

Subcutaneous oxytocin administration before a surgical incision to reduce pain

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Registration date 19/11/2018	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 26/11/2018	Condition category Surgery	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

During surgery different procedures are taken to block the pain sensation and reduce the body's autonomic response to tissue damage. The blockade of the nerve activation is currently a well-known procedure that inhibits the activation of nerves presented in the area where the surgical incision is done. Subcutaneous (under the skin) lidocaine administration is the current way of producing this effect. Nevertheless, the search for other drugs is convenient as they can have better outcomes.

Oxytocin has demonstrated important pain-relieving effects in different basic and clinical research studies. It was recently shown that there are oxytocin receptors in the skin of rats, and that peripheral oxytocin administration could activate these receptors, therefore decreasing the pain transmission.

In this study, we evaluated the effect of subcutaneous preventive injection of oxytocin in the surgical field before the incision. We recorded the autonomic pain response to tissue damage and assessed in the postsurgical period the intensity of pain. We compared the effects of oxytocin with the effects of lidocaine.

Who can participate?

Adults scheduled for laparoscopic cholecystectomy (keyhole gallbladder removal) under general anesthesia

What does the study involve?

All patients will undergo general anesthesia. They will be randomly allocated into 3 groups - the oxytocin group, the lidocaine group and the control group. The oxytocin group will be given oxytocin before the surgical incision, the lidocaine group will be given lidocaine before the surgical incision, and the control group will not receive anything. Prior to and during the surgery, heart rate and blood pressure will be measured, and pain will be assessed after the surgery.

What are the possible benefits and risks of participating?

The possible benefit of participating is that participants will receive a medication that has been shown to reduce the pain intensity when it is administered under the skin. Results also suggest

that this drug has anti-inflammatory properties.

The drugs that we will use have little to no side effects, therefore there are no known risks to participants taking part in this study.

Where is the study run from?

Trial study centre: Hospital Regional de Pemex Salamanca (Mexico)

Trial run from: Instituto de Neurobiología (Mexico)

When is the study starting and how long is it expected to run for?

February 2016 to May 2018

Who is funding the study?

Instituto de neurobiología. Universidad Nacional Autónoma de México (Mexico)

Who is the main contact?

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Contact information

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Additional identifiers

Protocol serial number

006/02-2016. 52H

Study information

Scientific Title

Effect of local infiltration with oxytocin on hemodynamic response to surgical incision and postoperative pain in patients having laparoscopic surgery under general anesthesia. A randomized, double blind, clinical trial.

Acronym

SORHRSIPP

Study objectives

Preclinical studies have described that oxytocin (OT) could exert local subcutaneous antinociceptive actions. The study hypothesis of the current work is that subcutaneous pre-incisional OT infiltration at the ports of patients subjected to laparoscopic cholecystectomies will produce an antinociceptive and analgesic action with a similar efficacy as lidocaine, evaluated through the hemodynamic autonomic nociceptive response to surgical incision and the level of postsurgical pain assessed by the visual analogue scale.

Ethics approval required

Old ethics approval format

Ethics approval(s)

1. Comité de Bioética del Hospital PEMEX Salamanca (PEMEX Salamanca Hospital Bioethics Committee), 01/02/2016, reference number 006/02-2016
2. Comité de Bioética del Instituto de Neurobiología (Neurobiology Institute Bioethics Committee), 02/05/2016, reference number 52H

Study design

Interventional single-center double-blinded proof of principle randomised placebo-controlled trial

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Laparoscopic surgery, hemodynamic nociceptive automatic response and post-surgical pain

Interventions

All patients receive standardised anesthetic induction and maintenance. The patients are randomly assigned to one of three groups using block randomization:

1. The oxytocin group
2. The lidocaine group

3. The control group.

The oxytocin group receive subcutaneous oxytocin (oxitopisa® 5 UI 4 µg in 4 ml, diluted in saline) before the incision in the surgical site for the placement of three or four trocars.

The lidocaine group receive subcutaneous lidocaine 1% (pisacaina 1% R 4 ml) infiltration.

The control group do not receive any treatment at the surgical site.

The experimental drugs are given once. The patients and anesthesiologists are blinded to the composition of the injected solution. In all groups, the following parameters are recorded with a GE Health Care model Datex Ohmeda S5 monitor during the operation:

1. Heart rate
2. Non-invasive blood pressure (systolic, diastolic and mean)
3. Pulse oximetry
4. End-tidal CO₂

These parameters are recorded during the entire procedure but are documented specifically at the following points:

1. Basal
2. Anesthetic induction
3. Post-intubation (correspondent to drug infiltration)
4. Surgical incision
5. Transoperative (insufflation of pneumo-peritoneum)
6. Anesthetic emergence

Any requirement for intraoperative salvage administration of fentanyl as a response to increased blood pressure (>20%) is also documented.

Post-operative pain at rest is recorded using the visual analogue scale after the patient's admission to and discharge from the post-anesthetic care unit (PACU) and during hospitalisation 24 hours after surgery.

The occurrence of adverse events is also assessed throughout.

There are no follow-up consultations.

Intervention Type

Drug

Phase

Phase I/II

Drug/device/biological/vaccine name(s)

Study drug: Oxytocin (Oxitopisa® 5 UI 4 µg in 4 ml, diluted in saline) Active control: Lidocaine (Pisacaina 1% R 4 ml). All patients were subjected to general anesthesia with midazolam 50 micrograms/kg, fentanyl 4 micrograms/kg, propofol 2 mg/kg and rocuronium 0.6 mg/kg (anesthetic induction). Oxygen IF 1 and sevoflurane 2.5% (transoperative anesthetic maintenance).

Primary outcome(s)

1. Nociceptive hemodynamic response to surgical incision recorded as the change in the heart rate, diastolic and systolic blood pressure, measured using a GCE Healthcare model Datex Ohmeda S5 monitor during the surgical procedure
2. Post-surgical pain level, assessed using a visual analogue scale (VAS) at the post-anesthetic care unit arrival, post-anesthetic care unit discharge and during hospitalisation

Key secondary outcome(s)

Incidence of adverse effects and side effects, monitored throughout the study and additionally assessed by a post-operative evaluation by the surgeon 7-10 days after surgery

Completion date

01/05/2018

Eligibility**Key inclusion criteria**

1. Aged 18-75
2. ASA (American Society of Anesthesiologists) Hazard Scale I or ASA II
3. Undergoing scheduled laparoscopic surgery

Participant type(s)

Mixed

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Upper age limit

75 years

Sex

All

Key exclusion criteria

1. ASA III or more
2. Emergency surgery
3. Hemodynamic instability
4. Surgical complications (bleeding, intestinal injury)
5. Taking inotropic drugs

Date of first enrolment

01/02/2016

Date of final enrolment

01/08/2017

Locations**Countries of recruitment**

Mexico

Study participating centre

HOSPITAL REGIONAL PEMEX SALAMANCA.

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Salamanca, Gto.
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Study participating centre**Instituto de Neurobiología. UNAM**

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Sponsor information

Organisation

Instituto de Neurobiología. UNAM. lab. B16. Dr. Miguel Condés-Lara

ROR

<https://ror.org/01tmp8f25>

Funder(s)

Funder type

University/education

Funder Name

Instituto de neurobiología. Universidad Nacional Autónoma de México

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be available upon request from Hector Zayas (hzayas100@comunidad.unam.mx). The raw data spreadsheet, including fields used for analysis will be available, and patient confidentiality will be ensured.

IPD sharing plan summary

Available on request