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TREATMENT OPTIONS FOR LOCALISED PROSTATE CANCER

The following is a list of treatment options for clinically localised prostate cancer. It is important to note that no treatment is effective 100% of the time. Please note that this is a general summary and treatment options will vary depending on your individual situation.

Active Surveillance

Not all prostate cancers that are detected are considered to be clinically significant. Active surveillance aims to prevent the overtreatment of clinically insignificant cancers that may never cause you a problem. If the prostate cancer appears to be potentially insignificant then it is monitored periodically with PSA tests and repeat biopsies. If it appears that the cancer is progressing then active primary therapy can be performed at that stage. The criteria for active surveillance are yet to be fully defined but generally include low volume low grade disease. Active surveillance protocols continue to be defined and are yet to be fully validated. The timing of when to intervene is ill-defined and studies are currently underway to determine what constitutes disease progression and when to intervene.

Advantages

- Aims not to over-treat a potentially clinically insignificant cancer.
- Avoids the complications of treatment.
- Quality of life is maintained.
- Decreased initial costs.

Disadvantages

- Prostate examination, prostate biopsy and PSA tests may not accurately determine whether the cancer is indeed insignificant from the outset.
- Chance of missed opportunity for cure.
- The cancer may progress or spread while on surveillance so that it may require more extensive treatment or become incurable.
- Treatment of a larger, more intense cancer may be more intense with greater side effects.
- Nerve-sparing at subsequent prostatectomy may be more difficult which may reduce the chance of potency preservation after surgery.
- The anxiety associated with living with untreated cancer.
- The need for intense follow-up.

Surgery – Radical Prostatectomy

Surgery involves complete removal of the prostate gland. It is highly effective treatment with good long term results in the appropriately selected patient. Surgery may be performed as a laparoscopic (key-hole) procedure, robotic-assisted laparoscopic (key-hole using a computer interface) procedure or by standard open surgery. The results of all of these in terms of cancer control, potency and continence are the same. Laparoscopic and robotic approaches potentially offer a faster recovery with less blood loss and less transfusion risk. Irrespective of the way the surgery is performed, the major long-term side-effects of surgery include impotence and incontinence.

Impotence - The risk of impotence varies depending on your age and health and whether the nerves to the penis are removed or whether one or both of them are spared. If you have excellent erections before the operation, your chance of regaining your erections at 1 year either spontaneously or with tablets is approximately 70% if both nerves are spared and 20-30% if only one is spared. Erections tend to improve over time for 1-2 years after the surgery but it is possible that they may never return and you would need to consider using a vacuum pump, injections or possibly require a prosthesis to achieve intercourse. Should your erections recover sufficient for intercourse, it is important to note that they are not likely to be as strong as prior to the operation. It is highly likely that you will need to use tablets (Viagra, Cilais, Levitra), injections or vacuum devices for some time (months / years) after the operation.

Incontinence – You should expect that you are likely to leak urine after your operation and will need to wear continence pads for the first few weeks or months. It is vital that you perform pelvic floor exercises. In general 25% of patients are pad free within 1 week, 70% within 3 months and 90% at 1 year. Therefore there is a 10% chance that at 1 year after the operation you will need to wear incontinence pads. Usually this is a security pad to catch small amounts of urine however approximately 2% of patients have severe incontinence which may require further surgery by way of injectable agents, a male urethral sling or an artificial sphincter. There is a chance that the incontinence will be permanent.

Advantages of surgery

- The prostate gland is completely removed.
- Additional radiotherapy can still be applied if the cancer is at a high risk of recurring.

Disadvantages of surgery

- Major surgery even if it is performed using key-hole techniques
- Impotence
- Incontinence
- Other risks including rectal injury (which may require a colostomy bag), ureteric injury, anaesthetic problems, heart attack, stroke, major bleeding, blood transfusion, unexpected return to the operating room, a small risk of death from the procedure, fistula (abnormal connection between the bladder and the rectum),

- blood clots in the legs and lungs, recurrence of cancer, anastomotic stricture (scarring at the join between the bladder and the urethra), inability to pass urine, and urine leak requiring prolonged drain placement and prolonged catheterisation.
- Risk of a positive margin which may imply that the cancer has not been completely cleared.
 - Possible need for radiotherapy after the operation or hormonal therapy after the operation.

External Beam Radiotherapy +/- HDR (High Dose Rate Radiotherapy)

External beam radiotherapy is an effective treatment option for localised prostate cancer. It typically involves daily treatment for approximately 8 weeks however shorter protocols can also be used. In some cases extra radiation can be delivered to the prostate by inserting small tubes into the prostate through the skin behind the scrotum. These are used for a short time to deliver iridium which is a radioactive substance to the prostate to provide extra radiation in an attempt to control more aggressive cancers. This is called high dose rate (HDR) brachytherapy. HDR cannot be performed if your prostate is too large and / or you have severe urinary symptoms already.

The advantage of radiotherapy is that it avoids major surgery. However the major disadvantage is that there are limited options available if the cancer is not totally cleared. This is because radiation damages the tissues and inhibits healing processes. Surgery, ultrasound treatment (HIFU) and freezing of the prostate (cryotherapy) are options in cases of radiation failure but the complication rates of these salvage treatments can be significant. It is for these reasons that radiotherapy is generally not recommended in the very young man.

Advantages

- Avoids major surgery.
- Can treat areas beyond the confines of the prostate if there is a high risk that the cancer has spread outside of the prostate gland into the adjacent tissues or lymph nodes.

Disadvantages / risks

- 8 weeks of treatment.
- Salvage treatments are limited in cases of cancer recurrence and are associated with high complication rates.
- Impotence – Erectile function deteriorates over time at around 10% per year producing impotence rates of approximately 50% at 5 years and then deteriorates by approximately a further 5% per year thereafter.
- Severe urinary and rectal toxicity – approximately 5% of patients experience long-term problems with urinary urgency, frequency, bleeding and rectal urgency frequency and bleeding.

- Urethral scarring (stricture) – this produces a blockage of the urethra (water pipe that passes from the bladder through the penis) and is especially a risk in HDR where the rate is about 8%. The strictures can be dense and very difficult to treat.
- Fistula (abnormal connection between the urinary tract and the rectum).

LDR Brachytherapy seeds

Low dose rate brachytherapy is a treatment option for localised prostate cancer which involves the use of radioactive seeds being placed into the prostate. Typically 80 or more seeds of radioactive iodine-125 are placed into the prostate gland under a general anaesthetic. The procedure usually takes approximately 2 hours. Low levels of radiation are emitted by the seeds directly to the prostate. Very little radiation penetrates outside of the prostate gland. This allows the prostate to be specifically treated while minimising the effects to adjacent tissue. The procedure takes approximately 2 hours. A catheter will be placed in your bladder and an ultrasound probe will be placed in your rectum to visualise the prostate gland. Approximately 80 seeds are then inserted into the prostate under ultrasound guidance using a number of needles which are placed between the scrotum and the anus. The needles are removed and the seeds are left within the prostate gland. You will then be admitted to the ward and your catheter will be removed the following morning. A postoperative CT scan will be obtained either the next day or at 1-3 months after the procedure.

Advantages

- Avoids major surgery
- Shorter duration of treatment than external beam radiotherapy.
- Minimally invasive.

Disadvantages

- Not all patients are suitable for brachytherapy.
- Salvage treatments are limited in cases of cancer recurrence and are associated with high complication rates.
- Impotence- The risk of impotence is approximately 22% at 1 year after the implant and is approximately 50% at 5 years. Impotence then worsens by approximately 5% per year thereafter.
- Stricture (5%) - There is a small chance that scar tissue may form in the urethra. The urethra is the tube that carries urine from the bladder through the prostate and penis. It is the tube that you pass urine through in order to urinate. In these instances the scar tissue may need to be opened with further surgery.
- Dysuria (pain with urination) and urinary urgency and frequency is experienced by most (over 70%) men at 3 months. This typically resolves over time. The risk of some ongoing urinary symptoms at 1 year may be up to 20%. At 2 years it is approximately 2.5%, at 3 years 1.25%, and 1% at 5 years.
- Retention (2-3%) - There is a risk that you may not be able to pass urine after the procedure. This is due to swelling of the prostate gland. If this occurs, you may need to learn to pass catheters (small plastic tubes) intermittently into the bladder

each time you need to pass urine. You may have to do this for some months. It is also possibly that at a much later date you may require a rebore of the prostate (TURP) to help you pass urine. There is a higher risk of incontinence associated with TURP following brachytherapy.

- Approximately 1% of patients will experience a syndrome of urinary frequency, pain and reduced bladder volume in the long term.
- Rectal toxicity - Up to 5% of patients may notice increased frequency of bowel movements and blood in the bowel motion.
- Incontinence. There is a risk that you will leak urine after the procedure. This risk is approximately 2% at about 5 years.
- Fistula (1%). There is a risk that you may form an abnormal connection between the bladder and the bowel which can result in ongoing urine infections and may require further complex surgery.
- You should not father children for at least 1-2 years after the implant until all the radiation is gone.

High-Intensity Focussed Ultrasound (HIFU)

HIFU is a newer treatment option for localised prostate cancer. It is touted as a minimally invasive option with minimal side-effects that allow retreatment of the prostate but side effects including impotence and incontinence are not insignificant. Long-term data is limited and HIFU does not appear to be as effective as the more established treatment options of surgery radiotherapy or brachytherapy. It is generally not recommended as first-line prostate cancer treatment.

Cryotherapy

Cryotherapy involves freezing the prostate gland by inserting needles into the prostate gland and freezing it with argon gas. Similar to HIFU long-term data does not match that of the established treatment options and generally it is not recommended as primary treatment.

Hormonal therapy

Prostate cancer grows in response to testosterone. Testosterone can be blocked by injections which can be administered every 1, 3 or 6 months, by tablets or by removing the testicles. This can cause the prostate cancer to shrink back. It does not cure the cancer but holds it at bay. Primary hormonal therapy is usually reserved for patients who have significant other problems such that other radical treatments are not warranted. It may also be used in conjunction with radiotherapy or brachytherapy in some instances.

Diet

The most common cause of death within 10 years following a diagnosis of prostate cancer is heart disease. Therefore diets that are healthy for your heart are also healthy for your prostate. There are no specific dietary supplements that have been universally

proven to inhibit prostate cancer. The following points can be used as a guide to increase your general well-being and your chances of a longer life expectancy.

1. Normal cholesterol and blood lipid levels
2. Normal blood sugar levels
3. Normal blood pressure
4. Low stress /anxiety
5. 1-2 serves of fibre each day
6. Exercise 30 minutes per day including resistance training
7. Maximum of 1-2 standard drinks of alcohol per day
8. Normal waist circumference

Other Resources

Please refer to the links section of this website for further resources and information.