

Clinical Trial Protocol

Iranian Registry of Clinical Trials

28 Jun 2026

The effect of intravenous administration of Dexmedetomidine on the duration of ultrasound-guided supraclavicular brachial plexus block in comparison with Propofol, in patients undergoing upper extremity surgery in Shariati hospital

Protocol summary

Summary

Considering the advantages of using Brachial plexus nerve block to perform upper limb surgery and considering the importance of the type of drug used for intraoperative placement during blocking and increasing the duration of post-block analgesia, this study aimed to compare the effect of venous sedation with Dexmedetomidine and Propofol on the duration of Brachial plexus nerve block (supraclavicular technique) under ultrasound guidance in patients undergoing surgical procedure for upper extremity of Shariati Hospital. In this randomized, double blind clinical trial, 88 patients aged 20-50 years undergoing elective orthopedic surgery with ASA III, II, I, BMI below 35 and without a history of drug allergy, after receiving written consent, were divided into two groups of 44, and The start time of the sensory block, motion, and duration of the sensory block are compared to them. A group of supraclavicular injection of 25 ml of bupivacaine solution 0.5% and intravenous infusion of 0.5 mcg / kg / min of dexmedetomidine, and the other group administered supraclavicular injection of 25 ml of bupivacaine 0.5% and intravenous infusion 50mcg / kg / min of propofol. The patient and anesthetist are not informed of the dual bundle form. Then, the sensory and motor blocks are controlled at intervals of 5-10-15-30 minutes after injection and then every 10 minutes after surgery. The level of the sensory block of the nerve is measured by the pinprick test and the patient's question with the analogue speech scale (from 100% normal to 0% completely numb) and the motor block rate is graded from 0 to 5 by the Lovett-rating-scale. The time of onset of the effect of the block of sensory and motor activity as the time between the completion of the last injection and the completion of the sensory and motor paralysis, the duration of the effect of the sensory block in the time

between the completion of the sensory paralysis and the first postoperative pain, the duration of the motor block as the time between the completion of motion palsy and Movement power return is defined as normal. A quantitative study of opioid use is performed by the PCA in a recovery room that contains 30mg of morphine sulfate in 30ml of normal saline. Every time the patient has pain, he injects 1mg of morphine and locks for 15 minutes.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017051734005N1**
Registration date: **2017-07-17, 1396/04/26**
Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2017-07-17, 1396/04/26

Registrant information

Name

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Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Science

Expected recruitment start date

2017-06-22, 1396/04/01

Expected recruitment end date

2018-03-06, 1396/12/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of intravenous administration of Dexmedetomidine on the duration of ultrasound-guided supraclavicular brachial plexus block in comparison with Propofol, in patients undergoing upper extremity surgery in Shariati hospital

Public title

The effect of intravenous administration of Dexmedetomidine on the duration of ultrasound-guided supraclavicular brachial plexus block in comparison with Propofol, in patients undergoing upper extremity surgery in Shariati hospital

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: age between 20-50 years old; ASA class III, II, I; BMI less than 35; no history of drug allergy; satisfaction of the patient and filling out the consent form. Exclusion criteria: failure to perform supraclavicular block; duration of surgery for more than 180 minutes; cancellation of operation; occurrence of surgical complication during surgery; the need for general anesthesia.

Age

From **20 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **88**

Randomization (investigator's opinion)

Randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committee of the Medical Faculty of Tehran University of Medical Sciences

Street address

Professional Doctoral Theses Unite, Ground Floor, Education Building, Faculty of Tehran University of Medical Sciences

City

Tehran

Postal code

Approval date

2017-05-01, 1396/02/11

Ethics committee reference number

IR.TUMS.MEDICINE.REC.1396.2175

Health conditions studied

1

Description of health condition studied

Local anaesthetics

ICD-10 code

T41.3, Y48

ICD-10 code description

Local anaesthetics

Primary outcomes

1

Description

sensory block onset

Timepoint

sensory block will be checked continuously after completion of injection until complete sensory and motor block.

Method of measurement

pinprick test and a verbal rating scale from 100% (normal sensation) to 0 (no sensation).

2

Description

sensory block duration

Timepoint

after complete sensory block and every 15 minutes following the end of operation.

Method of measurement

pinprick test and a verbal rating scale from 100% (normal sensation) to 0 (no sensation).

3

Description

motor block onset

Timepoint

motor block will be checked continuously after completion of injection until complete motor block.

Method of measurement

Lovett rating scale

4

Description

motor block duration

Timepoint

after complete motor block and every 15 minutes following the end of operation

Method of measurement

the Lovett rating scale

Secondary outcomes

1

Description

Systolic blood pressure

Timepoint

continuously monitoring while the surgery is performing

Method of measurement

manometer

2

Description

Diastolic blood pressure

Timepoint

continuously monitoring while the surgery is performing

Method of measurement

manometer

3

Description

Heart rate

Timepoint

continuously monitoring while the surgery is performing

Method of measurement

Monitoring

4

Description

Respiratory depression

Timepoint

continuously monitoring while the surgery is performing

Method of measurement

O2 saturation & Respiratory Rate

5

Description

Drug consumption in the 24 hours after surgery

Timepoint

patient need

Method of measurement

Medical records

Intervention groups

1

Description

groupB: supraclavicular injection of 25 ml of bupivacaine 0.5% and of propofol 50 mcg / kg / min intravenously.

Category

Treatment - Drugs

2

Description

groupA: supraclavicular injection of 25 ml of bupivacaine and 0.5 mg / kg / min of dexamethmonide intravenously

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center**Name of recruitment center**

Dr. Shariati Hospital

Full name of responsible person

Dr. Fatemeh Elmi

Street address

Shariati hospital, Jalal-e-Al-e-Ahmad high way, district 6, Tehran, Iran

City

Tehran

Sponsors / Funding sources

1

Sponsor**Name of organization / entity**

Tehran University Of Medical Sciences Vice Chancellor Of Research

Full name of responsible person

Dr Shahin Akhond Zade Basti

Street address

Room 206, First Floor, Building 1, Medicine Faculty, Tehran university of medical science

City

Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Tehran University Of Medical Sciences Vice Chancellor Of Research

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**

Shariati Hospital, Anesthesiology Department

Full name of responsible person

Dr. Fatemeh Elmi

Position

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empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty