

Clinical Trial Protocol

Iranian Registry of Clinical Trials

18 Jun 2026

Comparison of the effect of four suture materials on the accumulation of streptococcus mutans and staphylococcus aureus microorganisms in patients undergoing dental implant surgery

Protocol summary

Study aim

comparison of the effect of Vicryl Plus, Vicryl, Silk and Nylon sutures on the accumulation of Streptococcus Mutans and Staphylococcus Aureus in patients undergoing Implant Surgery

Design

clinical trial with control group; four parallel group in 20 patient; double blind; randomized

Settings and conduct

surgical area is randomly divided into four sites, and each suture materials including vicryl, vicryl plus, silk and Nylon will be placed in each surgical site at a distance of three millimeters from the adjacent suture. One week after the surgery, the sutures will be separated and placed in a BHI transfer suspension and transmitted to the microbiological laboratory within twelve hours. Then microorganisms will be cultivated to the specific culture medium of each bacteria from the fluid transfer medium. After culture on the media and placing the culture plate in an incubator at 37 ° C for twenty-four hours, the growth of the bacteria will be checked and the number of colonies (CFU units) will be counted.

Participants/Inclusion and exclusion criteria

patients who indicated implant surgery of two adjacent implants, constitute the statistical population of the study. patients with periodontal disease, systemic diseases, or taking other medicines will be excluded from the study

Intervention groups

First intervention group: use of Vicryl plus suture that is multi-strand and contains Triclosan as an antimicrobial material. Second intervention group: use of Vicryl suture that is similar to Vicryl plus but has no Triclosan. Third intervention group: use of nylon suture as a Single-thread suture material Control group: use of silk suture that is multi-strand and is considered as the most

commonly used suture in periodontal surgeries

Main outcome variables

accumulation of bacteria on surgical sutures

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20180714040460N1**

Registration date: **2018-12-12, 1397/09/21**

Registration timing: **retrospective**

Last update: **2018-12-12, 1397/09/21**

Update count: **0**

Registration date

2018-12-12, 1397/09/21

Registrant information

Name

Nima Nadafpour

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 2256 4571

Email address

n_nadaf@dentaliau.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-11-03, 1397/08/12

Expected recruitment end date

2018-12-03, 1397/09/12

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effect of four suture materials on the accumulation of streptococcus mutans and staphylococcus aureus microorganisms in patients undergoing dental implant surgery

Public title

Accumulation of oral microorganisms around the suture materials in implant surgery

Purpose

Prevention

Inclusion/Exclusion criteria**Inclusion criteria:**

All patients who have indication for implant surgery in at least two adjacent implant sites

Exclusion criteria:

to have periodontal diseases to have systemic diseases to take other medicines

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Outcome assessor

Sample size

Target sample size: **20**

More than 1 sample in each individual

Number of samples in each individual: **4**

every patient has four suture materials in his mouth as sample

Randomization (investigator's opinion)

Randomized

Randomization description

Simple randomization by sealed envelope containing numerical codes which allocated to any type of suture materials

Blinding (investigator's opinion)

Double blinded

Blinding description

After implantation, the surgeon uses four types of suture materials with random sequences and one week after surgery, sutures will be delivered to the microbiologist as numerical codes so microbiologist and patient don't know the type of sutures

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of central organization of Islamic Azad university

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No. 4, Neyestan 10, Pasdaran Ave

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19585175

Approval date

2018-10-13, 1397/07/21

Ethics committee reference number

IR.IAU.DENTAL.REC.1397.012

Health conditions studied**1****Description of health condition studied**

surgical site infection around surgical suture materials

ICD-10 code

A48.8

ICD-10 code description

Other specified bacterial diseases

Primary outcomes**1****Description**

accumulation of bacteria on surgical sutures

Timepoint

counting colony forming units after bacterial culture on culture medium

Method of measurement

Counts of colonies with naked eye

Secondary outcomes

empty

Intervention groups**1****Description**

First intervention group: use of Vicryl plus suture that is multi-strand and contains Triclosan as an antimicrobial material

Category

Prevention

2**Description**

Second intervention group: use of Vicryl suture that is similar to Vicryl plus but has no Triclosan

Category

Prevention

3**Description**

Third intervention group: use of nylon suture as a Single-thread suture material

Category

Prevention

4**Description**

Control group: use of silk suture that is multi-strand and is considered as the most commonly used suture in periodontal surgeries

Category

Prevention

Recruitment centers**1****Recruitment center****Name of recruitment center**

private office of Dr.Nima Naddaf pour

Full name of responsible person

Nima Naddaf pour

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Unit. 24, No.38, Juy pa alley, Sarv cross, Paknejad blvd, Saadat Aabad Town

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Islamic Azad University

Full name of responsible person

Ardavan Etemadi

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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

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**

Islamic Azad University

Full name of responsible person

Nima Nadafpour

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 more information with respect to the subject

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