



*Prostate  
Cancer*

The prostate gland is a walnut shaped solid organ of male reproductive system that surrounds the male urethra below the base of urinary bladder & lies in front of the rectum. It is the most prevalent cancer in elderly age group men & 2nd most common cause of death due to cancer.



Prostate cancer is a very slow progressing disease most of the times. In fact, many men die of old age without ever knowing that they had prostate cancer. It is only when an autopsy is done doctors come to know that it was there. Several studies indicated that about 80% of all men in there eighties had prostate cancer when they died, but nobody knew, not even the doctors.

Increasing age is the single most important risk factor in the development of disease. More the age, more is the risk of development of prostate cancer. Some studies suggest that risk of development of prostate cancer can be decreased by increased consumption of lycopenes (found in tomato), Vitamin 'A', Vitamin 'E', Selenium etc.

### Symptoms

In early stages, it is completely asymptomatic. Most men at this stage find out that they have prostate cancer only after a routine check up or blood test. If symptoms exist, they are usually one of the following.

1. Increased frequency of urination.
2. Increased urgency to pass urine.
3. Weak stream
4. Hesitancy, i.e. patient may find it hard to start urinating.
5. Increased night time urination.
6. Blood in urine.
7. Painful urination.
8. Difficult to maintain erection (less common).

In advanced stages, patient may present with.

1. Bone pains especially in spine (vertebral), pelvis, long bones etc.
2. Lower limb weakness.
3. Urinary or fecal incontinence.

### **Screening**

Screening for prostate cancer should begin at 40 years for men at high risk of developing the disease and at 45 years for normal patient.

Screening is done by following methods-

1. Measurement of prostate specific antigen (PSA) levels in the blood. PSA is secreted by the epithelial lining of prostate gland. In general higher the PSA level, more likely it is due to prostate cancer. However, it is not very specific as falsely elevated levels may be seen in infection, inflammation; benign prostate hyperplasia (BPH), recent DRE or recent ejaculation.
2. Digital rectal examination (DRE) / per rectal examination. In DRE, a clinician comes to know the size of prostate, any abnormal growth, local extension of disease and involvement of other organ

### **Imaging Studies**

It includes

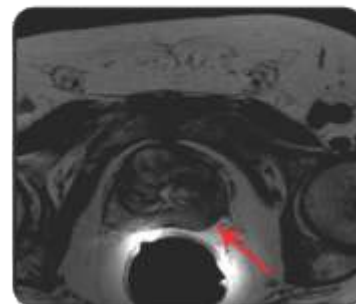
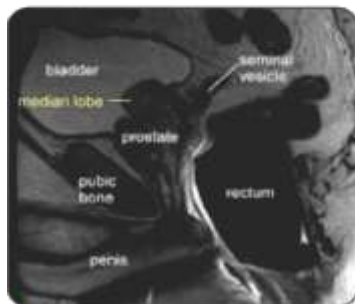
1. Trans rectal ultrasound.



2. CT- Scan of abdomen & pelvis to know the involvement of other organs.



3. MRI (Magnetic resonance spectroscopy) to know the local extent of disease.



### **Staging**

Staging of tumor is important to know the extent of disease and to assess the prognosis. It also guides the treating doctor as of how to treat and which modality of treatment to be used. The most common staging system today is TNM staging (Tumor, Nodes, Metastases) this involves size of tumor, any lymph node spread and presence or absence of distant metastases. T1 & T2 tumors are restricted to prostate while T3 & T4 are associated with adjacent or distant spread.

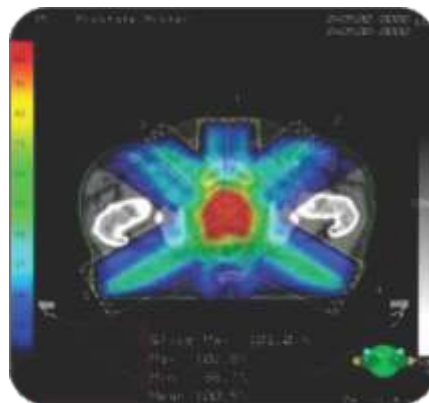
Pathological grading of prostate tumors is done by Gleason's scoring system which is based on 10 points. This consists of two numbers (eg. 3+3= 6). With first number representing the predominant Gleason pattern (scored out of 5) & second number representing the second most common Gleason pattern. Greater the Gleason's score, higher the grade of prostate cancer, which is associated with lymph node involvement & distant metastases.

## Treatment Options

### Early stages:

If the tumor is very small & localized, then following are the treatment options.

1. Watchful waiting – with regular monitoring of PSA blood levels.
2. Radical Prostatectomy – surgical removal of prostate gland.
3. External beam Radiotherapy with either Intensity Modulated Radiotherapy (IMRT), Image Guided Radiotherapy (IGRT) or Rapid Arc Technique or even Brachytherapy in some cases.



### Advanced Stages:

A combination of radiotherapy & hormonal therapy plays a key role in management.