

Clinical Trial Protocol

Iranian Registry of Clinical Trials

18 Sep 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: clinical 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 $\geq 6-4PPD$ and $CAL \geq 3mm$ 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: clinical 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

Country

Iran (Islamic Republic of)

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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 ≥ 3 mm 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, xerostomia, 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

Clinical 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

Amir Reza Ahmadinia

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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Full name of responsible person

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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**

Gorgan University of Medical Sciences

Full name of responsible person

Amir Reza Ahmadinia

Position

Assistant Professor

Latest degree

Specialist

Other areas of specialty/work

Dentistry

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Person responsible for scientific inquiries

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Full name of responsible person

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Latest degree

A Level or less

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Person responsible for updating data

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Latest degree

A Level or less

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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