Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Comparison of the effect of four suture materials on the accumulation of Enterococcus and E.coli 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 Enterococcus and E.coli microorganisms in patients undergoing Implant Surgery

Design
randomized clinical trial; no cotrol group; single blind

Settings and conduct
surgical area (including the space required to place two adjacent implants) is randomly divided into four sites, and each suture materials including vicryl, vicrtyl 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 patient's surgery, the sutures will be separated and placed in a brain heart infusion (BHI) transfer suspension, which all aerobic and anaerobic microorganisms can grow, and transmitted to the microbiological laboratory within twelve hours.Then microorganisms will be cultivate to the specific culture medium of each bacteria from the fluid transfer medium by a sterilized loop. 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 colony forming units (CFU) will be counted. The mean and standard deviation of the CFU of each suture for each microorganism will be calculated by the kruskal-wallis test, and also between the two sutures will be compared with the Mn-Yo-Whitney test.

Participants/Inclusion and exclusion criteria
Enterococcus and E.coli microorganisms on sutures of 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
Use of various suture materials in the surgical sites in all patients

Main outcome variables
accumulation of bacteria on surgical sutures

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20180617040117N1**
Registration date: **2018-10-31, 1397/08/09**
Registration timing: **prospective**

Last update: **2018-10-31, 1397/08/09**
Update count: **0**

Registration date
2018-10-31, 1397/08/09

Registrant information

Name
Ardavan Etemadi

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 21 2256 4571

Email address
a-etemadi@farabi.tums.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 Enterococcus and E.coli 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 surgury in at least two adjacent implant sites

Exclusion criteria:

The patient should not have any periodontal diseases The patient should not have any systemic diseases The patient should not take any other medicines

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

- 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)

N/A

Randomization description

Blinding (investigator's opinion)

Single blinded

Blinding description

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

Placebo

Not used

Assignment

Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of central organization of Islamic Azad university

Street address

No. 4 Neyestan 10 , Pasdaran Ave

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Province

Tehran

Postal code

19585175

Approval date

2018-10-13, 1397/07/21

Ethics committee reference number

IR.IAU.DENTAL.REC.1397/31

Health conditions studied

1

Description of health condition studied

surgical site infection

ICD-10 code

ICD-10 code description

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

Intervention group: The same intervention is applied to all patients, and the intervention involves the use of four different types of suture material

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center
private office of Dr.ardavan Etemadi
Full name of responsible person
Ardavan Etemadi
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
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Full name of responsible person
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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
1

Public or private sector
Private

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
Ardavan Etemadi
Position
Assistant professor
Latest degree
Specialist
Other areas of specialty/work
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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