

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Jun 2026

Combined pulsed Co2 laser and Q-switched Nd:YAG laser versus Q-switched Nd:YAG laser for the removal of eyebrow tattoo.

Protocol summary

Summary

The prevalence of cosmetic tattoos has grown significantly in recent years, and the demand for tattoo removal has also increased dramatically. A variety of methods have been used to remove tattoos. Q-switched lasers emitting short, high-intensity pulses are widely used for treatment of unwanted tattoos and based on the principles of selective photothermolysis. The overall treatment course is often prolonged, costly and sometimes impractical which can lead to patient dissatisfaction and abandonment of the treatment. For these reasons we hypothesized that the addition of CO₂ laser to Q-switched Nd:YAG treatment of tattoos would enhance the rate of pigment clearance and decrease the degree of treatment-induced hypo and hyperpigmentation. The use of CO₂ laser, aiming to remove epidermis, followed by Q-switched laser may allow Q-switched laser to reach a deeper lesion in the dermis without serious side effect. Our study is a single blinded randomized controlled trial. Inclusion criteria: female with eyebrow tattoo; brown and black tattoo and amateur tattoo. Exclusion criteria: pregnancy; coagulation abnormality and viral and bacterial infection. 20 patients with eyebrow tattoo that come to Dr. Radmanesh clinic in Ahvaz, Iran are randomized and treated with combined CO₂ laser and Q-switched Nd:YAG laser on one side of eyebrow and Q-switched Nd:YAG alone on the other side. The outcome is evaluated after 2 months. The time of this study is 2012.3.20 until 2013.3.21. Subjects are examined and standardized digital color photographs are taken before and 2 months after treatment. Two doctors separately evaluate tattoo lightening and adverse effects. The grading system for tattoo lightening is: 1=0-25% (slight), 2=26-50% (moderate), 3=51-75% (good), 4=more than 75% (excellent). Efficacy of tattoo age, tattoo color and skin type on tattoo lightening also is evaluated. Adverse effects include presence of blister, scar, hyperpigmentation. Hypopigmentation and inflammation.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2012121611776N1**
Registration date: **2013-01-03, 1391/10/14**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2013-01-03, 1391/10/14

Registrant information

Name

Shohreh Rafiee

Name of organization / entity

Jundishapour Ahvaz University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 61 1391 2301

Email address

rafiee.sh@ajums.ac.ir

Recruitment status

Recruitment complete

Funding source

Ahvaz Jundishapour University of Medical Sciences

Expected recruitment start date

2012-05-21, 1391/03/01

Expected recruitment end date

2013-03-21, 1392/01/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Combined pulsed Co2 laser and Q-switched Nd:YAG laser versus Q-switched Nd:YAG laser for the removal of eyebrow tattoo.

Public title

Efficacy of combined co2 and Q-switched lasers in eyebrow tattoo removal

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:female with eyebrow tattoo; brown and black tattoo and amature tattoo. Exclusion criteria: pregnancy; coagulation abnormality and viral and bactial infection.

Age

No age limit

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 20

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

Ahvaz Jundishapour University of Medical Sciences ethics Committee

Street address

Ahvaz Jundishapour University of Medical Sciences, Esfand street, Golestan blv.,

City

Ahvaz

Postal code

15794-61357

Approval date

2012-04-28, 1391/02/09

Ethics committee reference number

eth-449

Health conditions studied

1

Description of health condition studied

eyebrow tattoo removal

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

tattoo color

Timepoint

Two monthes

Method of measurement

Visual color

Secondary outcomes

1

Description

hyperpigmantation

Timepoint

Two monthes

Method of measurement

Visual color

Intervention groups

1

Description

Intervention group: Co2 and Q-switched Nd:YAG laser in right eyebrow

Category

N/A

2

Description

Control group: Q-switched Nd:YAG laser alone in left eyebrow

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Dr. Radmanesh clinic

Full name of responsible person

Dr. Shohreh Rafiee

Street address

Kiyan pars, 4 east street

City

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz Jundishapour University of Medical Sciences,
vice chancellor for research and technology

Full name of responsible person

Dr. Mostafa Fegghi

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Ahvaz Jundishapour University of Medical Sciences,
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Ahvaz

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Ahvaz Jundishapour University of Medical Sciences, vice
chancellor for research and technology

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

Ahvaz Jundishapour University of Medical Sciences

Full name of responsible person

Shohreh Rafiee

Position

MD, Dermatology resident

Other areas of specialty/work

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Person responsible for scientific inquiries

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Associated proffosor of dermatology

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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

