



University Hospital  
Southampton  
NHS Foundation Trust

# Prostate high dose rate brachytherapy

Information for patients



**This booklet is a guide for patients who are due to undergo high dose rate (HDR) brachytherapy to the prostate.**

## **HDR prostate brachytherapy**

Prostate brachytherapy is a form of highly targeted radiotherapy used to treat prostate cancer with the intention of curing it. A computer controlled machine called a microselectron pushes a single radioactive iridium pellet into small tubes placed into the prostate gland. The doctors can give a high dose of radiation direct to the prostate gland, while minimising the dose to surrounding healthy tissue.

We usually give HDR brachytherapy in combination with a three to five week course of external beam radiotherapy to the prostate, which starts approximately three to four weeks after the HDR treatment. The external beam radiotherapy expands the treatment area beyond the prostate to include other regions where there may be microscopic deposits of undetected cancer.

There is mounting medical evidence to suggest that combining brachytherapy and external beam radiotherapy improves the cure rate, compared to external beam radiotherapy alone. Rates of success vary according to the severity of the prostate cancer.

Most patients also have hormone therapy before and after HDR brachytherapy to maximise how well the treatment works.

## **Preparations**

You will be seen in clinic by one of the consultants or specialist doctors who will go through the procedure with you and ask you to sign a consent form. Our brachytherapy radiographer will coordinate your appointments and your clinical nurse specialist is available to support you.

## **Preassessment visit**

Your preassessment appointment will take place at Southampton General Hospital before the implant date. At this appointment we will run some routine medical checks which are required before having an anaesthetic, including blood tests and a heart tracing. Please bring a list of any medications you take.

We'll give you an antibiotic tablet and a bladder tablet (tamsulosin) to start taking before the implant. You will not be allowed to eat from midnight before the procedure.

## **Routine medication**

**If you're taking aspirin, clopidogrel or dipyridamole you should stop taking them one week before your implant**, unless your doctor or nurse tells you otherwise. These drugs can make your prostate gland bleed excessively during your implant and this could affect the success of the implant. If you are on warfarin this will also be stopped five days before the implant and alternative arrangements made.

## The implant procedure

We'll ask you to arrive at the day surgery ward at 7am on the morning of the implant; we will then admit you under the care of the urology team.

We will give you elastic stockings to wear in order to reduce the risk of blood clots, which can be caused by lying still.

You'll be taken from the ward to the theatre. Most patients will have a spinal anaesthetic, which also gives pain relief after the procedure. Occasionally a general anaesthetic may be used. You should not drive for 24 hours after an anaesthetic so you'll need to arrange for someone to collect you from hospital and stay with you until the next day.

An ultrasound probe will be inserted into the rectum and the images of the prostate will be used to guide the procedure. A urinary catheter will be inserted into your bladder while you're under anaesthetic. This helps to give us high quality ultrasound pictures and to rinse any blood clots from your bladder. We will then put 15 to 20 small tubes through the skin into your prostate.

Once the tubes are in place, you will go to the oncology department for a CT planning scan. After the CT scan you'll go back to the ward where there will be a wait of approximately two hours. You will have support pads underneath your legs and bottom. To avoid movement of the tubes, it is important that we keep your pelvis as still as possible until your treatment has been completed. This will allow your HDR treatment to be given as accurately as possible. If you do experience any pain at all please tell the ward staff and they will give you pain relief medication. If you have difficulty lying flat you must let us know. If you cannot lie flat you may not be suitable for this type of treatment.

During the two hour period your oncologist and the radiotherapy physicists will plan your treatment based on your planning CT scan. This ensures the HDR treatment is individually tailored to you. Once your treatment is planned and checked, the data is transferred to the brachytherapy unit.

You will then be taken to the treatment room where the HDR machine will be attached to the tubes. The radiation treatment is delivered through these tubes. This part of your treatment takes up to an hour. The implanted tubes are removed directly after the HDR treatment.

The catheter is removed once the spinal anaesthetic has worn off, unless there is bleeding. When you have passed urine without a catheter you will be able to go home. Most men need to stay in hospital for one night on the urology ward.

You will be given a list of your external beam radiotherapy treatment appointments. You will need another CT planning scan a few days after the HDR procedure, so that we can plan the external treatment.

You are not radioactive after the treatment. Your urine and other body fluids will not be radioactive. There is no radiation exposure to your family or to hospital staff.

## After the implant

For the first few days after the HDR treatment you should not take part in any strenuous activity or heavy lifting, but after this you will probably be able to carry on as normal.

## Medication

**Tamsulosin:** You will need to take one tablet every day starting a week before your implant. It helps you to urinate. You might need to keep taking tamsulosin for two months or more, or until your symptoms settle, so you'll need to arrange to collect a repeat prescription from your GP.

**Antibiotic:** You will start to take this on the night before your implant. We give you these to prevent any risk of infection. You should take the full course as instructed after the implant.

## Side effects of the implant

It is important to remember that these side effects are a general guide and you may not experience all of them. Also the severity of these symptoms can vary.

Immediately after the implant you may experience some of the following:

- **Bruising, pain and swelling** of the area between your scrotum and anus (known as the perineum). This only lasts a few days. Mild painkillers and a warm bath will ease this.
- **Blood in the urine.** You will probably have blood in your urine immediately after the tubes are removed, which usually settles down over the next few hours, but you may still see a slight trace of blood in your urine for a few days after the implant. This is quite normal, so don't be alarmed. Drinking plenty of water, approximately one glass every hour during the day, helps to flush out the bladder.
- **Pain and burning sensation when passing urine, and urinating more frequently.** This usually lasts two to four weeks. Drinking plenty of fluid can help. Cutting down on drinks that may irritate the bladder such as fizzy drinks, alcohol, and drinks containing caffeine (tea, coffee and cola) may help. We advise you to restrict your intake of these until the irritation settles.

If you need pain relief we recommend an anti-inflammatory medicine such as ibuprofen, or alternatively paracetamol. You should check with your doctor or pharmacist to ensure these medicines are suitable for you and do not interact with other medicines you're taking. A covered hot water bottle carefully placed over the bladder area sometimes helps any discomfort.

If you are passing urine frequently during the night, try reducing fluid intake a few hours before going bed, and have sips of water if required during the night.

If you have to wait before urine starts to flow, having a warm bath or placing your penis into a bowl of warm water can help. Many men get

further improvement in their urine flow by increasing their tamsulosin to two per day. It is fine to take two tamsulosin tablets per day for a few weeks if necessary (one in the morning and one in the evening). You will only be given one month's supply, but you may need tamsulosin for two months or more until symptoms settle. You can get a repeat prescription from your GP.

- **Inability to pass urine (urinary retention).** If you're feeling strong discomfort in the lower abdomen and only passing a few dribbles or no urine at all, you may be experiencing urinary retention. You should attend your local emergency department. You may require a catheter to be fitted. This is a plastic tube inserted through the penis into the bladder to drain away the urine.

If a catheter is necessary it usually needs to stay in until the end of your external beam radiotherapy. It may need to stay in for two to three months or longer, to allow things to settle, but this is rare. Occasionally patients need surgery to the prostate to allow them to pass urine normally.

Urine retention usually begins in the first few weeks after an implant. If you have a catheter inserted, please inform your specialist nurse, radiographer or consultant's secretary, so the appropriate ongoing support can be arranged for you.

- **Blood in semen.** If you're experiencing stinging and burning sensations while passing urine in the first one to two weeks you should not have sex. Your semen may be discoloured as a result of bleeding that may have occurred during the implant. Sometimes ejaculation may also be painful but tends to settle in time. As a result of this treatment the ejaculate may be of small volume or dry.
- **Bleeding from the rectum and mucus.** This is not usually a problem and is more common during the course of external beam radiotherapy. Sometimes inflammation of the rectum causes constipation, loose bowel motions or diarrhoea for a few weeks.

Very rare side effects include bladder or bowel damage, injury to the muscle

that opens and closes the anus, or an abnormal track (fistula) between the bowel and urethra.

- **Tiredness.** You may feel tired for the first few days after treatment as you recover from the anaesthetic.

### Longer term side effects of HDR brachytherapy

Some side effects can occur months or years after radiotherapy has finished.

- **Narrowing (stricture) of the urethra** (tube that carries urine) which may slow your urinary stream. This may require a small operation under anaesthetic to widen the narrowing. About one in twenty men are affected.
- **Impotence** (inability to achieve satisfactory erections) occurs in approximately 30% to 75% of men and may be permanent. Impotence occurs more often in older men and men already having some difficulty. Treatment such as Viagra or Cialis is available for men who develop impotence, but treatment is not always successful. Your GP can prescribe some treatment free of charge on the NHS.

Most men will notice a reduction in the volume of their ejaculate following treatment, because the prostate produces fluid that is part of semen. Eventually the ejaculate may dry up altogether.

- **Incontinence** (leakage of urine) can occur in one in ten men in the first few weeks, but after three years only one in twenty men are incontinent.
- If you are to undergo investigation of your bowel in the future please contact us, or ask your consultant to contact us. A small area of the rectum overlying the prostate receives a high dose of radiation so **we strongly advise that you do not undergo a biopsy of this area. There is a risk that it will not heal properly after a biopsy.**

### Follow-up

After radiotherapy for prostate cancer you will be monitored for a few years.

You will have an outpatient appointment approximately six to eight weeks after finishing the course of radiotherapy. Periodic follow-up appointments for the first five years will be arranged either at the hospital, with your GP, or through patient triggered follow-up.

You will need a blood test before each visit to check your levels of prostate specific antigen (PSA). Temporary rises of PSA after brachytherapy (called PSA bounce) are not uncommon and usually do not mean your cancer has returned.

### Alternative treatments

We are aiming to cure your prostate cancer with this treatment. If, however, prostate cancer recurs after HDR brachytherapy and radiotherapy, then hormone therapy may be needed. This usually helps to control the disease for many years but is not a cure for prostate cancer. Further external beam radiotherapy is not possible and surgery is rarely recommended because of the risk of side effects. Other experimental new treatments such as cryotherapy may be possible.



Patient information adapted by Dr Heath with kind permission from UCH and Exeter.

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