

Clinical Trial Protocol

Iranian Registry of Clinical Trials

30 May 2026

Effect of CO₂ fractional laser versus microneedling on treatment of patients with atrophic acne scars: a single blind randomized clinical trial

Protocol summary

2017-02-13, 1395/11/25

Summary

Objectives: To assess the effect of CO₂ fractional laser versus microneedling on treatment of patients with atrophic acne scars
Design: A single blind randomized clinical trial. **Setting and conduct:** The eligible patients with atrophic acne scars who will refer to Sina Hospital during the study period will be enrolled into the trial.
Inclusion criteria: Age of 18 to 65 years; atrophic acne.
Exclusion criteria: Pregnancy or breastfeeding; Dermal disease or infection like impetigo; herpes simplex; flat wart; severe skin disease; susceptibility to keloid; acne rosacea; Active acne; using isotretinoin in the past 6 months; photosensitivity; psychological disorders.
Intervention group 1: Treatment of skin lesion with CO₂ fractional laser 4 times with 3 weeks interval.
Intervention group 2: Treatment of skin lesion with microneedling 4 times with 3 weeks interval. **Primary outcome:** Measuring skin lesions with photography before, and 1, 2, and 6 month after intervention.
Randomization: Each patient will be his/her own control, so that, the skin lesions on one side will be treated with one approach and the other side with another approach. The left and right side of the body will assigned randomly to each treatment by tossing coin. **Blinding:** Patients will be unaware of the type of treatment. Therefore, the trial will be run as single blind.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201701319014N142**
Registration date: **2017-02-13, 1395/11/25**
Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

Registrant information

Name

Jalal Poorolajal

Name of organization / entity

Department of Epidemiology & Biostatistics Hamadan University of Medical Sciences

Country

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Recruitment status

Recruitment complete

Funding source

Vice-chancellor for Research the Technology, Hamadan University of Medical Sciences

Expected recruitment start date

2017-02-19, 1395/12/01

Expected recruitment end date

2017-02-19, 1395/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of CO₂ fractional laser versus microneedling on treatment of patients with atrophic acne scars: a single blind randomized clinical trial

Public title

Effect of CO₂ fractional laser versus microneedling on treatment of patients with atrophic acne scars

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Age of 18 to 65 years; atrophic acne.
Exclusion criteria: Pregnancy or breastfeeding; Dermal disease or infection like impetigo; herpes simplex; flat wart; severe skin disease; susceptibility to keloid; acne rosacea; Active acne; using isotretinoin in the past 6 months; photosensitivity; psychological disorders.

Age

From **18 years** old to **65 years** old

Gender

Both

Phase

2

Groups that have been masked

No information

Sample size

Target sample size: **23**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Randomization: Each patient will be his/her own control, so that, the skin lesions on one side will be treated with one approach and the other side with another approach. The left and right side of the body will assigned randomly to each treatment by tossing coin. Blinding: Patients will be unaware of the type of treatment. Therefore, the trial will be run as single blind.

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Hamadan University of Medical Sciences

Street address

Vice-chancellor for Research the Technology,
Hamadan University of Medical Sciences, Shahid
Fahmideh Ave

City

Hamadan

Postal code

6517838695

Approval date

2017-01-28, 1395/11/09

Ethics committee reference number

IR.UMSHA.REC.1395.474

Health conditions studied

1

Description of health condition studied

Atrophic acne

ICD-10 code

L70

ICD-10 code description

Acne

Primary outcomes

1

Description

Measuring skin lesions

Timepoint

before, and 1, 2, and 6 month after intervention

Method of measurement

with photography

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group 1: Treatment of skin lesion with CO2 fractional laser 4 times with 3 weeks interval.

Category

Treatment - Drugs

2

Description

Intervention group 2: Treatment of skin lesion with microneedling 4 times with 3 weeks interval.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

Sina Hospital

Full name of responsible person

Dr Sina Khanali

Street address

Sina Hospital, Mirzadeh Eshghi Ave.

City

Hamadan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice-chancellor for Research the Technology,
Hamadan University of Medical Sciences

Full name of responsible person

Dr Saeid Bashirian

Street address

Hamadan University of Medical Sciences, Shahid
Fahmideh Ave

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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

Vice-chancellor for Research the Technology, Hamadan
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**

Sina Hospital

Full name of responsible person

Dr Sina Khanali

Position

Resident of Dermatology

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

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Person responsible for scientific inquiries

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Person responsible for updating data

Contact**Name of organization / entity**

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Full name of responsible person

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Position

Associate Professor

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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