of the following criteria had to be present: a clear history of groin pain and stiffness in the morning, cough-induced or sneeze-induced groin pain, nocturnal groin pain , radiological evidence demonstrating osteitis pubis

Exclusion criteria:

inguinal hernia fracture of the pelvis or the lower limbs entrapment of the genitofemoral nerve taking any nonsteroidal anti-inflammatory drugs participation in principled strength training of the hip adductors for more than once a week in the 6 months prior to the study chronic urinary tract disorder

Age

From **18 years** old to **35 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **36**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants are divided into three intervention groups according simple randomization. Randomization will be performed using sealed, randomly filled envelopes describing the treatment groups. We prepare three envelopes, in each of which one of the three methods is written. Each participant will choose one of them without knowing the contents of the envelope and will be placed in the relevant group.

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of School of Medicine ,Tehran University of Medical Sciences

Street address

School of Medicine, Poorsina street, Keshavarz Ave.

City

Tehran

Province

Tehran

Postal code

1417613151

Approval date

2020-10-31, 1399/08/10

Ethics committee reference number

IR.TUMS.MEDICINE.REC.1399.697

Health conditions studied

1

Description of health condition studied

Groin Pain

ICD-10 code

G89.11

ICD-10 code description

Acute pain due to trauma

Primary outcomes

1

Description

pain

Timepoint

before treatment, at the end of treatment (after the 10th week)

Method of measurement

according to the Visual analog scale, patient pain will be assessed during resisted hip adduction.

2

Description

Hip adductors strength by dynamo-meter

Timepoint

before treatment, at the end of treatment (after the 10th week)

Method of measurement

Average of three Maximal Voluntary Contraction (MVC) recorded on the Biodex Dynamometer during hip isometric adduction

3

Description

Hip abductors strength by dynamo meter

Timepoint

before treatment, at the end of treatment (after the 10th week)

Method of measurement

Average of three Maximal Voluntary Contraction (MVC) recorded on the Biodex Dynamometer during hip isometric abduction

4

Description

Hip range of motion by goniometer

Timepoint

before treatment, at the end of treatment (after the 10th week)

Method of measurement

It is the range of motion of the hip joint abduction recorded by goniometer

5

Description

Time to return to sport

Timepoint

When the athlete fully returns to team training and competitions after treatment.

Method of measurement

The time needed for the player to return to Sport in weeks and days

6

Description

figure of eight hop test

Timepoint

before treatment, at the end of treatment (after the 10th week)

Method of measurement

The athlete completes the 8-English course by jumping on one foot and the time of this work is recorded.

Secondary outcomes

empty

Intervention groups

1

Description

First intervention group: Low intensity Exercise. In this group Maximum Voluntary Contraction of hip adduction is defined using the Dynamometer and adjust low-intensity exercise by 10% of Maximum Voluntary Contraction. This exercises will continue for 10 weeks. The duration of each session is one hour and will be performed three times a week.

Category

Rehabilitation

2

Description

Second intervention group: Moderate intensity Exercise. In this group Maximum Voluntary Contraction of hip adduction is defined using the Dynamometer and adjust moderate-intensity exercise by 30-50% of Maximum Voluntary Contraction. This exercises will continue for 10 weeks. The duration of each session is one hour and will be performed three times a week.

Category

Rehabilitation

3

Description

Third intervention group: High intensity Exercise. In this group Maximum Voluntary Contraction of hip adduction is defined using the Dynamometer and adjust high-intensity contractions exercise by 70% of Maximum Voluntary Contraction. This exercises will continue for 10 weeks. The duration of each session is one hour and will be performed three times a week.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

School of Rehabilitation

Full name of responsible person

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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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
Tehran 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

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Person responsible for updating data

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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

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

Analytic Code

Not applicable

Data Dictionary

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