Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Comparing the efficiency of diode laser 940 nm and Er, Cr:YSGG 2780 nm on clinical indices and MMP-13 level during phase I periodontal therapy of chronic periodontitis

Protocol summary

Study aim
the effect of 2 wave-lenght laser therapy with SRP on GCF MMP-13 levels in chronic periodontitis
Design
clinical trial , double-blind, split-mouth
Settings and conduct
periodontics department, Islamic Azad university of medical science split-mouth design on 16 patients with 6 months follow up double blind study(participant and investigator)
Participants/Inclusion and exclusion criteria
No systemic disease, having at least 16 teeth, no use of drugs (anti-biotic, corticostroid, immuo-suppressive), no history of periodontal treatment during last 6 months, no pregnancy and/or breast-feeding
Intervention groups
test groups: 2 quadrants will be treated by diode laser 940nm or Er,Cr:YSGG 2780nm following SRP(scaling and root planing). control group: the third quadrant will recieve only SRP treatment
Main outcome variables
Matrix metalloproteinase(MMP)13 level clinical attachment level (CAL)

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20140318017053N9**
Registration date: **2019-02-14, 1397/11/25**
Registration timing: **retrospective**

Last update: **2019-02-14, 1397/11/25**
Update count: **0**
Registration date
2019-02-14, 1397/11/25

Registrant information
Name
Ferena Sayar
Name of organization / entity
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Iran (Islamic Republic of)
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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2018-09-23, 1397/07/01
Expected recruitment end date
2018-11-22, 1397/09/01
Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Comparing the efficiency of diode laser 940 nm and Er, Cr:YSGG 2780 nm on clinical indices and MMP-13 level during phase I periodontal therapy of chronic periodontitis

Public title
The effect of laser therapy on MMP-13 level during periodontal treatment
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
systemic health Having 16 teeth or more

Exclusion criteria:
smoking pregnancy breast-feeding use of drugs (corticostroid, anti-biotic, immuno-suppressive) periodontal therapy during the last 6 months.

Age
From **25 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Participant
- Investigator

Sample size
Target sample size: **16**
More than 1 sample in each individual
Number of samples in each individual: **3**
collecting GCF

Randomization (investigator's opinion)
Not randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description
investigator will not aware of the control and test sites, she only records clinical data. because of application of 2 wave-length laser,participants will not aware of type of recieved treatment in each quadrant

Placebo
Not used

Assignment
Parallel

Other design features
split-mouth

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Faculty of Dentistry Tehran Medical sciences , Islamic Azad University

Street address
No.4 , 10th Neyestan st. , Pasdaran Ave.

City
Tehran

Province
Tehran

Postal code
19585/175

Approval date
2018-04-22, 1397/02/02

Ethics committee reference number
IR.IAU.DENTAL.REC.1397.020

Health conditions studied

1

Description of health condition studied
chronic periodontitis

ICD-10 code
K05.3

ICD-10 code description
Chronic periodontitis

Primary outcomes

1

Description
clinical attachment level.

Timepoint
base-line , 2 and 6 months after phase I periodontal therapy.

Method of measurement
periodontal probe.

2

Description
matrix metalloproteinase-13

Timepoint
base-line , 2 and 6 months after phase I periodontal therapy.

Method of measurement
ELISA test

Secondary outcomes

1

Description
pocket depth.

Timepoint
base-line , 2 and 6 months after phase I periodontal therapy.

Method of measurement
periodontal probe.

2

Description
bleeding on probing.

Timepoint
base-line , 2 and 6 months after phase I periodontal therapy.

Method of measurement
periodontal probe.

Intervention groups

1

Description
Intervention group 1: diode laser 940 nm (Ezlase, biolase, USA) , 1 W , 20 sec.

Category
Treatment - Devices

2

Description
Intervention group 2 : laser Er,Cr:YSGG 2780 nm (iPlus, Waterlase, Biolase, USA) 1.5 W , 30 Hz , 11% air , 20% water , pulse duration 140 µs.
Category
Treatment - Devices

3

Description
Control group: phase I periodontal therapy
Category
Treatment - Devices

Recruitment centers

1

Recruitment center
Name of recruitment center
Department of Periodontics, Faculty of Dentistry, Tehran Medical sciences, Islamic Azad University
Full name of responsible person
DR.Ferena Sayar
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department of periodontics, no:4, 10th neyestan st., pasdaran ave.
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Islamic Azad University
Full name of responsible person
Ferena Sayar
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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
Islamic Azad University
Proportion provided by this source
1
Public or private sector
Private
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
Islamic Azad University
Full name of responsible person
Ferena Sayar
Position
Associate professor
Latest degree
Specialist
Other areas of specialty/work
Dentistry
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
There is no further information
Study Protocol
No - There is not a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
No - There is not a plan to make this available
Clinical Study Report
No - There is not a plan to make this available
Analytic Code
No - There is not a plan to make this available
Data Dictionary
No - There is not a plan to make this available