Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 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; hypothyroedism; 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

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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 athroplasty 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, hypothyroedism, meralgia parethesia 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 month 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

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Province

Isfehan

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 Analoge 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 diability

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 fullfilled 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

Recruitment centers

1

Recruitment center
Name of recruitment center
Baran Physioyherapy
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Sponsors / Funding sources

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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
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general 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