

Platelet-rich plasma injections and periodontal health

Submission date 29/08/2024	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 30/08/2024	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 02/09/2025	Condition category Oral Health	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

The aim of this study was to evaluate the effects of platelet-rich plasma (PRP) injections, a method of accelerating orthodontic tooth movement, on the health of periodontal (gum) tissues.

Who can participate?

Patients aged 18 to 25 years with anterior teeth crowding.

What does the study involve?

Participants are randomly assigned to either the PRP group or the control group. The PRP group received PRP injections at 0, 7, and 14 days, while the control group received standard orthodontic treatment without additional interventions. Periodontal health was evaluated at the start of the study and after 4, 8 and 12 weeks.

What are the possible benefits and risks of participating?

This study will evaluate the effects of PRP injection to accelerate orthodontic tooth movement on periodontal health. There is a risk of not achieving optimal results in some cases but the study team can manage these cases with alternative methods.

Where is the study run from?

Tishreen University (Syria)

When is the study starting and how long is it expected to run for?

November 2021 to August 2023

Who is funding the study?

Tishreen University (Syria)

Who is the main contact?

Dr May Alel, akeelmai035@gmail.com

Contact information

Type(s)

Public, Scientific, Principal investigator

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Additional identifiers**Clinical Trials Information System (CTIS)**

Nil known

ClinicalTrials.gov (NCT)

Nil known

Protocol serial number

2608

Study information**Scientific Title**

Platelet-rich plasma injections and periodontal health: effects during accelerated orthodontic tooth movement

Study objectives

Does platelet-rich plasma injections during accelerated orthodontic tooth movement affect periodontal health

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 07/12/2021, Tishreen University ethics committee (Lattakia, Lattakia, 0000, Syria; +963 (0)41420291; info@tishreen.edu.sy), ref: 2068

Study design

Comparative interventional randomized controlled study

Primary study design

Interventional

Study type(s)

Quality of life, Treatment

Health condition(s) or problem(s) studied

Anterior teeth crowding

Interventions

Participants are randomly assigned to either the PRP group or the control group. Randomization was achieved using sealed envelopes containing the allocation sequence, ensuring that treatment assignments remained concealed from both researchers and participants until the designated phase of the study. The randomization sequence was generated by an independent academic specialist.

The PRP group received PRP injections at 0, 7, and 14 days, prepared using the double-spin method, while the control group received standard orthodontic treatment without additional interventions. Periodontal health parameters were evaluated at baseline and at 4, 8 and 12 weeks. Aspartate aminotransferase (AST) levels were assessed at baseline, 1 hour, 1 day, 7 days, and 14 days.

Intervention Type

Procedure/Surgery

Primary outcome(s)

Salivary aspartate aminotransferase (AST) activity measured using a spectrophotometer at baseline (before treatment), 1 hour after the start of treatment, 1 week after, and 2 weeks after treatment

Key secondary outcome(s)

Periodontal health parameters, including Periodontal Pocket Depth (PPD), Clinical Attachment Level (CAL), Bleeding on Probing (BOP), and Gingival Recession (GR), were recorded using a UNC-15 periodontal probe at baseline, 4 weeks, 8 weeks, and 12 weeks.

Completion date

23/08/2023

Eligibility**Key inclusion criteria**

1. Individuals aged 18 to 25 years with anterior teeth crowding ranging from 3 to 6 mm
2. Maintaining excellent oral hygiene and periodontal health
3. Without prior orthodontic treatment history

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Upper age limit

25 years

Sex

All

Total final enrolment

40

Key exclusion criteria

1. Systemic medical conditions
2. Dental anomalies in tooth size or shape
3. Current use of anti-inflammatory medications

Date of first enrolment

01/01/2022

Date of final enrolment

01/01/2023

Locations

Countries of recruitment

Syria

Study participating centre

Tishreen University

Lattakia

Lattakia

Syria

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Sponsor information

Organisation

Tishreen University

ROR

<https://ror.org/04nqts970>

Funder(s)

Funder type
University/education

Funder Name
Tishreen University

Alternative Name(s)
October University, Université Tichrine, , TU

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Syria

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available on request from Dr May Alel (akeelmai035@gmail.com) and in the publication related to it after the end of the research.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		16/09/2024	02/09/2025	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes