

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparison of electrical interferential current stimulation and electrical acupuncture in the management of hemiplegic shoulder pain and disability following ischemic stroke

Protocol summary

Summary

Objectives: 1-Comparison of electrical interferential current stimulation and electrical acupuncture in the treatment of hemiplegic shoulder pain in ischemic stroke patients; 2- Comparison of electrical interferential current stimulation and electrical acupuncture in the treatment of shoulder functional disability in ischemic stroke patients. Design: single- blinded randomized clinical trial Participants including major eligibility criteria: patients who are suffering from hemiplegic shoulder pain due to ischemic stroke with duration of one month to one year after stroke with or without subluxation will be selected. Patients with history of physiotherapy within the previous one month, history of local injection of steroid/Botox into shoulder joint, presence of pacemaker or skin lesions in shoulder area, intra cerebral hemorrhage or impaired cognition will be excluded. Setting, conduct and interventions: Eligible patients who are referred to physiotherapy center of Tabriz Imam-Reza university hospital will be randomly assigned in two groups of 20 people. In both groups, anteroposterior and lateral x-ray will be taken before treatment for evaluation of shoulder subluxation. All patients in both groups undergone conventional physical therapy including superficial heat therapy (infra-red), faradic electrical stimulation (FES) for shoulder antigravity muscles and exercise programs such as range of motion and strengthening exercises for a total of ten-session period. Then, two groups will be separated and compared regarding the following agents: in group A, additional treatment including acupuncture concomitant electrical stimulation will be performed. Acupuncture needles with 25 *0.25 sizes will be inserted inside the acu points: SI 10-12 (supraspinatus fossa), Du 14 (2cm lateral to C7 cervical spinus process), LI 14 (deltoid insertion), LI 10-11 (lateral epicondyl), Du 20(vertex of head), LI 4 (web of first dorsal interspaces of

hand), GB20(top of upper trapezius) and two tender points of each patient. Electrical acupuncture will be done for 20 minutes by expert physiatrist 2 times a week for 5 weeks. In group B, interferential current therapy with (IFC) using carrier frequency of 100 HZ with four electrodes attached to infraspinatus and serratus anterior via one channel and attached to supraspinatus and deltoid muscles via second channel will be performed. Electrodes arrangement will be crossed shape and cloverleaf current will be applied 3 times a week for 3 weeks by an expert therapist. Variables of main outcome measure: Function and pain will be assessed by shoulder pain and disability index (SPADI) questionnaire and range of motion will be measured for active and passive flexion, abduction, internal and external rotation by goniometry. All assessments will be done before and after treatment and finally all obtained data will be analyzed.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201602153217N10**

Registration date: **2016-07-16, 1395/04/26**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2016-07-16, 1395/04/26

Registrant information

Name

Fariba Eslamian

Name of organization / entity

Tabriz University of Medical Sciences

Country

Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source
Vice chancellor for research of Tabriz University of Medical science

Expected recruitment start date
2016-07-15, 1395/04/25

Expected recruitment end date
2016-11-15, 1395/08/25

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Comparison of electrical interferential current stimulation and electrical acupuncture in the management of hemiplegic shoulder pain and disability following ischemic stroke

Public title
Electrical stimulation vs acupuncture for hemiplegic shoulder pain

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria: patients with hemiplegic shoulder pain due to Ischemic stroke, who have been affected within the one month to one year after stroke. Exclusion criteria: 1-physiotherapy within the previous month ;2- history of local steroid/botox injection into shoulder joint; 3-presence of pacemaker in heart; 4-local skin lesions in shoulder area; 5-intracerebral hemorrhage ; 6-impaired cognition.

Age
From **50 years** old to **80 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **40**

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

1

Registry name

ندارد

Secondary trial Id

ندارد

Registration date

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Tabriz University of Medical Sciences

Street address

Daneshgah Ave., executive field of Tabriz University of Medical Sciences, vice chancellor for research of Tabriz university of medical Sciences,Ethics committee.

City

Tabriz

Postal code

Approval date

2016-02-02, 1394/11/13

Ethics committee reference number

TBZMED.REC.1394.1004

Health conditions studied

1

Description of health condition studied

hemiplegic shulder pain due to stroke

ICD-10 code

I69.4

ICD-10 code description

Sequelae of stroke, not specified as haemorrhage or infarction

Primary outcomes

1

Description

shoulder pain and disability intensity

Timepoint

week0-week 5

Method of measurement

questionnaire of " shoulder pain and disability Index"

Secondary outcomes

1

Description

shoulder range of motion

Timepoint

week 0-week 5

Method of measurement

Goniometry

Intervention groups

1

Description

All patients in both groups undergone conventional physical therapy including superficial heat therapy (infra-red), faradic electrical stimulation (FES) for shoulder antigravity muscles and exercise programs such as range of motion and strengthening exercises for a total of ten-session period. Then, two groups will be separated and compared regarding the following agents: in group A, additional treatment including acupuncture concomitant electrical stimulation will be performed. Acupuncture needles with 25 *0.25 and 25*0.30 sizes will be inserted inside the these acu points: SI 10-12 (supraspinatus fossa), Du 14 (2cm lateral to C7 cervical spinus process), LI 14 (deltoid insertion), LI 10-11 (lateral epicondyl), Du 20(vertex of head), LI 4 (web of first dorsal interosseus of hand), GB20(top of upper trapezius) and two tender points of each patient. Electrical acupuncture will be done for 20 minutes by expert physiatrist 2 times a week for 5 weeks.

Category

Treatment - Other

2

Description

In group B (comparison group), interferential current therapy with (IFC) using carrier frequency of 100 HZ with four electrodes attached to infraspinatus and serratus anterior via one channel and attached to supraspinatus and deltoid muscles via second channel will be performed. Electrodes arrangement will be crossed shape and cloverleaf current will be applied 3 times a week for 3 weeks by an expert therapist.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Reza University Hospital

Full name of responsible person

Fariba Eslamian

Street address

Golgasht Ave.,Imam Reza university hospital,Physical medicine and rehabilitation ward

City

Tabriz

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice chancellor for research ,Tabriz university of Medical Sciences

Full name of responsible person

Neda Dolatkhan

Street address

Golgasht Ave, Vice chancellor for research of Tabriz university of Medical Sciences, Physical medicine and rehabilitation research center

City

Tabriz

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Vice chancellor for research ,Tabriz 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

Tabriz university of medical sciences

Full name of responsible person

Parvin Darabi

Position

Resident of physical medicine and rehabilitation

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

Name of organization / entity

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Full name of responsible person

Fariba Eslamian

Position

Associate professor of physical medicine and rehabilitation

Other areas of specialty/work**Street address**

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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

Person responsible for updating data

Contact

Name of organization / entity

Tabriz University of medical sciences

Full name of responsible person

Fariba Eslamian