

Kidney stone laser treatment via miniaturised telescopes through the back versus telescopes via the urinary tract in an Indian population

Submission date 12/04/2020	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered
Registration date 12/05/2020	Overall study status Completed	<input type="checkbox"/> Protocol
Last Edited 03/02/2022	Condition category Urological and Genital Diseases	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Waste products in the blood can occasionally form crystals that collect inside the kidneys. Over time, the crystals may build up to form a hard stone-like lump. Kidney stones are usually found in the kidneys or in the ureter, the tube that connects the kidneys to your bladder. They can be extremely painful, and can lead to kidney infections or the kidney not working properly if left untreated.

The aim of this study is to compare kidney stone laser treatment via miniaturised telescopes through the back versus telescopes via the urinary tract in an Indian population.

Who can participate?

Patients aged 16 years and above with 10 – 30 mm kidney stone(s).

What does the study involve?

Participants will be randomly allocated to receive ultra-mini percutaneous nephrolithotomy (UMP) or Retrograde Internal Surgery (RIRS) for the removal of kidney stones. Participants will be followed-up at one month.

What are the possible benefits and risks of participating?

The benefits of the mini key hole operation was to avoid the need for a second procedure to remove the stent which is needed for the surgical treatment of the kidney stones via the telescope into the urinary tract from below. The other advantages were the ability to remove the maximum stone burden with a single procedure and which is not uncommon with the operation through the urinary tract from below. This operation is less invasive than the standard operation which involves a bigger size of the telescope. The risks were more or less similar in either of the procedure are blood in the urine and urine infection and which extremely rarely can be serious. The risks of the residual stone following the procedures is another factor to consider in either of them.

Where is the study run from?

Samved Hospital (India)

When is the study starting and how long is it expected to run for?
December 2013 to December 2015

Who is funding the study?
Samved Hospital (India)

Who is the main contact?
Ramandeep Chalokia, rchalokia@yahoo.com
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Additional identifiers

Protocol serial number

UMP001

Study information

Scientific Title

Ultra mini-percutaneous nephrolithotomy versus retrograde intrarenal surgery in the treatment of 10-30 mm calculi: A randomised controlled trial

Study objectives

The aims are to investigate the efficacy, cost and safety of ultra mini-percutaneous nephrolithotomy (UMP) versus retrograde intrarenal surgery (RIRS) in renal calculi between 10 - 30mm

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 01/07/2014, Ethics Committee Samved Hospital (2nd Floor Samved Hospital, Near Stadium Circle, Ahmedabad, Gujarat, India, 380009; +91 (0)7926431616; drrushimishra@gmail.com), ref: n/a

Study design

Interventional randomized controlled trial

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Renal calculi

Interventions

The patients will be randomised using block randomisation software into either the UMP or RIRS group with a ratio of 2:1. Block randomisation design will be used to reduce bias and achieve balance. Block sizes of 6 will be used. The patients will be informed of the procedure after randomisation.

The duration of surgery will be measured (from the visualisation of the stone) and any equipment used during the procedure will be noted to calculate the total cost of the intervention. The requirement and duration of a nephrostomy, DJ stent, and indwelling urinary catheter will be recorded. At the end of each procedure, it will be essential to record the number of patients that will be stone free or had any residual fragments present. Patients will be identified as being stone-free if no identifiable stones can be verified on direct visualization /fluoroscopic. Residual fragments will be defined as those >4 mm.

Deterioration in renal function and bleeding will be assessed by comparing pre-operative haemoglobin (Hb) and creatinine levels with those on the first postoperative day. The need and duration of post-operative opioid Intramuscular/Intravenous analgesia will be recorded, and patients with prolonged pain will be identified. Prolonged pain will be defined as greater than two days in duration requiring anti-spasmodic medication. Post-operative complications will be recognised and classified as per the Clavien-Dindo grading system. The length of hospital stay for each patient and the number of patients that will be required to return (e.g. stent removal) will be recorded. Following discharge, patients will be invited back in one month for a follow-up low dose NCCT scan to identify the presence of residual fragments. Residual fragments will be defined as any calcification ≥ 4 mm present on the NCCT in the kidneys, ureters or bladder.

Intervention Type

Procedure/Surgery

Primary outcome(s)

Presence of residual fragments at one month after surgery measured using fluoroscopy

Key secondary outcome(s)

1. Duration of surgery (minutes) measured using a clock
2. Stone size before surgery measured using fluoroscopy
3. Stent requirement during surgery (yes or no) and duration of stent dwelling measured at one month follow up appointment
4. Nephrostomy requirement and duration
5. Cost of procedure measured using duration and equipment used at the time of surgery
6. Blood Hb and creatinine measured using blood test at baseline and one day post-operatively
7. Duration of hospital stay (hours)
8. Complications and adverse events measured using the Clavien-Dindo Classification of Surgical Complications
9. Presence of haematuria measured by urine analysis during hospital stay

Completion date

31/12/2015

Eligibility

Key inclusion criteria

1. Age > 16 years
2. 10 - 30mm renal calculi of any position with no history of bleeding diathesis

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Mixed

Sex

All

Total final enrolment

144

Key exclusion criteria

1. Abnormal renal or musculoskeletal anatomy
2. Receiving anticoagulants
3. High anaesthetic risk

Date of first enrolment

01/07/2014

Date of final enrolment

30/06/2015

Locations

Countries of recruitment

India

Study participating centre

Samved Hospital

Near Stadium Circle

Navrangpura

Ahmedabad

India

380009

Sponsor information

Organisation

Samved Hospital

ROR

<https://ror.org/04esbsa15>

Funder(s)

Funder type

Hospital/treatment centre

Funder Name

Samved Hospital

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are available upon request from Dr Janak Desai drjanakddesai@gmail.com

The data will be available after peer review publication for meta-analysis. Data will be anonymized. There was no specific patient consent for disclosure of data for metanalysis.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		02/02/2022	03/02/2022	Yes	No