# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

10 Jun 2026

## Comparing the effect of preparing implant site with piezosurgery and conventional drilling on patient’s post-operative pain and its effect on stability and bone loss around implants after 5 month period follow up

## Protocol summary

**Summary**

30 patient candidate for implant placement in two lateral quadrants are selected for this study.half of the implant osteotomy sites are randomly prepared by conventional drilling and the other half are prepared using piezosurgery. all the surgeries are done by the same operator.after implant placement the patients are given the same analgesic order.post operative pain will be evaluated in days 1, 3 and 10 after the surgery using a VAS (Visual Analogue Scale).The implant stability would also be measured using a Osstell Mentor device at the baseline and days 90 and 150.radiographic evaluation would be done at baseline and 5 months after implant placement using parallel technique. the distance between the implant shoulder and the most coronally point of the bone-implant contact would be recorded at baseline and 5 months later. the difference is considered as marginal bone loss.finally a comparison of all the three parameters would be done between the two groups

## General information

**Acronym**

**IRCT registration information**

IRCT registration number: **IRCT2016041524622N3**
Registration date: **2016-04-30, 1395/02/11**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

**Registration date**

2016-04-30, 1395/02/11

**Registrant information**

**Name**

Samareh Kafilzadeh

**Name of organization / entity**

Hamedan University of Medical Sciences

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**Recruitment status**

**Recruitment complete**

**Funding source**

Hamendan University of medical sciences

**Expected recruitment start date**

2016-04-01, 1395/01/13

**Expected recruitment end date**

2017-02-01, 1395/11/13

**Actual recruitment start date**

empty

**Actual recruitment end date**

empty

**Trial completion date**

empty

**Scientific title**

Comparing the effect of preparing implant site with piezosurgery and conventional drilling on patient’s post-operative pain and its effect on stability and bone loss around implants after 5 month period follow up

**Public title**

the effect of using piezosurgery for implant placement on post operative pain, implant stability and bone loss of implants during a 5 moths period

**Purpose**

Treatment

**Inclusion/Exclusion criteria**

Inclusion criteria: patients candidate for implant placement in two lateral quadrants; implant placement

should be at least 6 months after tooth extraction; No GBR(Guided bone regeneration) needed around implants; patients with no systemic disease; non smoker patients; No antibiotics or drugs should be taken during the last two months Exclusion Criteria: implants placed in the same sextant; implants placed in different bone densities; patients with systemic disease

**Age**
No age limit

**Gender**
Both

**Phase**
N/A

**Groups that have been masked**
*No information*

**Sample size**
Target sample size: **30**

**Randomization (investigator's opinion)**
Randomized

**Randomization description**

**Blinding (investigator's opinion)**
Single blinded

**Blinding description**

**Placebo**
Used

**Assignment**
Parallel

**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

**Ethics committee**

**Name of ethics committee**
Hamedan University of Medical Sciences Ethics Committee

**Street address**
Hamedan- University of Medical Sciences

**City**
Hamedan

**Postal code**

**Approval date**
2016-02-27, 1394/12/08

**Ethics committee reference number**
IR.UMSHA.REC.1394.513

## Health conditions studied

### 1

**Description of health condition studied**
Implant treatment

**ICD-10 code**
K08.1

**ICD-10 code description**
Loss of teeth due to accident, extraction or local periodontal disease

## Primary outcomes

### 1

**Description**
pain

**Timepoint**
first day after surgery

**Method of measurement**
using a Visual Analogue Scale (VAS)

### 2

**Description**
Implant stability

**Timepoint**
Surgery day

**Method of measurement**
using a Osstell Mentor device

### 3

**Description**
Marginal bone loss

**Timepoint**
Surgery day

**Method of measurement**
Periapical radiography

## Secondary outcomes

### 1

**Description**
Pain

**Timepoint**
day 3 after the surgery

**Method of measurement**
using a Visual Analogue Scale (VAS)

### 2

**Description**
Pain

**Timepoint**
day 10 after the surgery

**Method of measurement**
using a Visual Analogue Scale (VAS)

### 3

**Description**
Implant Stability

**Timepoint**
Day 90 after the surgery

**Method of measurement**
Using Osstell Mentor device

**4**

**Description**
Implant Stability
**Timepoint**
Day 150 after the surgery
**Method of measurement**
Using Osstell Mentor device

**5**

**Description**
Marginal bone loss
**Timepoint**
5 months after surgery
**Method of measurement**
Periapical radiography

## Intervention groups

**1**

**Description**
Control group: Osteotomy site is prepared using conventional drilling
**Category**
Treatment - Surgery

**2**

**Description**
Intervention group: Implant osteotomy site is prepared using piezosurgery
**Category**
Treatment - Drugs

## Recruitment centers

**1**

**Recruitment center**
**Name of recruitment center**
Hamedan University of Medical Sciences
**Full name of responsible person**
Ehsan Hooshyar
**Street address**
**City**
Hamedan

## Sponsors / Funding sources

**1**

**Sponsor**
**Name of organization / entity**
Vice chancellor for research, Faculty of dentistry, Hamedan University of Medical Sciences
**Full name of responsible person**
Shahin Kasraei
**Street address**
Hamedan University of Medical Sciences, Hamedan
**City**
Hamedan
**Grant name**
**Grant code / Reference number**
**Is the source of funding the same sponsor organization/entity?**
Yes
**Title of funding source**
Vice chancellor for research, Faculty of dentistry, Hamedan University of Medical Sciences
**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**
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## Person responsible for scientific inquiries

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## Person responsible for updating data

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## 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*