Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 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 congintion 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 subluxtaion. 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 intersooses 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 be 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

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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 disablity intensity
Timepoint
week0-week 5
Method of measurement
questionnaire of " shoulder pain and disablity 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 intersooses 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 Dolatkhah
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
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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

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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