Gloucestershire Hospitals
NHS Foundation Trust

Lithotripsy treatment for kidney stones

Introduction

This leaflet gives you information about having lithotripsy treatment for kidney stones.

What is lithotripsy?

Lithotripsy is a non-surgical method used to treat kidney and ureteric stones (these are stones in the tube that connects the kidney to the urinary bladder). The treatment uses shock waves to weaken and break down the stone to allow the urine to flow.

The mobile lithotripsy machine comes to Cheltenham General Hospital usually every 2 weeks.

Benefits of having lithotripsy treatment

The expected outcome of the treatment is that the kidney or ureteric stone is broken up enough to allow clearance. To clear a stone completely 2 to 3 treatments may be needed.

Lithotripsy treatment is only used to treat a stone that is already present; it cannot prevent new stones from forming.

Lithotripsy is performed as an outpatient procedure without the need for an anaesthetic.

Lithotripsy may not work as well as surgery. However, it has the benefit of helping most patients avoid having a stent or general anaesthetic.

Alternative treatments

Lithotripsy is the least intrusive way of treating kidney and ureteric stones.

Suitability for this treatment will depend on many factors including your general health, the location and the size of your stone. The Urology team will discuss the choices and alternative treatments with you.

Other options for managing kidney stones include:

- Surgery - removing the stone using key hole surgery, under a general anaesthetic (while you are asleep).
- Conservative management - deciding to observe the stone with regular X-rays. If the stone begins to cause symptoms such as pain, infection or bleeding or is increasing in size then we would recommend treatment.

Risks

We do **not** recommend starting lithotripsy treatment for kidney stones in the 8 weeks before you fly abroad. This is because complications can happen after treatment. The risk is higher if your stone is large, if you are female, or if you have had urine infections before.

If you have a ureter stone, treatment is usually more urgent. We recommend that you delay any travel abroad until the ureter has been cleared or a stent has been fitted. This is because travel insurance may not cover treatment abroad, and you could develop pain or become unwell during a flight.

Bleeding - the shockwaves passing through the kidney can cause the kidney to bleed. You will therefore see some blood in your urine after the treatment. This is normal and can last for several days.

You are advised to drink 2 to 3 litres of water a day to help flush the kidney of any blood and grit. Serious bleeding from the kidney following this treatment is very rare.

Infection - kidney stones can put you at risk of developing an infection in your urine. Lithotripsy treatment can also trigger an infection.

Your treatment will usually be cancelled until any infection has been treated.

Go straight to Accident and Emergency (A&E) if, in the first 2 weeks after treatment, you have:

- severe pain that does not improve within 2 hours after taking painkillers
- feel increasingly unwell.

You may need stronger pain relief or checks for an infection. Gloucester A&E is open 24 hours a day. Cheltenham A&E has doctors available during the day, from 8:00am to 7:00pm.

Pain - you may feel bruised and uncomfortable after treatment. This is normal.

You can take pain relief, such as paracetamol, to help with any discomfort. Keep drinking water to help flush out any grit left after the treatment.

More severe pain can happen if a small piece of stone is passing. This happens in about 1 in 20 patients.

You may be given Voltarol suppositories to take home. If the pain has not settled 1 hour after using a Voltarol suppository, or if you feel unwell, please go to A&E within 6 hours.

You may need stronger pain relief, intravenous antibiotics, or further treatment if the kidney is blocked.

Kidney blockage - this can happen if a larger piece of stone breaks off after treatment and blocks the kidney. This is more likely to happen with larger stones and affects about 1 in 40 patients.

If this happens, you may need to come into hospital for stronger pain relief. If you also have an infection, you may need a thin plastic tube, called a stent, put into the ureter while you are under anaesthetic. The ureter is the tube that carries urine from the kidney to the bladder.

The stent helps to:

- unblock the kidney
- ease pain
- drain any trapped infection.

Symptoms of a kidney blockage include:

- severe pain
- a fever
- feeling very unwell.

If you have any of these symptoms and they do not improve, go straight to A&E within 6 hours for assessment.

Before treatment

- You may eat and drink before your treatment, although we recommend a light meal only.
- Please try to make sure that you are not constipated for your treatment, as this can make locating the stone using X-ray or ultra sound more difficult.
- Do not bring any valuables with you.
- Allow 2 hours for your visit (although the actual treatment time is 20 to 30 minutes).
- You should have someone to collect you from the hospital after your treatment, as you may be unable to drive (due to the pain relief given)

Please let us know in advance if you:

- know that you are pregnant.
- have a pacemaker.
- are currently taking warfarin, rivaroxaban, apixaban or any other blood thinning medication, such as aspirin or clopidogrel.
- think you might have an infection in your urine or if you have a raised temperature.
- have a bleeding disorder.

Please confirm your appointment time

It is important that you confirm, by telephone, that you will or will not be attending your lithotripsy appointment. The telephone number is on your appointment letter and we ask that you contact us as soon as possible in order for us to make best use of the appointments we have available.

On arrival at the ward

The nursing staff will follow a quick admission procedure, when you will be asked some questions, have your blood pressure, pulse and temperature taken and asked to sign a consent form. The nurse will discuss your treatment with you and you will be able to ask any questions that you may have.

Your treatment

The treatment is not painful, but some patients find it uncomfortable. To avoid any discomfort, you will be offered some pain relief medication before the treatment begins.

When your treatment is due, you will be taken to the treatment room and introduced to the lithotripsy technicians who will explain the procedure to you and answer any questions you may still have.

The technicians will ask you to lie on a specialised bed for the treatment, usually on your front. It is important that you keep as still as possible so that precise treatment can be given to the stone. When treatment begins, you will hear a clicking noise and feel a sensation similar to an elastic band being flicked on your back or front. During the treatment time, the power is slowly increased. If the treatment becomes too painful, please let the technicians know so they can adjust the level or stop the treatment.

We routinely use ultrasound to monitor the position of your stone during treatment. If your stone moves into the ureter (drainage pipe), then we may need to use X-ray to locate the stone during the treatment. The risks from the

small amount of radiation used are small. The exposure is equivalent to 2 to 10 months of natural background radiation (depending on the number of X-rays and treatments needed).

After the treatment

Your blood pressure, pulse and temperature will be taken and you will be offered a drink.

Going home

You will be able to go home soon after treatment. You are strongly advised not to drive after having this treatment because of the strong pain relief you may have been given. Please arrange for someone to collect you and take you home.

What to do when you get home

For the rest of the day after your lithotripsy, you are advised to take things gently and get plenty of rest.

Unless you have been told otherwise you should be able to return to your normal activities within 24 hours of leaving hospital. Walking is helpful in flushing out any stone fragment from your kidneys.

It is important that you drink 2 to 3 litres of fluid each day for 7 days. Increasing your fluid intake will flush out the kidneys and help any fragments of stone pass through.

How will you know if the treatment has been successful?

If you have a kidney stone, you will usually have a follow-up X-ray, or sometimes a CT KUB scan, 6 weeks after your lithotripsy treatment has finished. Your appointment will be sent to you in the post.

If you have a ureter stone, repeat imaging is usually arranged after 2 to 3 weeks.

A radiologist will report your X-ray or scan. This can take up to 4 weeks. Your consultant urologist will then contact you with the results by letter, appointment, or phone call.

If you have not heard anything 8 weeks after your X-ray or CT scan, please contact the Urology secretaries on 0300 422 6902 and leave a message for your consultant to chase the result.

If your stone is still present, your urologist will discuss the options for further management with you.

Unfortunately, some people are prone to developing kidney stones. Lithotripsy does not prevent the formation and growth of new stones. Further stones may require similar treatment.

Contact information

If you have any further questions about your lithotripsy treatment, please call:

Tel: 0300 422 6902

Press 1 to speak to a secretary
Press 2 to speak to a waiting list coordinator
Monday to Friday, 8:00am to 4:00pm

Urology Nurse Specialist
Tel: 0300 422 5193
Monday to Friday, 8:00am to 5:00pm

Alternatively, you can contact the hospital switchboard.

Gloucestershire Hospitals Switchboard
Tel: 0300 422 2222

When prompted ask for the operator then for your consultant's secretary.
(Please note that the secretaries will only be available Monday to Friday, 8:00am to 4:00pm)

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Shared Decision Making

If you are asked to make a choice, you may have lots of questions that you want to ask. You may also want to talk over your options with your family or friends. It can help to write a list of the questions you want answered and take it to your appointment.

Ask 3 Questions

To begin with, try to make sure you get the answers to three key questions if you asked to make a choice about your healthcare.



1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?

These resources have been adapted with kind permission from the MAGIC Programme, supported by the Health Foundation.

***Ask 3 Questions** is based on Shepherd HL, et al. Three questions that patients can ask to improve the quality of information physicians give about treatment options: A cross-over trial.

Patient Education and Counselling, 2011;84: 379-85

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NHS **https://aqua.nhs.uk/resources/shared-decision-making-case-studies/**

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