Patient Information

Royal Devon University Healthcare
NHS Foundation Trust

Chemo-Hyperthermia Bladder Treatment with Mitomycin C

What is it?

Mitomycin C is a chemotherapy drug used to treat bladder cancer. It is given directly into the bladder via a flexible tube called a catheter, which passes in through the water pipe (Urethra).

Once in the bladder the Mitomycin C is gently warmed and re-circulated treating the entire inner lining of the bladder. This is called chemo-Hyperthermia.

The treatment is given directly into the bladder and not into the bloodstream through a vein, so side effects associated with chemotherapy such as hair loss and nausea is avoided.

Why has your Consultant advised it?

Your Consultant Urologist has referred you for Chemo-Hyperthermia bladder treatment as part of on-going treatment for your recurrent Non Muscle Invasive Bladder Cancer (NMIBC).

NMIBC only affects the top two layers of cells in the inner lining of the bladder. However, recurrent and high risk disease can sometimes regrow and occasionally spread into the deeper tissue (muscle) layers if left untreated. The aim of this treatment is to reduce the risk of further tumour recurrence or spread to deeper tissue layers.

You may previously have undergone bladder treatments with "cold" Mitomycin C or immunotherapy medication – BCG (Bacillus Calmette–Guérin).

Chemo-Hyperthermia with Mitomycin C is thought to increase the effectiveness of the treatment and can also be used when previous bladder treatments have failed.

What are the alternatives to this procedure?

If you do not wish to proceed with Chemo-Hyperthermia bladder treatment alternative options may include

Cystoscopic surveillance – Repeat camera tests, managing tumours if and when they recur with an operation called Trans Urethral Resection of Bladder Tumour (TURBT) or Trans Urethral Laser ablation (TULA).

Surgical removal of the bladder with urinary diversion or bladder reconstruction is also an option if you are assessed as medically fit for this.

How does it work?

Chemo-Hyperthermia is thought to work in two ways. Firstly, research has shown that cancer cells are more susceptible to heat than normal healthy tissue. Heating the bladder lining to temperatures of 40-44 degrees Celsius can kill and damage cancer cells whilst causing little damage to the surrounding healthy tissue; this rise in temperature also stimulates your bodies' own immune system to fight cancer cells within the bladder.

Secondly, Mitomycin C when heated is able to penetrate deeper into the bladder lining. This increases its effect as higher levels of the drug can enter cancer cells.

What does the procedure involve?

Once comfortable on a treatment couch a small tube called a catheter is inserted into your bladder via your water-pipe (urethra). The area is cleaned prior to insertion and local anaesthetic gel used to make it more comfortable. We will test your urine before we start the procedure by using some of the urine that is drained out of your bladder at the time of the catheter insertion.

The recirculating system is attached to the catheter and the chemotherapy drug is slowly instilled directly into the bladder. The re-circulation system gently heats and pumps the solution between the bladder and a reservoir, and monitors and regulates the temperature within the optimum limits of 41-44 degrees Celsius.

You may feel a gentle warming sensation in your lower abdomen at this point as it reaches the target temperature; these feelings are sometimes described as having a hot water bottle on your tummy. You may also feel an urge to urinate, but as the catheter will remain in throughout the treatment you do not need to worry about passing urine.

The treatment lasts for 60 minutes once optimum temperature is reached. During this time your catheter will be attached to the re-circulation system and it is helpful if you can lie still and relaxed on the treatment couch. To help you pass the time you may like to bring a book, magazines or an electronic device.

At the end of the treatment the chemotherapy drug is drained from the bladder and catheter removed.

The treatment is an Outpatient visit which means you can go home once your treatment is complete. Your treatments will be carried out once a week for 6 weeks and takes approximately 1.5 – 2 hours.

What happens before the procedure?

On arrival you will be met by the Bladder Treatment Nurse who will be carrying out your treatment. At this time the procedure will again be fully explained and you will be given the opportunity to ask questions and discuss any concerns you may have.

It is advisable not to drink any fluids for 4-6 hours prior to your treatment. This is very important as it reduces the amount of urine your body produces during your treatment, therefore reducing dilution of the chemotherapy drug within the bladder.

If you take any diuretic medications (water tablets) you may be asked to take these at a different time on the day of your treatment; you can discuss this with your specialist nurse.

What happens after the procedure?

Drink plenty of fluids (2-3 litres per day) for a couple of days following your bladder treatment, ensuring that your urine is pale in colour. This helps reduce the risk of a urinary tract infection (UTI) and dilutes the urine making passing urine more comfortable. Some people also find avoiding caffeinated drinks during this time is helpful.

Traces of the chemotherapy drug can remain in your urine for up to 6 hours following treatment. To avoid skin irritation from splashing when passing urine both men and women are advised to sit on the toilet and to ensure hands and genital area are washed thoroughly with soap and water when finished.

Put one cupful of bleach into the toilet and leave this for 15 minutes before you flush the toilet each time you urinate, for the 6 hours following the treatment.

To reduce the risk of irritation to your partner, you should either refrain from sexual intercourse for 48 hours following treatment or use a condom.

Chemotherapy should not be given to pregnant women. If you or your partner is planning a pregnancy then please discuss this with your nurse specialist or Urology Consultant.

Side effects

Most patients do not experience any major problems with chemo-hyperthermia bladder treatments. However, if side effects do occur they will usually start within 3-4 hours following treatment and can last for up to 3 days.

Common side effects – Between 1 in 2 and 1 in 10 patients

Cystitis like symptoms - burning or stinging when passing urine and increased frequency.

Blood or debris in urine.

Discoloured urine.

Urinary tract infection - If you have cloudy smelly urine, feel unwell, have a fever or symptoms persist for more than 3 days consult your GP.

Uncommon side effects – Between 1 in 10 and 1 in 50 patients

Rash on hands, feet or genital area.

Stricture (narrowing) of the water pipe following repeated catheterisations resulting in reduced flow.

Problems passing urine or inability to pass urine at all.

Rare side effects – Between 1 in 50 and 1 in 250 patients

Severe pain on instillation which persists after your bladder has been emptied.

Body rash - Consult your Nurse specialist for advice or seek medical attention as this may suggest allergic reaction.

Seek medical attention immediately if you develop shortness of breath, difficulty breathing or facial swelling.

Contact your Nurse Specialist or GP/111 straight away if you develop any rare side effects and they will be able to advise.

What follow up care is needed

A flexible cystoscopy will be arranged for 6-8 weeks following completion of your last bladder treatment. If you have any questions or concerns during this time you should contact your Nurse specialist.

Important contacts

Margaret Prettejohn - Urology Clinical Nurse Specialist **01392 402747**

Sister Gillian Godfrey – Ottery St Mary Outpatient and treatment Nurse **01404 816000**

Reference Number: RDE 18 229 002
(Version date: December 2023)