

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 May 2026

Comparisons between fractional laser, microneedling and combination therapy of microneedling and topical platelet-rich plasma (PRP) in atrophic acne scars treatment

Protocol summary

Summary

The aim of this study is to determine the effectiveness of microneedling for treatment of atrophic acne scars as a new method of treatment. The study is a single blind randomized clinical trial (RCT) that will be performed on 3 groups of 30 patients. Inclusion criteria : Atrophic acne scars; Ages 20 to 50 years old. Exclusion criteria: Active acne; Patients with platelet dysfunction, severe thrombocytopenia; Hemodynamic instability or chronic blood disorder; Inflammatory skin disorder, local or herpes infection active in the procedure site; Taking an anticoagulant or NSAID within 48 hours ago. The first group will be treated by 4 times Fractional CO2 laser 3 weeks apart and the second group will be treated by 4 times microneedling 3 weeks apart and the third group will be treated by 4 times microneedling and topical PRP 3 weeks apart. We will evaluate all of the patients for qualitative and quantitative healing assessments of scars with visioface device on admission and at each treatment session and 3 months after the last session. In addition, changes in the amount and intensity of scars based on Goodman and Baron qualitative scar grading system will be evaluated a blinded specialist. At each visit, patient will be asked about the healing of acne scars based on the Visual analog scale (VAS, 0-10 point scale).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015110318210N6**

Registration date: **2015-11-14, 1394/08/23**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2015-11-14, 1394/08/23

Registrant information

Name

Elham Behrangi

Name of organization / entity

Iran University of Medical Sciences

Country

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Email address

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Recruitment status

Recruitment complete

Funding source

Iran University of Medical Sciences

Expected recruitment start date

2015-10-22, 1394/07/30

Expected recruitment end date

2016-10-21, 1395/07/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparisons between fractional laser, microneedling and combination therapy of microneedling and topical platelet-rich plasma (PRP) in atrophic acne scars treatment

Public title

The efficacy of microneedling in treatment of acne scars

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Patient with atrophic acne scars; Ages 20 to 50 years old Exclusion criteria: Active acne; Patients with platelet dysfunction, severe thrombocytopenia (less than 50,000); Any hemodynamic instability or chronic diseases (such as diabetes, chronic infections, blood dyscrasia); Local inflammatory skin disorder or active herpes infection at the site of the procedure; Taking an anticoagulant or NSAID within 48 hours before the procedure; Corticosteroid injection at the treatment site during 1 month; Use of systemic corticosteroids within 2 weeks; Fever or recent illness; Cancer, particularly bone or blood; Hemoglobin level less than 10 grams per deciliter

Age

From **20 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **90**

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

Iran University of Medical Sciences

Street address

Tehran, Hemmat Highway

City

Tehran

Postal code

Approval date

2015-09-19, 1394/06/28

Ethics committee reference number

IR.IUMS.REC.1394.26556

Health conditions studied

1

Description of health condition studied

acne

ICD-10 code

L70.0

ICD-10 code description

Acne vulgaris

2

Description of health condition studied

Atrophic scar

ICD-10 code

L90.5

ICD-10 code description

Scar conditions and fibrosis of skin

Primary outcomes

1

Description

Response to treatment

Timepoint

Three weeks after each session and 3 months after the last session

Method of measurement

By a physician, according to the measure of the severity of acne scar goodman and high quality photography by visioface device

2

Description

Patient satisfaction rate of response to treatment

Timepoint

Three weeks after each session and 3 months after the last session

Method of measurement

Questionnaire(percentage)

Secondary outcomes

empty

Intervention groups

1

Description

Microneedeling, 4 times, 3 weeks apart

Category

Treatment - Other

2

Description

Microneedeling and topical platelet-rich plasma (PRP) , 4 times, 3 weeks apart

Category

Treatment - Other

3

Description

Co2 fractional laser, 4 times, 3 weeks apart

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Rasul Akram Hospital

Full name of responsible person

Fateme Zahra Mohammadi M.D.

Street address

Niyayesh Street, Satarkhan Street

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Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Research DepartmentIran of Univercity of Medical Science

Full name of responsible person

Seyyed ali javad musavi M.D.

Street address

Hemmat Highway

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Tehran

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Research DepartmentIran of Univercity of Medical Science

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

Rasul Akram Hospital

Full name of responsible person

Fatemeh Zahra Mohammadi

Position

resident

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Person responsible for scientific inquiries

Contact

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Full name of responsible person

Elham Behrangi M.D.

Position

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Person responsible for updating data

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Position

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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