Clinical Trial Protocol
Iranian Registry of Clinical Trials

18 Sep 2026

Effect of Insulin Injection Site and Time Interval Administration for the Postprandial Glucose Control in Patient with Diabetes Type 2

Protocol summary

Summary

The study was an experimental with Randomized Complete Block Design (RCBD). The population were patients with diabetes mellitus type 2 in dr. Moewardi Hospital Solo, Central Java consisted of 60 respondents taken from simple random sampling and the respondents were divided into 4 blocks. Injection used was Rapid-acting insulin with the dosage prescribed by the doctor. Injection was done in four (4) locations; abdomen, deltoid, thigh and gluteus. The administration were 0 minutes (along with meals), 10 minutes before meal, 20 minutes before meal and 30 minutes before meal. Postprandial glucose levels were measured using a Glucometer. Data were then analyzed by SPSS 18 with Two-Way ANOVA and Tukey HSD.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017062134690N1**
Registration date: **2017-07-12, 1396/04/21**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2017-07-12, 1396/04/21

Registrant information

Name

Agus Santosa

Name of organization / entity

Universitas Muhammadiyah Purwokerto

Country

Indonesia

Phone

006285328111986

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agussantosa@ump.ac.id

Recruitment status

Recruitment complete

Funding source

Self

Expected recruitment start date

2015-05-01, 1394/02/11

Expected recruitment end date

2016-01-01, 1394/10/11

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effect of Insulin Injection Site and Time Interval Administration for the Postprandial Glucose Control in Patient with Diabetes Type 2

Public title

This study aimed to determine the effects of insulin injection site and interval timing to the control of postprandial glucose in diabetes mellitus patients type 2

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Patient diabetes melitus type2; Age min 40 years old; used insulin therapy, Exclusion criteria: Patient diabetes melitus type2 with complication diabetic (neuropati diabetic, retinopati diabetic, nefropati diabetic); Hiperosmolalitas ketoasidosi; Used Oral Antihyperglycemic Drugs

Age

From **40 years** old to **80 years** old

Gender

Both

Phase
3
Groups that have been masked
No information
Sample size
Target sample size: **60**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Single blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features
Randomized Complete Block Design (RCBD)

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committe Universitas Muhammadiyah Yogyakarta
Street address
Jl. Lingkar Selatan, Kasihan, Tamantirto, Bantul, Tamantirto, Kasihan, Yogya, Daerah Istimewa Yogyakarta, Indonesia
City
Bantul
Postal code
55183
Approval date
2015-05-15, 1394/02/25
Ethics committee reference number
441/EP-FKIK UMY/2015

Health conditions studied

1

Description of health condition studied
Patient with diabetes type 2
ICD-10 code
E10-E14
ICD-10 code description
Non-insulin-dependent diabetes mellitus

Primary outcomes

1

Description
postprandial glucose
Timepoint
2 hour postprandial
Method of measurement
Glucometer

Secondary outcomes

1

Description
Time Interval Administration
Timepoint
0-30 minutes
Method of measurement
timer

Intervention groups

1

Description
Intervention I/Block I: Insulin injections in the abdomen, deltoid, thigh and gluteus at the time of administration were 0 minutes (along with meals). Types of insulin administered was Rapid-acting insulin at a dose prescribed by the doctor
Category
Treatment - Other

2

Description
Intervention II/Block II: Insulin injections in the abdomen, deltoid, thigh and gluteus at the time of administration were 10 minutes before meal. Types of insulin administered was Rapid-acting insulin at a dose prescribed by the doctor
Category
Treatment - Other

3

Description
Intervention III/Block III: Insulin injections in the abdomen, deltoid, thigh and gluteus at the time of administration were 20 minutes before meal. Types of insulin administered was Rapid-acting insulin at a dose prescribed by the doctor
Category
Treatment - Other

4

Description
Intervention IV/Block IV: Insulin injections in the abdomen, deltoid, thigh and gluteus at the time of administration were 30 minutes before meal. Types of insulin administered was Rapid-acting insulin at a dose prescribed by the doctor
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Universitas Muhammadiyah Purwokerto
Full name of responsible person
Agus Santosa
Street address
Jl. Raya Dukuhwaluh, Dukuhwaluh, Kembaran, Kabupaten Banyumas, Jawa Tengah 53182, Indonesia
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Banyumas

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Agus Santosa
Full name of responsible person
Agus
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Desa Linggasari RT6/RW6 Kecamatan Kembaran, Kabupaten Banyumas, Provinsi Jawa Tengah
City
Banyumas
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Agus Santosa
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
Name of organization / entity
Universitas Muhammadiyah Purwokerto
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Ikhsan Mujahid
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Other areas of specialty/work
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Person responsible for scientific inquiries

Contact
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Suwarno
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Jl. Raya Dukuhwaluh, Dukuhwaluh, Kembaran, Kabupaten Banyumas, Jawa Tengah 53182, Indonesia
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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