Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

COMPARISON OF THE THERAPEUTIC EFFECT OF INTERFERENTIAL CURRENT STIMULATION ALONE AND COMBINED WITH EXERCISE-THERAPY IN PATIENTS WITH KNEE OSTEOARTHRITIS

Protocol summary

Summary

Introduction: Knee osteoarthritis (KOA) is the most common cause of chronic disability among the elderly. Due to importance of the knee joint in weight-bearing and walking, people with knee osteoarthritis often experience limitations in daily activities. Various treatment methods are recommended for management of knee osteoarthritis. In this study, two methods of 'interferential' and 'interferential plus exercise-therapy' were compared. Methods and materials: This study was conducted on 32 patients with KOA aged 45- 65 years with at least six months of complaint about knee pain. After convenient sampling, patients were randomly divided into two groups: group I (interferential plus exercise-therapy) and group II (interferential). Both groups were treated in 8 treatment sessions. Pain intensity and functional status were evaluated by Numeric Rating Scale (NRS) and Western Ontario and McMaster Universities osteoarthritis index questionnaire (WOMAC), respectively. Statistical analysis was done using Wilcoxon Signed Rank Test to compare before and after intervention in each group and Mann-Whitney Test for between-groups comparison. Results: Improvement in group I in pain intensity (NRS), knee flexion ROM, strength of knee extensor muscles and WOMAC questionnaire criteria was significantly higher than that in group II ($p<0.05$) but there was no significant difference between the two groups in knee extension ROM and strength of knee flexor muscles ($p>0.05$). Discussion & Conclusion: Our results indicated that both interferential and exercise-therapy can improve patients with KOA. It is concluded that interferential therapy alone can be somewhat effective in reducing pain and improving function in patients with KOA, however to achieve maximum recovery in these patients, exercise-therapy plays a key role.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016021624149N26**
Registration date: **2016-04-26, 1395/02/07**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2016-04-26, 1395/02/07

Registrant information

Name

Fahimeh Kamali

Name of organization / entity

Shiraz University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 71 1627 1551

Email address

kamalif@sums.ac.ir

Recruitment status

Recruitment complete

Funding source

This research was performed as a thesis, financially supported by Shiraz University of Medical Sciences (Shiraz, Iran)

Expected recruitment start date

2012-01-11, 1390/10/21

Expected recruitment end date

2012-03-10, 1390/12/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

COMPARISON OF THE THERAPEUTIC EFFECT OF INTERFERENTIAL CURRENT STIMULATION ALONE AND COMBINED WITH EXERCISE-THERAPY IN PATIENTS WITH KNEE OSTEOARTHRITIS

Public title

THE THERAPEUTIC EFFECT OF INTERFERENTIAL CURRENT AND EXERCISE-THERAPY IN PATIENTS WITH KNEE OSTEOARTHRITIS

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria were the age between 45 and 65 years, bilateral knee pain lasting at least for 6 months, morning stiffness lasting more than 30 minutes, crepitation during active knee movements and radiographic findings of KOA (such as joint space narrowing and osteophyte) Patients with the history of intra-articular steroid injection in the previous 6 months, and fracture, arthroplasty or surgery in the lower limbs were excluded from this study, as were subjects with cardio-pulmonary dysfunction, malignancy, lower limb's acute inflammatory conditions and radicular pain, patients with rheumatoid arthritis (RA) and patients who had received physiotherapy treatments at the previous four months

Age

From **45 years** old to **65 years** old

Gender

Both

Phase

1

Groups that have been masked

No information

Sample size

Target sample size: **32**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single 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 shiraz university of medical sciences

Street address

zand st

City

shiraz

Postal code

Approval date

2011-10-30, 1390/08/08

Ethics committee reference number

ct-90-5780

Health conditions studied

1

Description of health condition studied

knee osteoarthritis

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

pain intensity

Timepoint

before and after intervention

Method of measurement

numeric rating scale (NRS)

Secondary outcomes

1

Description

functional activities

Timepoint

before and after intervention

Method of measurement

WOMAC quastionaire

Intervention groups

1

Description

1- interferential + exercise therapy 2- exercise therapy

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

shiraz university of medical sciences - rehabilitation school

Full name of responsible person

Fahimeh Kamali

Street address

City

Shiraz

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

student research committee of shiraz university of medical sciences

Full name of responsible person

Fahime Kamali

Street address

shiraz university of medical sciences

City

Shiraz

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

student research committee of shiraz university of medical sciences

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

shiraz university of medical sciences

Full name of responsible person

saba salemi

Position

sport physiotherapy MS

Other areas of specialty/work

Street address

baharestan sq- shafa hospital

City

Tehran

Postal code

Phone

+98 21 3351 0979

Fax

Email

genius_67_66@yahoo.com

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity

shiraz university of medical sciences

Full name of responsible person

fahimeh kamali

Position

Phd physiotherapy

Other areas of specialty/work

Street address

abiverdi st

City

shiraz

Postal code

Phone

+98 71 3627 1551

Fax

Email

kamalif@sums.ac.ir

Web page address

Person responsible for updating data

Contact

Name of organization / entity

Shiraz university of medical sciences

Full name of responsible person

Fahimeh Kamali

Position

Phd physiotherapy

Other areas of specialty/work

Street address

abiverdi st

City

shiraz

Postal code

Phone

+98 71 3627 1551

Fax

Email

kamalif@sums.ac.ir

Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty