Understanding prostate cancer

MARCELLE RUTH
CANCER CENTRE & SPECIALIST HOSPITAL

The Marcelle Ruth Cancer Centre & Specialist Hospital is the first comprehensive healthcare centre of its kind in Nigeria and indeed West Africa.

> Our promise

In everything we do, we believe that compassion and care make all the difference.

With vast experience and understanding, our specialist team uses the very latest technology and treatments to deliver the best outcomes possible.

From screening and diagnosis to treatment and ongoing support, we are committed to providing outstanding care to those in need.

About this booklet

We understand it can be overwhelming for anyone to undergo cancer care, but we are here to provide you with help and support.

The focus of this leaflet is to help you and your family understand more about prostate cancer.

Prostate cancer

The prostate is a small gland about the size of a walnut. The prostate gets bigger as men get older. It is divided into two lobes and has an outer layer called the capsule. The prostate is below the bladder surrounding the first part of a tube called the urethra. The urethra carries urine from the bladder to the penis. The same tube also carries semen, which is the fluid containing sperm. Just behind the prostate is the rectum. There are also some lymph nodes near the prostate. The prostate contains muscle tissue and glandular tissue. Glandular tissue is tissue that releases certain substances.

Prostate cancer is the most common cancer in men and usually more after age 60 even though it can occur from 40 years of age.

The exact causes of prostate cancer are not known. Several risk factors for developing prostate cancer have been identified, but which of these risk factors cause a prostate cell to become cancerous is not fully known.

Risk factors

Certain risk factors may predispose a person to prostate cancer. These include the following:

Age

Sixty percent of cases of prostate cancer arise in men over 65 years of age. The disease is rare in men under 40.

Race or ethnicity

African-American men and Jamaican men of African ancestry are diagnosed with prostate cancer more often than are men of other races and ethnicities. Asian and Hispanic men are less likely to develop prostate cancer than are non-Hispanic white males.

Family history

Prostate cancer can run in families. A man whose father or brother (first-degree relative) has or had prostate cancer is twice as likely to develop the disease. The younger the family member is when he is diagnosed with prostate cancer, the higher the risk is for male relatives to develop prostate cancer. The risk of developing prostate cancer also increases with the number of relatives affected.

Nationality

Prostate cancer is more common in North America, Europe (especially north-western countries in Europe), the Caribbean and Australia. It is less common in Asia, Africa and South and Central America. Multiple factors, such as diet and lifestyle, may account for this.

Genetic factors

Mutations in a portion of the DNA called the BRCA gene can increase a man's risk of getting prostate cancer, as well as other cancers. This same mutation in female family members may increase their risk of developing breast or ovarian cancer. However, very few cases of prostate cancer can be directly attributed to currently identifiable genetic changes. Other inherited genes associated with an increased risk of prostate cancer include RNASEL, BRCA 1, DNA mismatch genes, HPC1 and HoxB13. For prostate cancer, approximately 5–10% of prostate cancers are due to inherited gene changes.

Other factors

High-fat diets (fatty foods) and diets high in red meats and fatty foods and low in fruits and vegetables appear to be associated with a higher risk of developing prostate cancer. Obesity is also linked to a higher risk of the disease. Increased calcium intake and dairy foods may increase the risk of prostate cancer.

Signs and symptoms

Patient with early prostate cancer are usually asymptomatic. However, prostate cancer symptoms associated with enlargement of the prostate due to prostate cancer, which may occur with early-and late-stage/advanced-stage disease, include the following:

- frequent urination, during the day and/or at night
- difficulty in starting (hesitancy), maintaining or stopping the urine stream
- a weak or interrupted urine stream
- straining to urinate
- urinary retention
- loss of control of urination
- difficult urinating when standing, requiring sitting during urination
- pain with urination or ejaculation
- blood in the urine or in the semen.

Signs and symptoms of advanced prostate cancer (late-stage prostate cancer) that has already spread from the prostate gland to elsewhere in the body (called metastatic prostate cancer) include:

- pain in the bones, especially the low back
- unexplained weight loss
- fatigue
- increasing shortness of breath while doing activities previously well-tolerated
- low-impact fracture of bone(s) without a lot of trauma
- swelling of the legs related to obstruction of the lymph tissue by prostate cancer.

Diagnosis

The tests that are done to make the diagnosis of prostate cancer include the following:

Blood tests

Blood tests especially PSA, a tumour marker which is usually elevated in the case of prostate cancer. PSA is also used for screening and to monitor treatment response and disease recurrence after treatment.

Biopsy

Prostate biopsy is usually done using the guidance of imaging devices. Biopsy establishes the diagnosis. False-negative results often occur, so multiple biopsies may be needed before prostate cancer is detected

The resemblance or difference of the cancerous cells from the normal cells is called the grade, which can be scored using the Gleason score. The higher the Gleason score, the more aggressive the cancer will be:

- Gleason grade group 1: Gleason score < 6
- Gleason grade group 2: Gleason score 3+4= 7
- Gleason grade group 3: Gleason score 4+3 = 7
- Gleason grade group 4: Gleason 4+4 =8, 3+5 = 8 and 5+3 = 8
- Gleason grade group 5: Gleason score 9 and 10.

Imaging tests

Imaging tests including multi-parametric MRI, CT scan, ultrasound scan, PSMA PET and nuclear bone scan are used to define the extent of the prostate cancer in the body.

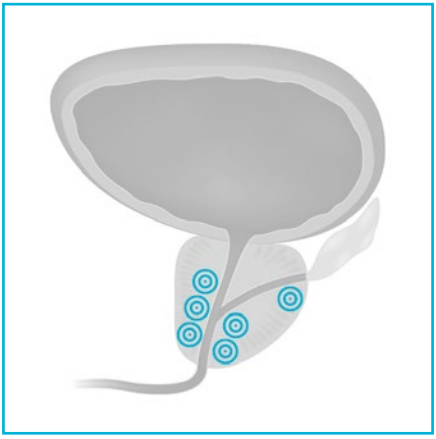
Stages of prostate cancer

There are four stages from 1 to 4, depending on the extent of the disease in the body as described below.

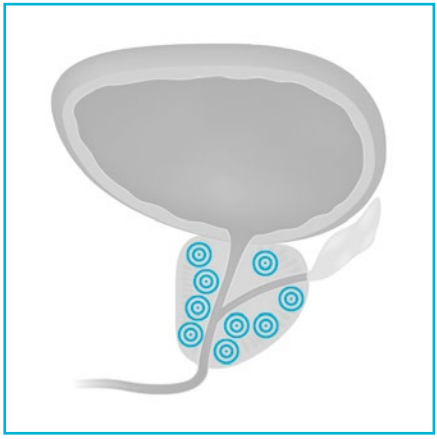
Stage I

Stage 2

Stage 3



Stage 4



Treatment

The treatment for the early disease can be active surveillance, radical prostatectomy (removal of the prostate), brachytherapy (seed implant), hormone treatment and conformal radiotherapy. For patients whose disease has spread outside the prostate, hormone treatment, various forms of radiotherapy, radioisotope treatment and chemotherapy are all considered.

The choice of the treatment options are determined by the multidisciplinary team members who are responsible for the treatment of prostate cancer.

Sources

University College London Hospitals/Macmillan Cancer Centre and patient information booklets

www.beatson.scot.nhs.uk

www.christie.nhs.uk

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