# Cost-effectiveness randomized study of laparoscopic versus open bilateral inguinal hernia repair

Submission date	Recruitment status	[_] Prospect
20/02/2018	No longer recruiting	[_] Protocol
Registration date	Overall study status	[] Statistica
25/03/2018	Completed	[] Results
Last Edited 23/03/2018	<b>Condition category</b> Surgery	[_] Individua
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- Prospectively registered
- Statistical analysis plan
- ] Individual participant data
- ] Record updated in last year

#### Plain English summary of protocol

Background and study aims

An inguinal hernia is when part of the abdominal cavity protrudes through the inguinal canal. Inguinal hernia repair is one of the most widely performerd surgical procedure. Amongst the techniques used, the open Lichtenstein repair (OLR) is still the most widely performed. However, in the last decade there has been an increased interest in the laparoscopic approaches (keyhole surgery) for inguinal hernia repair, mainly represented as the trans-abdominal pre-peritoneal (TAPP) technique. This technique places a mesh to reinforce the abdominal wall. As described in recent studies, TAPP approach can be beneficial as it is less invasive and can be less painful /easier recovery. It is expected that these benefits would be more apparent in the treatment of bilateral inguinal hernias given the fact that both hernias are repaired through a single unified access. However, there are not enough studies in literature to support the potential benefits of the TAPP approach in bilateral inguinal hernias and none address its impact on the quality of life compared with OLR. The aim of this study is to evaluate if laparoscopic hernia repair is cost effective compared with open technique.

Who can participate?

Adults aged 18 and older who have an hernia and are requiring surgery.

#### What does the study involve?

Participants are allocated to one of two groups. Those in the first group undergo their surgery using the open technique. Those in the second group receive the laparoscopic TAPP technique. Participants are assessed after surgery to see how successful the surgery was, their quality of life and if their hernias have occurred.

What are the possible benefits and risks of participating? Participants may benefit from having the TAPP technique used as this can be a less painful surgery and have a shorter recovery time in hospital. There are no direct risks.

Where is the study run from? Sanchinarro University Hospital (Spain) When is the study starting and how long is it expected to run for? December 2012 to January 2017

Who is funding the study? Investigator initiated and funded (Spain)

Who is the main contact? Dr Benedetto Ielpo (Scientific)

## **Contact information**

**Type(s)** Scientific

**Contact name** Dr Benedetto Ielpo

**Contact details** Sanchinarro University Hospital Calle Oña 10 Madrid Spain 28050

## Additional identifiers

EudraCT/CTIS number

**IRAS number** 

ClinicalTrials.gov number

Secondary identifying numbers 10203040

## Study information

#### Scientific Title

Clinical and cost differences between laparoscopic TAPP versus traditional open Lichteinstein repair for bilateral inguinal hernia

#### Study objectives

The aim of this study is to evaluate if laparoscopic hernia repair is cost effective compared with open technique.

**Ethics approval required** Old ethics approval format

Ethics approval(s)

HM Sanchinarro University Hospital, 01/12/2013

#### Study design

This is a clinical and cost-effectiveness analysis of a randomized clinical study comparing laparoscopic trans-abdominal pre-peritoneal (TAPP) technique with open Lichtenstein technique (OL) in bilateral inguinal hernia repair.

#### Primary study design

Interventional

**Secondary study design** Randomised controlled trial

Study setting(s) Hospital

**Study type(s)** Quality of life

#### Participant information sheet

Not available in web format, please use the contact details below to request a patient information sheet

#### Health condition(s) or problem(s) studied

Bilateral inguinal hernia repair

#### Interventions

This study was carried out in a private hospital in Madrid (Spain) at the General Surgery Department of Sanchinarro University Hospital recruiting patients from March 2013. Patients (aged over 18 years), with primary, bilateral inguinal hernias assessed by ultrasound are included. The patient demographic data recorded are: age, gender, Body Mass Index (BMI), American Society of Anaesthesiology (ASA score), comorbidities and size of hernia according to the European Hernia Society (EHS) classification (Grade I: 1.5 cm, Grade II: 1.5–3 cm, Grade III: >3 cm) (8).

Participants are randomised using a simple randomization with a computer program and divided into two groups according to the surgical approach elected by the computer program: laparoscopic trans-abdominal pre-peritoneal (TAPP) technique with open Lichtenstein technique (OL).

Open Technique (OL):

OL is performed by all surgeons according to the standard Lichtenstein open tension-free technique as described recently by Amid where ilioinguinal and iliohypogastric nerves are usually preserved. No local anesthetic is infiltrated.

#### Laparoscopic TAPP technique:

This procedure is performed under general anaesthesia. Pneumoperitoneum is established with a Veress needle in the left subcostal space. The peritoneum is incised and the hernia sac is than isolated and reduced freeing the spermatic cord. Finally, two polypropylene meshes (Prim) of

almost 15x10 cm are rolled and introduced in the abdominal cavity bilaterally in both preperitoneal spaces. A unique metal staple is used to secure the mesh to each Cooper ligament (CapSureTM, Bard). The peritoneal flap is than closed using 3 or 4 metal staples for each side.

Participants undergo their surgery according to the protocols in each of their groups. Participants are followed up after surgery to assess their clinical outcomes, quality of life and recurrences of hernia.

#### Intervention Type

Procedure/Surgery

#### Primary outcome measure

1. Clinical outcomes are measured as:

1.1. Time of surgery has been defined since the induction of general anaesthesia and recorded up to the close of the skin

1.2. Length of post-operative stay as well as postoperative complications have been prospectively recorded

1.3. Seroma is defined when it is symptomatic (pain, discomfort, etc..) and that tends to persist for long periods from surgery (> 1 month) and which often requires an interventional therapeutic approach (needle aspiration)

1.4. Postoperative pain was determinated at first and 7th day after surgery and at 2, 6 and 12 months, using the standardized 0-10 visual analgesic scale (VAS). After the discharge, it is gathered in outpatient clinic

1.5. Chronic pain was recorded and defined if it is lasting no less then 3 months after the hernia repair and which requires some analgesic drug

1.6. Number of outpatient surgical visits were also recorded as well as re admission or emergency visit without admission

2. Quality of life was assessed with the medical outcomes study SF-36 questionnaire (Spanish form) preoperatively and at 2, 6 and 12 months after surgery

3. Cost effectiveness is measured using incremental cost-effectiveness ratios (ICERs) at 1 years from surgery. The Institute of Validation of Efficacy Clinic (IVEC) of the HM Hospitals group is responsible for capturing costs ascribed to each patient's treatment. The total direct hospital costs of care were recorded under the patient's unique medical record number.

#### Secondary outcome measures

Recurrences are measured using outpatient visits after six months

# Overall study start date 10/12/2012

### Completion date

10/01/2017

## Eligibility

#### Key inclusion criteria

1. Aged over 18 years

2. Primary, bilateral inguinal hernias assessed by ultrasound

**Participant type(s)** Patient **Age group** Adult

**Lower age limit** 18 Years

**Sex** Both

**Target number of participants** 150

**Key exclusion criteria** Recurrent hernia

Date of first enrolment 01/01/2013

Date of final enrolment 01/03/2017

## Locations

**Countries of recruitment** Spain

**Study participating centre Sanchinarro University Hospital** Madrid Spain 28050

## Sponsor information

**Organisation** Sanchinarro University Hospital

**Sponsor details** Calle Oña 10 Madrid Spain 28050

Sponsor type

Hospital/treatment centre

ROR https://ror.org/04jep6391

## Funder(s)

**Funder type** Other

**Funder Name** Investigator initiated and funded

## **Results and Publications**

#### Publication and dissemination plan

Planned publication in a high-impact peer reviewed journal. Additional documentation can be found at (http://www.ugr.es/~abfr/sf36/).

Intention to publish date 10/06/2018

#### Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Emilio Vicente (Head of the General Surgical Department) at emilvic@bitmailer.net.

#### IPD sharing plan summary

Available on request