Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparing the efficacy of combination erbium laser and topical minoxidil treatment with topical minoxidil alone in patients with moderate to severe male androgenetic alopecia

Protocol summary

Study aim
The effect of erbium laser in the treatment of androgenetic alopecia

Design
Clinical trial with control group, parallel, quasi-randomized groups on 30 patients and for randomization couple and single days of referral is used.

Settings and conduct
The study is carried out on patients with moderate to severe androgenetic alopecia referred to medical centers of Isfahan University of Medical Sciences .After examination, history and satisfaction of patients who meet the inclusion criteria will be randomly assigned to two groups.The control group receives 5% topical minoxidil solution twice a day and the intervention group, in addition to the mentioned treatment, receives 6 sessions of erbium laser at two-week intervals and after 12 weeks, patients will be compared and evaluated by standard photography and trichogram at the beginning and end of treatment.

Participants/Inclusion and exclusion criteria
Patients with moderate to severe androgenic alopecia who do not have serious systemic diseases, psoriasis and lichen planus, as well as no history of hair transplantation and photosensitivity.

Intervention groups
The control group receives topical minoxidil and in the intervention group, in addition to the mentioned treatment, erbium laser is also performed.

Main outcome variables
Hair thickness, number of hair, change of photographic score, patient satisfaction.

General information

Reason for update
Due to the reluctance of most patients to use finasteride and considering that minoxidil alone is also a standard and approved treatment, finasteride was excluded from the study.

Acronym

IRCT registration information
IRCT registration number: **IRCT20210404050847N1**
Registration date: **2021-04-16, 1400/01/27**
Registration timing: **prospective**

Last update: **2022-11-23, 1401/09/02**
Update count: **1**

Registration date
2021-04-16, 1400/01/27

Registrant information

Name
Zahra Zavareh

Name of organization / entity

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Iran (Islamic Republic of)

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+98 31 3670 2116

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z.zavare@yahoo.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-05-22, 1400/03/01

Expected recruitment end date
2022-05-22, 1401/03/01

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Comparing the efficacy of combination erbium laser and topical minoxidil treatment with topical minoxidil alone in patients with moderate to severe male androgenetic alopecia

Public title
Effect of Erbium Laser on Androgenetic Alopecia
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Patients with androgenetic alopecia in moderate to severe stages Age over 20 years
Exclusion criteria:
Patients with other types of alopecia Patients with psoriasis or lichen planus Any serious systemic disease Patients who are photosensitive Patients who have performed hair transplants in the past.
Age
From **20 years** old
Gender
Male

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
Referring in couple date ,placed in intervention group and referring in single date, placed in control group.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Isfahan University of Medical Sciences
Street address
Hezarjarib St., Isfahan University of Medical Sciences
City
Esfahan
Province
Isfehan
Postal code
8174673461
Approval date
2021-03-20, 1399/12/30
Ethics committee reference number
IR.MUI.MED.REC.1399.1191

Health conditions studied

1

Description of health condition studied
Androgenetic alopecia
ICD-10 code
L64
ICD-10 code description
Androgenic alopecia

Primary outcomes

1

Description
Increase hair density and thickness.
Timepoint
At the beginning of the study and then 12 weeks later, which is the end of the study.
Method of measurement
Trichogram and standard photography

Secondary outcomes

1

Description
Patient satisfaction score, physician satisfaction score.
Timepoint
At the beginning of the study and then 12 weeks later, which is the end of the study.
Method of measurement
A 7-point questionnaire was allocated for patient satisfaction;also, a 7-point questionnaire developed by a physician based on a comparison of standard photographic scores and trichogram comparisons (checking the thickness and number of hairs).

Intervention groups

1

Description
Intervention group: receiving topical minoxidil 5% twice daily and performing erbium laser in 6 sessions with two-week intervals for 12 weeks
Category
Treatment - Other

2

Description
Control group: receiving topical minoxidil 5% twice daily.
Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Alzahra hospital
Full name of responsible person
Zahra Zavareh
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Soffe Blvd
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Esfahan University of Medical Sciences
Full name of responsible person
Shaghayegh Haghjoo javanmard
Street address
No.4 building.,Esfahan University of Medical Sciences.,Hezar Jerib St
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Phone
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Email
research@mui.ac.ir
Web page address

Grant name

Grant code / Reference number

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

Title of funding source
Esfahan 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
Esfahan University of Medical Sciences
Full name of responsible person
Zahra Zavareh
Position
Resident
Latest degree
Medical doctor
Other areas of specialty/work
Dermatology
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
No information
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
Undecided - It is not yet known if there will be a plan to make this available