

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Comparative evaluation of low-power laser and co2 laser in treatment of patients with oral lichen planus presenting to the oral Medicine Department at the Dentistry faculty in Tehran University of Medical Sciences in 1388-1389.

Protocol summary

Summary

The aim of this study is to compare the effects of low-power laser and co2 laser on decreasing sign and symptom of oral lichen-planus lesions. It is an open-labeled, before-after study, treating 60 lesions (30 lesions in low-power laser group and 30 lesions in co2 laser group) with clinical and histopathologic diagnosis of lichen-planus. The participants are recruited among the patients who refer to the Oral Medicine Department at the Dentistry Faculty in Tehran University of Medical Sciences (TUMS). The lesions in low-power laser group receive first, visible red laser light then, infra-red laser light every other day for 5 sessions. The lesions in co2 laser group receive laser light at one session and follow-up sessions are the same as low- power laser group. Before treatment and during these sessions the patients will ne asked for pain and burning sensation. The size of lesions is also assessed with scaled tongue blade. The scores of the lesions are recorded each time, based on thongprasom sigh scoring by the researcher. Pain and burning sensation are measured by using visual analogue scale. The patients are examined at the baseline and 2 and 4 weeks and also 2 and 3 months after the intervention.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201008161559N4**
Registration date: **2010-09-12, 1389/06/21**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2010-09-12, 1389/06/21

Registrant information

Name

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2009-04-04, 1388/01/15

Expected recruitment end date

2010-10-07, 1389/07/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparative evaluation of low-power laser and co2 laser in treatment of patients with oral lichen planus presenting to the oral Medicine Department at the Dentistry faculty in Tehran University of Medical Sciences in 1388-1389.

Public title

Comparative evaluation of low-power laser and co2 laser in treatment of oral lichen planus.

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria: clinical and histopathologic diagnosis of lichen planus with clinical criteria, consisting of the presence of symmetric reticular or papular lesions with or without erosive-atrophic components. Histopathologic features of oral lichen planus are: 1) Areas of hyperparakeratosis or hyperorthokeratosis, often with a thickening of the granular cell layer and a saw-toothed appearance to the retepages. 2) Liquefaction degeneration or necrosis of the basal layer. 3) A dense subepithelial band, shaped by infiltration of lymphocytes T and macrophages. 4) Absence of dysplastic changes. Exclusion criteria: Using drugs (including for the treatment of lichen planus at the first session) and exposure to amalgam fillings.

Age
No age limit

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: 60

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
Dental Sciences Research center, Tehran University of Medical Sciences

Street address
Dental Sciences Research center, Tehran University of Medical Sciences, Ghods Ave., Keshavarz Blvd., Tehran, Iran

City
Tehran

Postal code

Approval date
2010-05-25, 1389/03/04

Ethics committee reference number
890170-10045

Health conditions studied

1

Description of health condition studied

lichen planus

ICD-10 code

L43

ICD-10 code description

lichen planus

Primary outcomes

1

Description

size of lesions

Timepoint

2 weekly in the first month and then monthly for 3 months

Method of measurement

size of lesions with scaled tongue blade

2

Description

pain and discomfort in the oral lesions

Timepoint

2 weekly in the first month and then monthly for 3 months

Method of measurement

VAS

3

Description

clinical score

Timepoint

2 weekly in the first month and then monthly for 3 month

Method of measurement

Registration the primary scores of lesions and their changes on the follow up period as described in the material and method

Secondary outcomes

empty

Intervention groups

1

Description

Low power laser including red light ($\lambda=633$ nm, light exposure dose=0.3 J/cm²) and infrared light ($\lambda=830$ nm, light exposure dose=0.3 J/cm²) every other day for 5 sessions

Category

Treatment - Other

2

Description

Co2 laser ($\lambda=10600$ nm, 20 W) at one session.

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Oral medicine department of Tehran University of Medical Sciences

Full name of responsible person

Dr. Aghahosseini, Dr. Elham Moslemi

Street address

Oral medicine department, Dentistry faculty, Tehran University of Medical Sciences, Ghods Ave., Keshavarz Blvd., Tehran, Iran

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Research center of dental Science of Tehran University of medical sciences

Full name of responsible person

Dr. Azam khorshidian

Street address

Dental Sciences Research center, Tehran University of Medical Sciences

City

Tehran

Grant name

در اختیار دانشگاه علوم پزشکی تهران

Grant code / Reference number

Tehran University of Medical Sciences

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

Yes

Title of funding source

Research center of dental Science of Tehran 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

Oral Medicine Department, Tehran University of Medical Sciences

Full name of responsible person

Dr. Elham Moslemi

Position

Resident of oral medicine

Other areas of specialty/work

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Oral medicine department of Tehran University of Medical Sciences

Full name of responsible person

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Position

Professor

Other areas of specialty/work

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Web page address

Person responsible for updating data

Contact

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