

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

The effect of dry needling on pain and disability in total knee arthroplasty patients with active trigger points in knee muscles: a clinical trial

Protocol summary

Study aim

Short term effect of one session of dry needling on pain intensity and disability in total knee arthroplasty patients with active trigger points in muscles around the knee

Design

A single blind clinical trial

Settings and conduct

At first all participants were examined for the presence of active trigger points in the muscles surrounding the knee at Baran physiotherapy clinic. Active trigger points were marked. Patients described their current intensity of pain and disability on a visual analogue scale(VAS)and KOOS. A trained and experienced physical therapist applied dry needling to all active trigger points previously identified. At subsequent visits on first and fourth week intensity of pain were evaluated via VAS and disability via KOOS.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Having Total knee arthroplasty (T K A); Active Trigger Point in Knee Muscles such as Quadriceps, Hamstring, Gastrosoleus; VAS>40; being at the age of 55 to 80 years old; having knee full extension. Non inclusion criteria: Having radicular pain; neuropathy; fibromyalgia; hypothyroidism; meralgiaparethesia; surgical problem such as surgical technique; systemic disease; myopathy; malalignment; fear of needle.

Intervention groups

This study has one group in which the muscles around the knee undergo dry needling in one session. Each session takes 10-15 minutes .

Main outcome variables

Pain intensity and disability score

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180716040489N1**

Registration date: **2019-01-15, 1397/10/25**

Registration timing: **retrospective**

Last update: **2019-01-15, 1397/10/25**

Update count: **0**

Registration date

2019-01-15, 1397/10/25

Registrant information

Name

Mohammad Bagher Mashaheri Fard

Name of organization / entity

Country

Iran (Islamic Republic of)

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-08-04, 1397/05/13

Expected recruitment end date

2018-11-04, 1397/08/13

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of dry needling on pain and disability in total knee arthroplasty patients with active trigger points in knee muscles: a clinical trial

Public title

The effect of dry needling on pain and disability in total

knee arthroplasty patients.

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria:
 Having total knee arthroplasty Having Active Trigger Point in Knee Muscles such as Quadriceps , Hamstring, Gastrosoleus Having visual analogue scale (VAS) > 40 Age between 55 to 80 years old Having knee full extension The ability to read and write
Exclusion criteria:
 Having radicular pain or neuropathy Having fibromyalgia, hypothyroidism, meralgia paresthetica Having systemic disease or myopathy or malignancy Fear of needling Taking anticoagulants Taking NSAIDs Total hip arthroplasty in the same side Painful total knee arthroplasty in opposite side less than 6 months ago

Age
From **55 years** old to **80 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Outcome assessor

Sample size
Target sample size: **25**

Randomization (investigator's opinion)
N/A

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description
Assessor will be blind

Placebo
Not used

Assignment
Single

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
 Isfahan University of Medical Sciences, Hezar Jerib Ave. Isfahan, Iran
City
 Isfahan
Province
 Isfahan
Postal code

81746-7346
Approval date
 2017-09-16, 1396/06/25
Ethics committee reference number
 IR.MUI.REC.1396.30471

Health conditions studied

1

Description of health condition studied
 Total knee arthroplasty
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
 pain score
Timepoint
 one week and one month after treatment
Method of measurement
 pain is investigated by Visual Analogue Scale .

2

Description
 function score by Knee injury and Osteoarthritis Outcome Score (KOOS).
Timepoint
 one week and one month after treatment
Method of measurement
 .FUNCTION IS Investigated by Knee injury and Osteoarthritis Outcome Score (KOOS).

Secondary outcomes

1

Description
 Knee disability
Timepoint
 Before the intervention, one week and one month after treatment
Method of measurement
 Knee injury and Osteoarthritis Outcome Score

Intervention groups

1

Description
 Intervention group: Active trigger points were explored in Muscles surrounding the knee. Patients with active trigger points who fulfilled inclusion/exclusion criteria underwent one dry needling session with fast in fast out method. In this method dry needle injected in active trigger points back and forth 10 times with 10 hertz that takes long 10-15 minutes.

Category

Rehabilitation

empty

Country of origin**Type of organization providing the funding**

Academic

Recruitment centers**1****Recruitment center****Name of recruitment center**

Baran Physiotherapy

Full name of responsible person

Mohammad Bagher Mashaheri Fard

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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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

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**Person responsible for general inquiries****Contact****Name of organization / entity**

Esfahan University of Medical Sciences

Full name of responsible person

Mohammad Bagher Mashaheri Fard

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries**Contact****Name of organization / entity**

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

No more information available

Study Protocol

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

Statistical Analysis Plan

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

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

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

Data Dictionary

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