Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Comparison of the effect of two wavelengths of 660 and 808 nm as a low-level laser therapy on non-surgical periodontal treatment in patients with chronic periodontitis

Protocol summary

Study aim

Comparison of the effect of two wavelengths of 660 and 808 nm as a low-level laser therapy on non-surgical periodontal treatment in patients with chronic periodontitis

Design

Controlled, randomized, double-blind, parallel clinical trial, split mouth structure, sample size of 71 patients, Convenience sampling, selection of quadrants and wavelength type based on random shift pattern , in four-mode quadrant selection (AB-BA-CD-DC) which is repeated periodically based on the patient's number.In the first quadrant, the laser is 660 nm and in the second quadrant, the laser is 808 nm.

Settings and conduct

A double-blind study (patient and periodontal specialist) performed at the School of Dentistry examines the clinical parameters of periodontitis, including: clinica attachment level , bleeding on probing, gingival index and probing pocket depth in patients' premolars . SRP treatment is performed throughout the mouth. The diode laser is then irradiated with two wavelengths of 660 nm and 808 nm in two different quadrants and by the student.Diode laser treatment is repeated 1, 3 and 7 days later.

Participants/Inclusion and exclusion criteria

Inclusion: 1) chronic periodontitis with = 6-4PPD = and CAL ≥3mm in maxillary premolars 2) People over 20 years old No entry: 1) Any periodontal treatment in the last 6 months. 2) Use of antibiotics for the past 3 months for a week. 3) systemic disease affecting the periodontal tissue 4) Drug use. 5) Pregnancy and lactation. 6) Use of drugs that affect periodontal tissue 7) Patients with partial dentures. 8) fixed prostheses in premolars. 9) grade 3 mobility.

Intervention groups

Scaling and Root Planing is done in the whole mouth, then the diode laser with two wavelengths of 660 nm and 808 nm is irradiated in two

Main outcome variables

Improve periodontal parameters such as:clinica attachment level, bleeding on probing, gingival index and probing pocket depth

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20201005048942N1**
Registration date: **2020-10-24, 1399/08/03**
Registration timing: **registered_while_recruiting**

Last update: **2020-10-24, 1399/08/03**
Update count: **0**

Registration date

2020-10-24, 1399/08/03

Registrant information

Name
Faezeh Estaji
Name of organization / entity
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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-08-22, 1399/06/01

Expected recruitment end date

2021-02-19, 1399/12/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of two wavelengths of 660 and 808 nm as a low-level laser therapy on non-surgical periodontal treatment in patients with chronic periodontitis

Public title

Investigation of the effect of two wavelengths of 660 and 808 nm on chronic periodontitis

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Having chronic periodontitis with mmP-4-6 and CAL ≥3mm in maxillary premolars People over 20 years old

Exclusion criteria:

Any periodontal treatment has been performed in the last 6 months. Use of antibiotics for the past 3 months for a week. Existence of systemic diseases affecting periodontal tissue such as diabetes, cancer patients undergoing radiotherapy, malnutrition, zerostomia, hyperparathyroidism, hormonal diseases Smoking, alcohol or other drugs. Pregnancy and lactation. The use of drugs that affect the periodontal tissue, such as immunosuppressive drugs, anticonvulsants, antihypertensives. Patients with partial dentures. Patients with fixed prostheses in premolars. Teeth with grade 3 mobility.

Age

From **20 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Outcome assessor

Sample size

Target sample size: **71**

More than 1 sample in each individual

Number of samples in each individual: **2**

Two quadrants One jaw is selected from the four quadrants in the patient's mouth. In patients who have premolars in all four quadrants, the choice of quadrant and the wavelength used for it will be based on a random permutation pattern. In selecting the quadrant, we have four modes (AB-BA-CD-DC) which are repeated periodically based on the patient number. In the first quadrant, 660 nm laser light is irradiated and in the second quadrant, 808 nm laser light is irradiated.

Randomization (investigator's opinion)

Randomized

Randomization description

Patients are selected by Convenience sampling, but to select the studied quadrants and the type of wavelength, a random permutation pattern using a random number table will be used.

Blinding (investigator's opinion)

Double blinded

Blinding description

Patient: Aware of laser radiation but does not know what wavelength each quadrant has received. Periodontal specialist: Measures clinical parameters but does not know what wavelength each quadrant has received.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Golestan University of Medical Sciences

Street address

Shahriar 5, Shahriar Town,Gorgan

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Postal code

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Approval date

2020-09-30, 1399/07/09

Ethics committee reference number

IR.GOUMS.REC.1399.196

Health conditions studied

1

Description of health condition studied

Chronic periodontitis

ICD-10 code

K05.30

ICD-10 code description

Chronic periodontitis, unspecified

Primary outcomes

1

Description

Clinica attachment level ,Bleeding on probing, Gingival index, . Probing pocket depth

Timepoint

1,3 and 6 month after treatment

Method of measurement
williams periodontal probe(Hu-Friedy,Chicago/USA)

Secondary outcomes

1

Description
Improving periodontal status and oral hygiene
Timepoint
1, 3 and 6 months after treatment
Method of measurement
williams periodontal probe(Hu-Friedy,Chicago/USA)

Intervention groups

1

Description
Intervention group 1:After Scaling and Root Planing Low level laser (Klas-DX, Konftec, Malaysia) with a wavelength of 660 nm. Diode laser treatment is repeated 1, 3 and 7 days after the initial treatment. How to irradiate laser light from buccal and lingual surfaces (palatal) non-contact (distance of fiber with tissue 0.5 mm) and continuous (power) with power W2 / 0 for s20 with fiber diameter ^ 2 cm 1 is for the buccal and lingual surfaces of the tooth.
Category
Treatment - Other

2

Description
Intervention group 2:After Scaling and Root Planing Low level laser (Klas-DX, Konftec, Malaysia) is irradiated with a wavelength of 808 nm. Diode laser treatment is repeated at intervals of 1, 3 and 7 days after initial treatment. How to irradiate laser light from buccal and lingual surfaces (palatal) non-contact (distance of fiber with tissue 0.5 mm) and continuous (power) with power W2 / 0 for s20 with fiber diameter ^ 2 cm 1 is for the buccal and lingual surfaces of the tooth.
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Gorgan Dental School
Full name of responsible person
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Sponsors / Funding sources

1

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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Gorgan 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
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Position
Assistant Professor
Latest degree
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available

Study Protocol
Yes - There is a plan to make this available

Statistical Analysis Plan
Yes - There is a plan to make this available

Informed Consent Form
Yes - There is a plan to make this available

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code
Not applicable

Data Dictionary
Not applicable

Title and more details about the data/document
Information about the main outcome can be shared.

When the data will become available and for how long
Since 1399

To whom data/document is available
Researchers working in academic and scientific institutions

Under which criteria data/document could be used
There are no conditions.

From where data/document is obtainable
estaji.f@goums.ac.ir

What processes are involved for a request to access data/document
There is no process

Comments