

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effect of low power laser (LPL) on soft tissue wound healing and pain reduction after dental implant surgery

Protocol summary

Summary

Objective: This randomized double-blind comparative study was undertaken to assess the efficacy of low power laser therapy in the healing of post-operative soft tissue wound and reduction of pain in patients who had been received implants. This study included 21 patients of both sexes and according to the inclusion and exclusion criteria were selected from patients whom had been received implants bilaterally in posterior sites of their jaws. Each side of every Patient's was randomly allocated to one of two groups according split mouth model: LLLT, or placebo. Subsequently to suturing, Sides in LLLT group were treated with 808nm and 660nm laser irradiation, intraorally 1mm from the target tissue 200s for 660nm and 20s for 808nm to 3 aspects, buccal, lingual and occlusal, every 48hs until 12th day. In placebo sides the handpiece was put intra orally but laser was not activated. Wound healing was evaluated on third, seventh and fourteenth post-operative day and pain reduction evaluated on 12th ,24th ,48th and 72 th hour after surgery by means of visual analogue scale (Vas).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015061322699N1**

Registration date: **2017-03-17, 1395/12/27**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2017-03-17, 1395/12/27

Registrant information

Name

Reza Birang

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

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Recruitment status

Recruitment complete

Funding source

Deputy Dean for research, Faculty of Dentistry, Isfahan university of Medical Sciences

Expected recruitment start date

2017-02-20, 1395/12/02

Expected recruitment end date

2017-05-23, 1396/03/02

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of low power laser (LPL) on soft tissue wound healing and pain reduction after dental implant surgery

Public title

Effect of low power laser (LPL) on soft tissue wound healing and pain reduction after dental implant surgery

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria: Patients were registered at the implant department of faculty of dentistry of Isfahan University of medical sciences, possessed of unilaterally posterior edentulous ridges, good bone quality, healthy systemic, not using corticosteroids and bisphosphonate, without sever anxiety and dentistry phobia, age at least 18, without mental disability Exclusion criteria: Low

compliant patients, not attending at the expected time of measurement, smoking, any contraindication of laser therapy, pregnancy

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 42

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethic committe of Isfahan University Of Medical Sciences

Street address

Hezar Jarib, Dental School, Isfahan University Of Medical Sciences, Department of Dental Implants

City

Isfahan

Postal code

8174673461

Approval date

2017-02-19, 1395/12/01

Ethics committee reference number

IR.MUI.REC.1395.3.842

Health conditions studied

1

Description of health condition studied

Gingival wound healing

ICD-10 code

Z01.2

ICD-10 code description

Dental examination

Primary outcomes

1

Description

Wound healing

Timepoint

The third, seventh and fourteenth day after surgery

Method of measurement

Direct observation and comparison to standard images

Secondary outcomes

1

Description

pain

Timepoint

12th, 24 th, 48 th and 72 th hour after surgery

Method of measurement

visual analogue scale (Vas)

Intervention groups

1

Description

Intervention Group: Sides in LLLT group were treated with 808nm and 660nm laser irradiations, intraorally 1mm from the target tissue 200s for 660nm and 20s for 808nm to 3 aspects, buccal, lingual and occlusal, every 48hs until 12th day.

Category

Other

2

Description

Control group: Sides in placebo sides the hand piece was put intraorally 1mm from the target tissue 200s for 660nm and 20s for 808nm to 3 aspects, buccal, lingual and occlusal, every 48hs until 12th day. But laser was not activated.

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Faculty of Dentistry, Isfahan University of Medical sciences

Full name of responsible person

Soheil Noohi

Street address

Hezarjarib St.

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Deputy Dean of research, Faculty of dentistry, Isfan
University of Medical Sciences

Full name of responsible person

Dr Reza Birang

Street address

Hezarjarib St, Faculty of Dentistry

City

Isfahan

Grant name

تحقیقاتی

Grant code / Reference number**Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Deputy Dean of research, Faculty of dentistry, Isfan
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**

Faculty of Dentistry, Isfahan University of Medical
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Full name of responsible person

Soheil Noohi

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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