

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Jun 2026

The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial

Protocol summary

Registration timing: **retrospective**

Summary

Objectives: The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial
Design: Premolar extraction will be done at eight orthodontic patients after primary. On one side of each jaw, the defects will be preserved as the experimental group by immediately placing LPRF in the extracted socket and will be sutured, the other side will serve as the control group for secondary healing. Immediately, the teeth adjacent to the defects will be pulled together by a NiTi-based closed-coil spring with constant force level. The amounts of OTM will be measured by comparing the changes of distance between the adjacent teeth in two weeks interval for three months. The exact amounts of tooth movement will be measured clinically by Boley Gauge Caliper with sharp tips located at the CEJ of crowns of the casts and then will be compared and double checked by another independent blind examiner.
Primary Outcome Measures: the amount of tooth movement and to compare the amount of tooth movement between maxillary and mandibular arches.
Secondary Outcome Measures: Incidence of mucogingival defects as clinically measured by gingival recession (GR), clinical attachment level (CAL), probing depth (PD), width of keratinized tissue (WKT) and (biotype), by a calibrated examiner. **Inclusion Criteria:** bilaterally symmetric extraction of premolar teeth; no medicines or systemic illness; **Exclusion Criteria:** syndromic & systemic illness or medication like NSAIDS that interfere with OTM; prior orthodontic treatment.

Last update:

Update count: **0**

Registration date

2016-03-23, 1395/01/04

Registrant information

Name

Azita Tehranchi

Name of organization / entity

Dental School Shahid Beheshti University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Dental Research Center, Shahid Beheshti University of Medical Sciences.

Expected recruitment start date

2015-03-20, 1393/12/29

Expected recruitment end date

2016-03-19, 1394/12/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial

General information

Acronym

rate of orthodontic tooth movement following LPRF

IRCT registration information

IRCT registration number: **IRCT2015100724405N1**

Registration date: **2016-03-23, 1395/01/04**

Public title

The effect of autologous leukocyte platelet rich fibrin (LPRF) on the rate of orthodontic tooth movement- a prospective randomized clinical trial

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion Criteria: more than 12 years old patients; bilaterally symmetric extraction of premolar teeth; no medicines or systemic illness; full banding/bonding of teeth in both arches. Exclusion Criteria: pregnancy; non-extraction treatment; syndromic & systemic illness or medication like NSAIDs that interfere with OTM; prior orthodontic treatment.

Age

From **12 years** old to **25 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **8**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

ETHICAL COMMITTEE, RESEARCH INSTITUTE OF DENTAL SCIENCES

Street address

EVIN DENTAL SCHOOL SHAHID BEHESHTI UNIVERSITY
IF MEDICAL SCIENCES

City

Tehran

Postal code

1983963113

Approval date

2014-03-02, 1392/12/11

Ethics committee reference number

9310

Health conditions studied

1

Description of health condition studied

orthodontic tooth movement

ICD-10 code

Z51.8

ICD-10 code description

Other specified medical care

Primary outcomes

1

Description

the amount of tooth movement and to compare the amount of tooth movement between maxillary and mandibular arches

Timepoint

[Time Frame: 0 days, 15 days, 1st month, 1.5 and 2nd month, 2.5 and 3rd month after start of treatment and conventional orthodontic]

Method of measurement

The amounts of OTM will be measured by comparing the changes of distance between the adjacent teeth in two weeks interval for three months. The exact amounts of tooth movement will be measured clinically by Boley Gauge Caliper with sharp tips located at the CEJ of crowns of the casts and then will be compared and double checked by another independent blind examiner (to evaluate the interobserver and intraobserver reliability).

Secondary outcomes

1

Description

mucogingival defects, gingival recession, clinical attachment loss, probing depth, width of keratinized gingiva

Timepoint

Time Frame: 0 days, 15 Days, 1st month, 1.5 month

Method of measurement

aesculap periodontal probe

Intervention groups

1

Description

in this study, after leveling in each quadrant of upper and lower arches, the extracted sockets would receive LPRF in case group.

Category

Other

2

Description

In control group, no LPRF would be applied in empty extracted sockets.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Private Clinic

Full name of responsible person

Street address

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Dental Research Center

Full name of responsible person

Dr Azita Tehranchi

Street address

Daneshjoo Blv, Evin, Chamran Highway,

City

Tehran

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Dental Research Center

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

Dental Research Center, Research Institute of Dental Sciences

Full name of responsible person

Dr Azita Tehranchi

Position

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Other areas of specialty/work

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Web page address

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