Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Evaluation of the Success of Inferior Alveolar Nerve Block and Long Buccal Nerve Block Techniques Compared to Simultaneous Intraosseous Injection and Local Infiltration in the Extraction of Mandibular Molars

Protocol summary

Study aim

Comparison of the Success Rate of Inferior Alveolar Nerve Block and Long Buccal Nerve Block Techniques with Simultaneous Intraosseous Injection and Local Infiltration in the Extraction of Mandibular Molars

Design

A clinical trial with two intervention groups and randomized parallel groups on 38 patients needing mandibular molar extraction, using balanced block randomization.

Settings and conduct

The study will include 38 patients needing extraction of posterior mandibular teeth at Alborz University of Medical Sciences. Participants will be divided into two groups: Group 1 will receive Inferior Alveolar Nerve Block and Long Buccal Injection, while Group 2 will undergo simultaneous Intraosseous Injection and Local Infiltration. Success will be evaluated based on the level of pain reported by the patient during the procedure.

Participants/Inclusion and exclusion criteria

Inclusion Criteria: Patients needing to have the posterior mandibular teeth extracted on both sides of the mouth Exclusion Criteria: Suffering from systemic diseases such as cardiovascular, neurological, and renal diseases History of drug allergies (penicillin, codeine, and other anesthetic drugs) Pregnant women Addiction to drugs or alcohol Patients with a history of medical conditions and those taking medications that affect anesthesia, such as neuropsychiatric drugs.

Intervention groups

Group 1: Conventional Inferior Alveolar Nerve Block and Long Buccal Injection, Group 2: Simultaneous Infiltration and Intraosseous Injection

Main outcome variables

Success in Lower Jaw Anesthesia, Pain During Injection, and Pain During Tooth Extraction

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20241111063673N1**
Registration date: **2024-12-23, 1403/10/03**
Registration timing: **prospective**

Last update: **2024-12-23, 1403/10/03**
Update count: **0**

Registration date

2024-12-23, 1403/10/03

Registrant information

Name

Mohamma arsalan Ghavimi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 914 435 7642

Email address

arsalanqavimi@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-01-20, 1403/11/01

Expected recruitment end date

2025-05-21, 1404/02/31

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title
Evaluation of the Success of Inferior Alveolar Nerve Block and Long Buccal Nerve Block Techniques Compared to Simultaneous Intraosseous Injection and Local Infiltration in the Extraction of Mandibular Molars

Public title
Anesthesia Techniques in the Extraction of Mandibular Molars

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Patients needing to have the posterior teeth of the mandible extracted on both sides of the mouth

Exclusion criteria:
Suffering from systemic diseases such as cardiovascular, neurological, and renal diseases History of drug allergies (penicillin, codeine, and other anesthetic drugs) Pregnant mothers. Patients with a history of medical conditions and those taking medications that affect anesthesia, such as neuropsychiatric drugs Addiction to drugs or alcohol.

Age
No age limit

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **38**
More than 1 sample in each individual
Number of samples in each individual: **2**
Two posterior mandibular teeth on both sides of the mouth symmetrically

Randomization (investigator's opinion)
Randomized

Randomization description
The intervention allocation model in this study is balanced block randomization using four-block random blocks, which include four conditions (first right control/first right intervention/first left control/first left intervention). The randomization process is performed using Excel software. This process is conducted before the start of the study by the study methodology consultant, and none of the other researchers are aware of the allocation process. After random allocation, the type of allocation for each sample is placed in a sealed envelope, and the envelopes are numbered and opened during the treatment.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Alborz University of Medical Sciences

Street address
Karaj - 45 Metri Golshahr - Safarian Alley - Deputy of Research and Technology

City
Karaj

Province
Alborz

Postal code
3198764653

Approval date
2024-10-28, 1403/08/07

Ethics committee reference number
IR.ABZUMS.REC.1403.195

Health conditions studied

1

Description of health condition studied
Posterior Mandibular Teeth

ICD-10 code
K02

ICD-10 code description
Dental caries

Primary outcomes

1

Description
Success Rate of Lower Jaw Anesthesia

Timepoint
15 minutes after injection

Method of measurement
Questioning the Patient

Secondary outcomes

1

Description
Pain during injection

Timepoint
Immediately after injection

Method of measurement
Visual Analogue Scale

2

Description
Pain during tooth extraction

Timepoint
after tooth extraction
Method of measurement
Visual Analogue Scale

Intervention groups

1

Description
Intervention group:Alveolar Nerve Block and Long Buccal Nerve Block Technique
Category
Treatment - Drugs

2

Description
Intervention group: Simultaneous Intraosseous Injection and Local Infiltration
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
Specialized Dental Clinic, Alborz Dental School
Full name of responsible person
Arezoo Agha Kuchakzadeh
Street address
Dental School, Ketouei Zadeh Square, 45th Meter Golshahr, Karaj, Iran
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Postal code
3198684868
Phone
+98 26 3353 1614
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dentalclinic@abzums.ac.ir

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Karaj University of Medical Sciences
Full name of responsible person
Razieh Lotfi
Street address
Research and Technology Department, Safarian Alley, 45 Meter Golshahr, Karaj, Iran
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Phone
+98 26 3464 3774
Email
Research@abzums.ac.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Karaj 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
Karaj University of Medical Sciences
Full name of responsible person
Mohammad Arsalan Ghavimi
Position
Student
Latest degree
Bachelor
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)

Yes - There is a plan to make this available

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

Not applicable

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

Yes - There is a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

Upon formal and reasonable request by researchers, the documentation related to each participant will be provided after the information has been anonymized

When the data will become available and for how long

Access will be available from the time of article publication.

To whom data/document is available

Researchers and clinical specialists.

Under which criteria data/document could be used

Data is accessible for research and clinical use.

From where data/document is obtainable

Applicants can access the data by sending an official request to the email arsalanqavimi@gmail.com.

What processes are involved for a request to access data/document

The request will be reviewed by the research team, and if approved, the documentation will be sent to the applicants.

Comments