Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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

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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.

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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
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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

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Person responsible for updating data

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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