

Clinical Trial Protocol

Iranian Registry of Clinical Trials

22 Sep 2026

Comparison of the therapeutic effect of the combination of Erbium YAG laser and stromal vascular fraction (SVF), the combination of Erbium YAG laser and platelet-rich plasma (PRP) and Erbium YAG laser alone in the treatment of striae

Protocol summary

Study aim

Comparison of the therapeutic effect of the combination of Erbium YAG laser and stromal vascular fraction (SVF), the combination of Erbium YAG laser and platelet-rich plasma (PRP) and Erbium YAG laser alone in the treatment of striae

Design

Clinical trial with control group, with parallel groups, double-blind, randomized with sealed envelopes, phase 2-3 on 10 patients (30 lesions)

Settings and conduct

In this study, 10 patients with at least three striae will be treated with Erbium YAG Laser in one session. Then, in the same session, one side is randomly injected with SVF, one side is injected with PRP, and the third side is injected with placebo. Injections are done with syringes of the same shape and color, and the patient, as well as the doctor evaluating the results and the statistician are blinded.

Participants/Inclusion and exclusion criteria

Inclusion criteria: The diagnosis of stria distensa based on the diagnosis of a dermatologist, Age less than 50 years and more than 18 years Exclusion criteria: Using any treatment method to remove striae in the last three months, Presence of lesions and skin diseases such as skin cancer or infections, Presence of collagen vascular diseases, Pregnancy and lactation, Using steroids or immunosuppressive drugs

Intervention groups

3 groups: combination of Erbium YAG laser and stromal vascular fraction (SVF), the combination of Erbium YAG laser and platelet-rich plasma (PRP) and Erbium YAG laser alone

Main outcome variables

Examining the level of effectiveness based on the Vancouver scale

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220322054341N2**

Registration date: **2023-01-20, 1401/10/30**

Registration timing: **registered_while_recruiting**

Last update: **2023-01-20, 1401/10/30**

Update count: **0**

Registration date

2023-01-20, 1401/10/30

Registrant information

Name

masoumeh rohaninasab

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 6435 2421

Email address

rohaninasab.m@iums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-01-14, 1401/10/24

Expected recruitment end date

2023-02-09, 1401/11/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty		Other design features	
Scientific title		Secondary Ids	
Comparison of the therapeutic effect of the combination of Erbium YAG laser and stromal vascular fraction (SVF), the combination of Erbium YAG laser and platelet-rich plasma (PRP) and Erbium YAG laser alone in the treatment of striae		empty	
Public title		Ethics committees	
The effect of erbium laser in striae		1	
Purpose		Ethics committee	
Treatment		Name of ethics committee	
Inclusion/Exclusion criteria		Research Ethics Committee of School of Medicine, Iran University of medical sciences	
Inclusion criteria:		Street address	
The diagnosis of stria distensa based on the diagnosis of a dermatologist Age less than 50 years and more than 18 years		School of medicine, Iran University of Medical Sciences, Shahid Hemmat Highway, Tehran, Iran	
Exclusion criteria:		City	
Using any treatment method to remove striae in the last three months Presence of lesions and skin diseases such as skin cancer or infections Presence of collagen vascular diseases Pregnancy and lactation Using steroids or immunosuppressive drugs		Tehran	
Age		Province	
From 18 years old to 50 years old		Tehran	
Gender		Postal code	
Both		1449614535	
Phase		Approval date	
2-3		2023-01-17, 1401/10/27	
Groups that have been masked		Ethics committee reference number	
• Participant • Outcome assessor • Data analyser		IR.IUMS.FMD.REC.1401.510	
Sample size		Health conditions studied	
Target sample size: 10		1	
More than 1 sample in each individual		Description of health condition studied	
Number of samples in each individual: 3		striae distensae	
Each patient must have at least three striae		ICD-10 code	
Randomization (investigator's opinion)		L90.6	
Randomized		ICD-10 code description	
Randomization description		Striae atrophicae	
After being selected by available method, lesions are divided into 3 groups by simple randomization, so that among 30 sealed bags, one bag will be randomly selected for each lesion. Each bag contains the letter a, b, or c.		Primary outcomes	
Blinding (investigator's opinion)		1	
Double blinded		Description	
Blinding description		Pigmentation (color of the lesion)	
The injection of stromal vascular fraction (SVF), platelet-rich plasma (PRP) and normal saline was done with syringes of the same shape, the contents of which are not known, and the patient does not know which treatment group he is in. Also, the doctor evaluating the results and the statistician are blinded to the treatment group of the patient.		Timepoint	
Placebo		3 months after the treatment	
Used		Method of measurement	
Assignment		Biometry with Colorimeter 4000, Multi Probe Adaptor System 5 (MPA5)	
Parallel		2	
		Description	
		Elasticity of the skin	
		Timepoint	
		3 months after the treatment	
		Method of measurement	
		Biometry with Cutometer, Multi Probe Adaptor System 580 (MPA580)	

Secondary outcomes

1

Description

Patient satisfaction

Timepoint

3 months after the treatment

Method of measurement

Based on patient global assessment score

2

Description

Complications

Timepoint

3 months after the treatment

Method of measurement

Using a checklist containing treatment complications including pain, erythema and edema

Intervention groups

1

Description

Intervention group 1: combination of erbium Yag laser and intralesional injection of stromal vascular fraction (SVF). Erbium YAG laser usually selectively targets hydrous tissue with light of 2940 nm wavelength, and the residual thermal damage in the dermis leads to the accumulation and regeneration of collagen. SVF preparation: Mesenchymal stem cells are obtained by aspirating 20 to 40 cc of fat from the human thigh or abdomen during a surgical procedure (3 cm incision). The lipoaspirate is first washed thoroughly in phosphate-buffered saline before undergoing enzymatic digestion with collagenase to obtain a single cell suspension. After digestion, the centrifuged cell pellet (referred to as the Stromal Vascular Fraction (SVF)) is resuspended in StemMACS™ MSC Expansion Media before being serially filtered through 100-µm and then 40-µm nylon filters and the mononuclear cell fraction. The cell sample is counted and cultured in StemMACS MSC Expansion Media. MSCs will adhere to plastic surfaces within 24 hours, after which the media should be replaced with fresh StemMACS MSC Expansion Media. 2-3 cc of the prepared solution SVF are injected subcutaneously at one centimeter intervals using a 1cc syringe.

Category

Treatment - Other

2

Description

Intervention group 2: combination of erbium Yag laser followed by intralesional injection of platelet-rich plasma (PRP). Platelet-rich plasma: First, the anticoagulant drug is added with a 20-ml syringe at a ratio of 1 to 10 (one milliliter of anticoagulant per ten milliliters of the patient's blood sample). A 50-ml blood sample is then drawn from the patient's internal cubital vein. Time is

given for 10 seconds to ensure that the blood sample mixes with the anticoagulant drug. The tubes containing the above substance are centrifuged at 3000 rpm for 4 minutes. After centrifugation, there are three parts in the tube: a plasma part with few platelets, a tissue part and a red blood cell part. Since PRP is a combination of tissue and plasma, the red blood cells are separated from the kits. For final concentration, the separate parts containing PPP and buffy coat are centrifuged again at 3000 rpm for 4 minutes. The remaining PRP is then aspirated from each test tube and activated by adding calcium chloride (0.1 ml per 0.9 ml PRP) to finally obtain 6 ml of active PRP.

Category

Treatment - Other

3

Description

Intervention group 3: Combination of erbium Yag laser followed by intralesional injection of Normal Saline.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Skin and Stem Cell Research Center of Tehran
University of Medical Sciences

Full name of responsible person

Masoomeh Rohaninasab

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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University of Medical Sciences

Full name of responsible person

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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

Skin and Stem Cell Research Center of Tehran University of Medical Sciences

Proportion provided by this source

100

Public or private sector

Public

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Iran University of Medical Sciences

Full name of responsible person

Masoumeh Roohaninasab

Position

Associate professor

Latest degree

Specialist

Other areas of specialty/work

Dermatology

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Person responsible for updating data

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Full name of responsible person

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Position

Resident

Latest degree

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to

make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to
make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to
make this available
Clinical Study Report

Undecided - It is not yet known if there will be a plan to
make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to
make this available
Data Dictionary
Not applicable