Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Investigation of the effect of high and low Transcotaneous Electrical Nerve Stimulation on the muscle pain during hamstring passive stretching

Protocol summary

Summary

Shortness of hamstring muscle is a common disorder in many societies. Side effect of this disorder, indicate necessity of treatment. During treatment of this disorder, pain of muscle is an obstacle. In order to reduce the pain of the muscle, we decided to use two types of electrical stimulation: a high and low frequency, which are produced by trans-cutaneous electrical nerve stimulation (TENS) machine. First of all, we choose patients with this disorder, then categorized them into four groups: 1.high frequency TENS 2.low frequency TENS 3.palcebo and 4.control. We used TENS for 30 minutes, four times. We measured parameters, once before stimulation, once exactly after stimulation, then ten minutes and eventually 30 minutes after stimulation. We expected three parameters to change: 1) intensity of pain 2) threshold of pain 3) range of motion. Intensity of pain was measured by VAS method. Threshold of pain and range of motion were measured by goniometer.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201011115152N1**
Registration date: **2010-11-22, 1389/09/01**
Registration timing: **prospective**

Last update:
Update count: **0**

Registration date

2010-11-22, 1389/09/01

Registrant information

Name

HamidReza Bokaiyan

Name of organization / entity

Semnan University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Student Research Center, Semnan University of Medical Sciences

Expected recruitment start date

2010-12-11, 1389/09/20

Expected recruitment end date

2011-03-11, 1389/12/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigation of the effect of high and low Transcotaneous Electrical Nerve Stimulation on the muscle pain during hamstring passive stretching

Public title

Investigation of the effects of high and low Transcotaneous Electrical Nerve Stimulation on the muscle pain

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: having a short hamstring muscle, minimum amount of 10 degrees lower than the normal 80 degrees flexion of the thigh. Exclusion criteria: any

damage to the knee and hip or neuromuscular damage in lower limb or lumbar muscle tightness

Age

From **18 years** old to **30 years** old

Gender

Male

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)

Double blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Semnan University of Medical Sciences

Street address

Damghan Road, 5 km towards Damghan

City

Semnan

Postal code

Approval date

2010-07-21, 1389/04/30

Ethics committee reference number

2324.پ

Health conditions studied

1

Description of health condition studied

Contracture of muscle

ICD-10 code

m62.4

ICD-10 code description

Contracture of muscle

Primary outcomes

1

Description

Muscle tension pain

Timepoint

Before the intervention, immediately after the intervention, 10 minutes after the study, 30 minutes after intervention

Method of measurement

VAS test

Secondary outcomes

1

Description

Pain threshold

Timepoint

Before the intervention, immediately after the intervention, 10 minutes after the study, 30 minutes after intervention

Method of measurement

By measuring the first angle where the pain is felt

2

Description

muscle tightness

Timepoint

Before the intervention, immediately after the intervention, 10 minutes after the study, 30 minutes after intervention

Method of measurement

Using a measure based on muscle stretching technique (SLR)Straight leg raise

Intervention groups

1

Description

4) Without any intervention (do not have other routine treatments in the study)

Category

Treatment - Other

2

Description

3) To pretend to use the TENS machine (While the machine is off) and delivered in a 30 minutes time period

Category

Treatment - Other

3

Description

1) Low Frequency TENS frequency Hz5; pulse sµ 300; intensity equivalent to the threshold of stimulation at the secondary movement; and delivered in a 30 minutes time period

Category

Treatment - Other

4

Description
2) High frequency TENS frequency Hz5; pulse 50 sµ; intensity equivalent to the threshold of stimulation at the secondary movement; and delivered in a 30 minutes time period

Category
Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Tabatabaee Rehabilitation clinic

Full name of responsible person
AH Bakhtiari - Associate Professor School of Rehabilitation Sciences Semnan

Street address
Mashahir Boulevard, Opposite to the red crescent building

City
Semnan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Semnan University of Medical Sciences

Full name of responsible person
Dr parviz kokhaee

Street address
Damghan Road, 5 km towards Damghan

City
Semnan

Grant name

Grant code / Reference number

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

Title of funding source
Semnan 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
Rehabilitation Faculty, Semnan University of Medical Sciences

Full name of responsible person
Amir Hooshang Bakhtiary

Position
Associate Professor

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

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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