

Conditions of the Prostate: An Introductory Overview

2 Contact Hours

Copyright © 2012 by RN.com
All Rights Reserved

Reproduction and distribution of these materials is prohibited without the express written authorization of RN.com

First Published: 7/6/2012
Course Expires: 8/31/2016

Acknowledgments

RN.com acknowledges the valuable contributions of...

Nadine Salmon, RN, BSN, is the Education Support Specialist for RN.com. Nadine earned her BSN from the University of the Witwatersrand, Johannesburg, South Africa. She worked as a midwife in Labor and Delivery, an RN in Postpartum units and Antenatal units and then moved to the United Kingdom, where she worked as a medical surgical nurse. After coming to the US in 1997, Nadine worked in obstetrics and became a Board Certified Lactation Consultant. Nadine was the Clinical Pre Placement Manager for the International Nurse Staffing division before moving to RN.com. Nadine is currently pursuing a Masters in Nursing Leadership.

Rita R. Callahan, RN, MA, PhD, course coordinator. Rita is a nurse with 20 years of medical, surgical and oncology experience. She has worked as a staff nurse, charge nurse, and nurse preceptor on different San Diego healthcare systems' medical-surgical/oncology units. Additionally, she has worked in home health, hospice, and as a nurse educator. She received her Bachelor's of Science in Nursing from San Diego State University, her Masters Degree from the University of Phoenix, and her Doctoral degree from the University of San Diego. Rita has held nurse teaching positions at the University of San Diego, Point Loma Nazarene University, and Southwestern Community College.

Disclaimer

RN.com strives to keep its content fair and unbiased. The author(s), planning committee, and reviewers have no conflicts of interest in relation to this course. There is no commercial support being used for this course. Participants are advised that the accredited status of RN.com does not imply endorsement by the provider or ANCC of any commercial products mentioned in this course.

There is "off label" usage of medications discussed in this course.

You may find that both generic and trade names are used in courses produced by RN.com. The use of trade names does not indicate any preference of one trade named agent or company over another. Trade names are provided to enhance recognition of agents described in the course.

Note: All dosages given are for adults unless otherwise stated. The information on medications contained in this course is not meant to be prescriptive or all-encompassing. You are encouraged to consult with physicians and pharmacists about all medication issues for your patients.

Purpose

The purpose of this continuing nursing education course is to provide healthcare professionals with an overview of conditions affecting prostate health.

This course includes discussions about benign prostatic hyperplasia, prostatitis, and prostate cancer.

Learning Objectives

After successful completion of this course, you will be able to:

- Define benign prostatic hyperplasia and prostatitis, and distinguish between the two conditions.
- Describe the pathophysiology of benign prostatic hyperplasia.
- Discuss signs and symptoms related to benign prostatic hyperplasia, prostatitis & prostate cancer.
- Identify risk factors for prostate cancer.
- Discuss staging and management options for prostate cancer.
- Discuss the importance of prostate health education and identify available community resources.

Introduction

The prostate is a small (walnut-size) gland that is positioned just below the bladder in men, and forms part of the male reproductive system.

It sits low in the pelvis, just in front of the rectum. The prostate helps produce semen, the milky fluid that carries sperm from the testicles through the penis when a man ejaculates.

The prostate surrounds part of the urethra, which carries urine out from the bladder and through the penis.

Urinary retention (UR) presents a major challenge in the care of older adult males. The two main causes of UR in elderly include:

- Impaired bladder contractility
- Benign prostatic hyperplasia (BPH)-related bladder outlet obstruction (Stamatiou, 2009)

This course explores BPH-related bladder outlet obstruction.

Age and the Prostate

The prostate gland tends to grow larger with age; it may squeeze the urethra and cause problems in passing urine.

Some men in their 30's and 40's may begin to experience urinary symptoms and seek medical attention. For others, symptoms are not noticed until much later in life.

An infection or a tumor can also cause prostate enlargement.

Benign Prostatic Hyperplasia (BPH)

Benign prostatic hyperplasia (BPH) is the non-malignant enlargement of the prostate over time, due to abnormal cellular growth.

BPH is not linked to cancer and does not increase the risk of developing prostate cancer.

BPH symptoms usually begin after the age of 50. They can include:

- Trouble starting a urine stream or producing more than a dribble of urine
- Passing urine frequently, especially at night
- Feeling that the bladder has not fully emptied
- A strong or sudden urge to pass urine
- Weak or slow urine stream
- Stopping and starting again several times while passing urine
- Pushing or straining to begin passing urine

BPH can lead to:

- A weak bladder
- A backflow of urine causing bladder or kidney infections
- A complete block in the flow of urine
- Kidney failure

Early BPH symptoms take many years to turn into bothersome problems. The early symptoms are cues for your patients to make an appointment to see their physician.

Pathophysiology of BPH

In benign prostatic hypertrophy, cellular aspects of the prostate are affected due to the enlargement of the prostate itself.

Normal urination process is interrupted and the bladder outlet can become obstructed. Some researchers hypothesize that the pathophysiology of "prostatism" is due to bladder outlet obstruction.

The pathophysiology of BPH can be attributed to both static and dynamic factors:

- Static obstruction is due to the bulk enlargement of the prostate encroaching upon the prostatic urethra and bladder outlet.
- Dynamic obstruction is related to the tension of prostate smooth muscle.

Incidence of BPH

Historically, BPH is a condition that is expected in the development of the aging male population.

Half of men in their 60's, and most men in their 70's and 80's, will have signs of BPH.

Evidence supports that 90% of men will develop BPH by their 80th birthday.

Diagnosis of Benign Prostatic Hypertrophy (BPH)

BPH is diagnosed by:

- A positive history of urinary frequency or retention and bladder irritation. A high post-void residual urine volume (> 100 mL) measured on two separate occasions may be indicative of BPH (Stamatiou, 2009).
- An enlarged prostate confirmed by manual examination of the prostate: Using a gloved and lubricated finger, the physician feels the prostate from the rectum. This is known as a Direct Rectal Examination or DRE. The test lasts about 10-15 seconds.
- Urinalysis, which may indicate bleeding or infection.
- Lab tests to determine if the prostate has affected the kidneys, including a Prostate-Specific Antigen (PSA) test.

Treating BPH

Management options for BPH may include one of the following approaches:

- **Watchful Waiting Approach:** For men with very mild symptoms of BPH, a “hands-off” approach may be initially employed where the patient is closely monitored for progression of the disease but no active intervention is started. The watchful waiting approach encourages annual checkups which include DRE's (Direct Rectal Exams) and other investigative testing. Treatment is started only if symptoms become problematic. If your patient chooses this approach, encourage him to limit drinking in the evening, especially alcohol or caffeine, and to empty his bladder regularly and fully when passing urine.
- **Pharmacological Therapies**
- **Surgical Interventions**

Pharmacological Management of BPH

The pharmacological management of BPH usually includes the following medications:

| BPH Medications | | | |
|-----------------------------|--|--|---|
| Category | Activity | Generic Name | Brand Name |
| Alpha-blockers | <i>Relax muscles near prostate</i> | alfuzosin doxazosin silodosin tamsulosin terazosin | Uroxatral Cardura Rapaflo Flomax Hytrin |
| 5 alpha reductase inhibitor | <i>Slows prostate growth, shrinks prostate</i> | finasteride dutasteride | Proscar or Propecia Avodart |

Some evidence suggests that taking both 5 alpha-reductase inhibitors and Alpha-blockers together may work best to keep BPH symptoms from getting worse. For many men, these drugs can improve urine flow and reduce the symptoms of BPH within days. Possible side effects include dizziness, headache and fatigue.

5 alpha-reductase inhibitor acts as an inhibitor of the enzyme that converts testosterone into dihydrotestosterone (DHT), which stimulates prostate growth. When the action of 5-alpha reductase is blocked, DHT production is lowered and prostate growth slows.

5-alpha reductase inhibitors can cause the following side effects in a small percentage of men:

- Decreased interest in sex
- Trouble getting or keeping an erection
- Smaller amount of semen with ejaculation

Alpha-blockers help treat benign prostatic hyperplasia (BPH) by relaxing smooth muscle tissue found in the prostate and the bladder neck. This allows urine to flow out of the bladder more easily (WebMD, 2012).

Note! Inform your patients that when taking these drugs, their PSA test number may be lower. In addition, evidence shows these drugs lower the risk of getting prostate cancer, but whether they can help lower the risk of dying from prostate cancer is still unclear.

Surgical Management of BPH

Although the number of prostate surgeries has decreased over the years, surgical management of BPH is still useful when symptoms are severe or drug therapy has not worked well.

Types of surgical interventions may include:

TURP (transurethral resection of the prostate)

The most common surgery for BPH, TURP accounts for 90 percent of all BPH surgeries. The physician passes an instrument through the urethra and trims away extra prostate tissue. A spinal block is used to numb the area. Tissue is sent to the laboratory to check for prostate cancer.

Bleeding can be a serious side effect with the TURP, and an indwelling catheter may be needed for a few days after surgery.

TUIP (transurethral incision of the prostate)

This surgery, which is similar to TURP, is used on slightly enlarged prostate glands. The surgeon places one or two small cuts in the prostate, to relieve pressure without trimming away tissue. It has a low risk of side effects. Like TURP, this treatment helps with urine flow by widening the urethra.

TUMT (transurethral microwave thermotherapy)

Microwaves sent through a catheter are used to destroy excess prostate tissue. This can be an option for men who should not have major surgery because they have other medical problems.

TUVP (transurethral electroevaporation of the prostate)

An electrical current is used to vaporize prostate tissue.

Laser Surgery

The physician passes a laser fiber through the urethra into the prostate, using a cystoscope, and then delivers several bursts of laser energy. The laser energy destroys prostate tissue and helps improve urine flow. Like TURP, laser surgery requires anesthesia. One advantage of laser surgery over TURP is that laser surgery causes little blood loss. The recovery period for laser surgery may be shorter too. However, laser surgery may not be effective on larger prostates.

Open Prostatectomy

This may be the only option in rare cases, such as when the obstruction is severe, the prostate is very large, or other procedures cannot be done. General anesthesia or a spinal block is used, and a catheter remains for 3 to 7 days after the surgery. This surgery carries the highest risk of complications. Tissue is sent to the laboratory to check for prostate cancer.

Prostatitis

Prostatitis is an inflammation of the prostate gland that may result from a bacterial infection. It affects at least half of all men at some time during their lives, but does not increase the risk of developing other prostate diseases.

Prostatitis Symptoms:

- Trouble passing urine
- A burning, stinging, or painful feeling when passing urine
- A strong, frequent urge to pass urine, even when there is only a small amount of urine
- Chills and high fever
- Low back pain or body aches
- Pain low in the belly, groin, or behind the scrotum
- Rectal pressure or pain
- Urethral discharge with bowel movements
- Genital and rectal throbbing
- Sexual problems and loss of sex drive
- Painful ejaculation (sexual climax)

Types of Prostatitis

There are four types of prostatitis:

- **Acute Bacterial Prostatitis**

A sudden-onset bacterial infection that presents itself with a sudden, severe onset of chills and fever. There is often blood present in the urine and PSA levels may be elevated. This is the least common of the four types, yet the easiest to diagnose and treat. Treatment consists of high dose antibiotics, taken for 7 to 14 days; followed by lower doses for several weeks. Pain medication may be needed.

- **Chronic Bacterial Prostatitis**

Chronic, recurring bladder infections caused by a defect in the prostate that allows bacteria to collect in the urinary tract. It is managed with antibiotic treatment for 4 to 12 weeks. This type of treatment clears up about 60 percent of cases. Long-term, low-dose antibiotics may help relieve symptoms in resistant cases.

- **Chronic Prostatitis / Chronic Pelvic Pain Syndrome**

This disorder is the most common but least understood type of prostatitis. It is found in men of any age from late teens to the elderly, and symptoms come and go without warning. It is usually present as a pain or discomfort in the groin or bladder area and the condition is usually not treated, but PSA levels may be closely monitored if levels are high.

- **Asymptomatic Inflammatory Prostatitis (AIP)**

It is usually asymptomatic and only discovered when the patient undergoes other tests, such as infertility testing or prostate cancer screenings. PSA levels are elevated in this condition. There are several different treatment options for AIP. Anti-inflammatory medications are most commonly used in conjunction with alpha-blockers to relax the smooth muscle of the prostate, to facilitate voiding. Antibiotic coverage may be used to treat possible underlying infection.

Prostate Cancer

Prostate cancer is the most common cancer in American men after skin cancer.

Did you know:

Most men with prostate cancer do not die from this disease. Only about 3 percent of American men will die of prostate cancer.

- About 16 percent of American men are diagnosed with prostate cancer at some point in their lives.
- Prostate cancer tends to grow slowly compared with most other cancers.

Incidence & Implications of Prostate Cancer

It is estimated that 241,740 new cases in the United States (US) will be diagnosed with prostate cancer in 2012, and 28,170 men in the US will die from prostate cancer in 2012 (NIH.gov, 2012).

About 1 in 6 men will be diagnosed with prostate cancer during his lifetime, but more than 2 million men in the US who have been diagnosed with prostate cancer at some point are still alive today.

Cell changes may begin 10, 20, or even 30 years before a tumor gets big enough to cause symptoms. By age 50, very few men have symptoms of prostate cancer, yet some precancerous or cancer cells may be present. More than half of all American men have some cancer in their prostate glands by the age of 80.

Most of these cancers never pose a problem. They may never cause symptoms or become a serious threat to health.

Symptoms of Prostate Cancer

The clinical presentation of prostate cancer can be similar to the symptoms of BPH:

- Trouble passing urine
- Frequent urge to pass urine, especially at night
- Weak or interrupted urine stream
- Pain or burning when passing urine
- Blood in the urine or semen
- Painful ejaculation
- Nagging pain in the back, hips, or pelvis

Risk Factors for Prostate Cancer

Several risk factors have been linked to prostate cancer:

DIET

The risk of prostate cancer may be higher for men who consume high-fat diets.

FAMILY HISTORY

Men whose fathers or brothers have had prostate cancer have a 2-3 times higher risk of prostate cancer than men who do not have a family history of the disease.

- A man who has three immediate family members with prostate cancer has about 10 times the risk of a man who does not have a family history of prostate cancer.
- The younger a man's relatives are when they have prostate cancer, the greater his risk for developing the disease. Prostate cancer risk also appears to be slightly higher for men from families with a history of breast cancer.

RACE

African-American men have the highest risk of prostate cancer. Prostate cancer tends to start at younger ages and grows faster than in men of other races.

- After African-American men, prostate cancer is most common among Caucasian men, followed by Hispanic and Native American men.
- Asian-American men have the lowest rates of prostate cancer.

AGE

Men who are 50 or older have a higher risk of prostate cancer.

Prostate Diagnostics: The Standard PSA Test

The Standard PSA (Prostate-specific antigen) Test

The U.S. Food and Drug Administration (FDA) has approved the use of the standard PSA test along with a DRE to help detect prostate cancer in men age 50 and older. The standard PSA Test measures PSA that is attached or bound to other proteins, as well as unbound (free) PSA in the blood.

PSA is a protein made by prostate cells. It is normally secreted into ducts in the prostate, where it helps make semen, but sometimes it can leak into the blood, especially when levels are higher than normal. When PSA is present in the blood, it can be measured by a blood test referred to as the PSA test. PSA levels are measured in terms of the amount of PSA per volume of fluid tested.

An elevated PSA blood level is not conclusively diagnostic of prostate cancer, as several other factors can cause a false-positive test result. Blood PSA levels are also often increased in men with prostatitis or BPH. Activities that disturb the prostate gland, such as riding a bicycle or motorcycle, or having a DRE, an orgasm within the past 24 hours, a prostate biopsy, or prostate surgery, may also temporarily increase PSA levels. A rapid increase in PSA levels may suggest prostate cancer.

Prostate Diagnostics: The Free PSA Test

Free (Not Bound) PSA Test

The Free PSA Test is used for men who have higher PSA levels, and measures free PSA only. Free PSA is linked to benign prostate conditions, such as BPH. The percentage of free PSA can help tell what kind of prostate problem a patient has:

- If both total PSA and free PSA are higher than normal (high percentage of free PSA), this suggests BPH rather than cancer.
- If total PSA is high but free PSA is not (low percentage of free PSA), cancer is more likely. Additional testing, such as a biopsy, should be done.

Prostate Diagnostics: Biopsy

"There is no magic PSA level below which a man can be assured of having no risk of prostate cancer nor above which a biopsy should automatically be performed. A man's decision to have a prostate biopsy requires a thoughtful discussion with his physician, considering not only the PSA level, but also his other risk factors, his overall health status, and how he perceives the risks and benefits of early detection." (*Dr. Howard Parnes, Chief of the Prostate and Urologic Cancer Research Group, Division of Cancer Prevention, National Cancer Institute, 2011*).

If your patient's symptoms or test results suggest prostate cancer, the physician will refer the patient to a urologist for a prostate biopsy. A biopsy is usually done in the physician's office.

For a biopsy, small tissue samples are taken directly from the prostate. The physician will take samples from several areas of the prostate gland. This can help lower the chance of missing any areas of the gland that may have cancer cells. Like other cancers, prostate cancer can be diagnosed

only by looking at tissue microscopically.

Prostate Diagnostics: A Positive Biopsy

A positive test result after a biopsy means prostate cancer is present. A pathologist will check the biopsy sample for cancer cells and will assign a Gleason score. This score ranges from 2 to 10 and describes how likely it is that a tumor will spread. The lower the number, the less aggressive the tumor is and the less likely it will spread.

Treatment options depend on:

- The stage of the cancer: Based on the size and location of the cancer (stages range from 1 to 4).
- Gleason score: Assigned based on the microscopic appearance of the cancer. Cancers with a higher Gleason score are more aggressive and have a worse prognosis. A pathologist assigns a grade to the most common tumor pattern, and a second grade to the next most common tumor pattern. The two grades are added together to get a Gleason Score, which ranges from 2 to 10.
- PSA level
- The patient's age and general health

Reaching a decision about treatment of the patient's prostate cancer is a complex process. Many men find it helpful to talk with their physicians, family, friends, and other men who have faced similar decisions.

Stages of Prostate Cancer

Stage T1 means that the cancer is so small it can't be felt during a DRE. T1a and T1b cancer is most often found by accident, when men have surgery to relieve symptoms of BPH.

T1c is most often found when a prostate biopsy is done because of a PSA test result that showed a high PSA blood level. This is the most commonly diagnosed stage of prostate cancer.

A stage T2 means that prostate cancer can be felt during a DRE, but is still only in the prostate. Stage T2 cancer may also be assigned an a, b, or c designation, depending on the cancer's size and whether it is in one or more lobes of the prostate (NIH, 2012).

Treatment Options: Surveillance

Prostate cancer is most often found in an early stage (confined to the prostate). When it is found early, there are a number of treatment choices available.

The first treatment option is active surveillance. This involves close monitoring for any sign that the cancer may be growing.

Frequent physical examinations, including DRE, and investigative testing (PSA tests & biopsies) can be done to monitor the cancer.

Active surveillance can be used for men with early-stage prostate cancer because the cancer often grows so slowly that it may not cause problems during a man's lifetime.

For some men, active surveillance may be a way to avoid the side effects and costs of treatment without shortening their life.

Treatment Options: Surgery

Surgery is a treatment choice for men with early-stage prostate cancer who are in good health. Surgery options include:

Open prostatectomy

Also called retropubic prostatectomy. In this surgery, the prostate is removed through a single long cut made in the abdomen. This is nerve-sparing surgery, in that it lessens the chances that the nerves near the prostate will be harmed. These important nerves control erections and normal bladder function.

Laparoscopic surgery

The prostate is removed laproscopically through 4 to 6 small cuts in the navel and the abdomen. It is minimally invasive and nerve-sparing.

Perineal prostatectomy

The prostate is removed through an incision between the scrotum and anus. With this method, the surgeon is not able to check the lymph nodes for cancer and nerve-sparing surgery is more difficult to do. This type of surgery is not used very often.

Cyber Knife Robotic Radiosurgery

This is a relatively new management option for early stage prostate cancer that combines robotic surgery with radiation therapy. One of the greatest challenges in treating prostate tumors with radiation is that the prostate moves unpredictably as air passes through the rectum and as the bladder empties and fills. Minimizing any large movements of the prostate can help reduce unnecessary irradiation of surrounding healthy tissue. Robotic radiosurgery overcomes this challenge by continuously identifying the exact location of the prostate tumor and can irradiate it without damage to surrounding tissue (Accuray, 2012).

Prior to Cyber Knife treatment, 3-5 tiny gold markers, known as fiducial markers, are inserted into the prostate, via a needle guided by ultrasound. These markers are used as reference points to identify the exact location of the prostate. In addition, a custom-fit body cradle is made prior to radiosurgery, to maintain the patient in the same position during radiosurgery.

Patients also undergo a CT scan while lying in the cradle to determine the exact size, shape and location of the prostate. An MRI scan also may be necessary to fully visualize the prostate and nearby anatomy. Once the imaging is done, the body cradle will be stored and used during Cyber Knife treatment.

Cyber Knife radiosurgery is usually delivered in one to five sessions, and is a completely pain-free experience. The Cyber Knife's computer-controlled robot moves around the patient's body to various locations from which it will deliver radiation. Once prostate cancer treatment is complete, most patients quickly return to their daily routines with little interruption to their normal activities.

To date, prostate cancer patients have experienced only minimal short-term side effects from Cyber Knife treatment, but data is still being collected to evaluate long-term toxicity. Temporary symptoms may develop, including reduced urinary stream, burning with urination, more frequent urination, increase in frequency of stools, loose stools and more gas with bowel movements than usual.

Response to therapy varies from patient to patient.

Treatment Options: Radiation Therapy

Radiation therapy uses high doses of radiation energy to treat prostate cancer, and is a good choice for many men with early-stage prostate cancer. It is also the best treatment for older men or those who have other health problems. While surgery and radiation therapy may have similar outcomes for early-stage prostate cancer, radiation therapy is the primary option for locally advanced prostate cancer and can also be used for localized prostate cancer. For larger or more aggressive tumors, radiation therapy may be used in combination with hormone therapy.

There are different types of radiation therapy:

External beam radiation

Uses targeted radiation, usually once a day, for 5 days a week, for 6 to 9 weeks. Each treatment session usually lasts about 15 minutes (NIH, 2012).

3-D conformal radiation therapy is a type of external beam radiation that is often used to treat prostate cancer. It allows more targeted delivery of radiation, while sparing healthy tissue. Intensity-Modulated Radiation Therapy (IMRT) is another type of external beam radiation that uses computers to deliver radiation precisely to the cancer. It also reduces damage to the healthy tissue, such as the rectum and bladder.

Internal beam radiation

Brachytherapy is a type of internal radiation therapy in which the radioactive material is placed inside the prostate. Brachytherapy is a choice for men with low-risk prostate cancer.

Note! *External beam radiation therapy and brachytherapy can be used together.*

Treatment Options: Proton Radiation Therapy

The most precise form of radiation therapy is called proton therapy. Proton therapy allows higher targeted doses of radiation to be delivered to the prostate with fewer side effects. Unlike treatment with conventional X-ray therapy (which may require 8 beam angles), treatment with proton therapy can be achieved using just two beams (one right-sided and one left-sided beam).

Spot-scanning is an even more advanced type of proton therapy, in which a pencil beam proton therapy delivers a single, narrow proton beam that is magnetically swept across the tumor, depositing the radiation dose.

Using rapidly fired pulses, the pencil beam hits each planned spot within the tumor with the prescribed amount of radiation, starting at the deepest layer and working in succession, until the whole tumor is covered.

Treatment Options: Hormone Therapy

Male sex hormones, such as testosterone, stimulate the growth of prostate cancer. Hormone therapy slows prostate cancer's growth by reducing the body's ability to make testosterone or by blocking testosterone's action in prostate cancer cells.

Hormone therapy can play a role in treating early-stage prostate cancer. For men with high-risk, early-stage prostate cancer, it may be used along with radiation therapy. Candidates for hormone therapy may also include:

- Male patients seventy years of age and older
- Male patients with additional health concerns
- A patient on active surveillance whose cancer begins to advance

Hormone therapy can be prescribed for as little as 6 months or up to many years. Side effects may include:

- Loss of sex drive
- Erectile dysfunction (ED)
- Hot flashes
- Osteoporosis

Pharmacological Treatment Options for Prostate Cancer

There are several drugs approved by the Food and Drug Administration (FDA) for prostate cancer. These include:

Acetate Abiraterone

Cabazitaxel

Degarelix

Docetaxel

Jevtana (Cabazitaxel)

Leuprolide Acetate

Lupron (Leuprolide Acetate)

Lupron Depot (Leuprolide Acetate)

Lupron Depot-3 Month (Leuprolide Acetate)

Lupron Depot-4 Month (Leuprolide Acetate)

Lupron Depot-Ped (Leuprolide Acetate)
Prednisone
Provenge (Sipuleucel-T)
Sipuleucel-T
Taxotere (Docetaxel)
Viadur (Leuprolide Acetate)
Zytiga (Abiraterone Acetate)

Provenge: A New Pharmacological Option for Prostate Cancer

Provenge® (Sipuleucel-T) was approved by the FDA in April 2010. It is the first approved cancer drug that uniquely uses the body's own immune system to fight prostate cancer. Provenge® is reported to benefit men in extending life for an extra four months (median survival time) which is double that of chemotherapy (NIH, 2012).

This drug is usually administered to prostate patients whose disease process is incurable, and that has reached the point of metastasis (spreading) to other body areas, and is not responding to hormone therapy or radiation.

Special immune cells (dendritic) are drawn from the patient that generally assist the immune system in detecting cancer as a threat. The cells are mixed with a protein that is attached to most prostate cancer cells, along with another substance to increase the immune system. This is then followed with the cells administered back to the patient in three separate infusions every two weeks.

Prostate Health Education

Prostate health education should be diverse, people-friendly, and:

- Include the use of visual aids
- Share risk factors and options of lifestyle adaptation
- Discuss potential symptoms
- Explain about detection and diagnosis
- Use evidence-based data illustrating advancement in prostate research

Prostate health educators should also provide the patient and family with current information, including links to the following resources:

- www.niddk.nih.gov
- www.cdc.gov/cancer/prostate
- www.cancer.gov or www.cancer.gov/espanol

Research Efforts

Rapid Response Surveillance Studies (RRSS)

This is a program of special studies which addresses topical issues in cancer prevention and control. New and emerging issues related to cancer prevention and control can be investigated using this mechanism that allows studies to move from the initial concept through completion in a relatively short interval.

This area of research investigates factors that may influence cancer outcomes, such as the stage of cancer at diagnosis, the impact of risk factors, or socioeconomic (SES) factors.

The goal of such research is to understand the factors associated with progression of cancer and to improve rates of cancer survival.

(National Cancer Institute, 2012).

Research Findings

Recent research studies have demonstrated a possible link between diet and prostate cancer.

In a recent study by the National Institute of Health (NIH), a low-fat fish oil diet has been identified as a risk lowering strategy in the fight against prostate cancer (ClinicalTrials.gov. (2011)). Although the exact nature of the effects of a low-fat fish oil diet are not completely known, the amount and type of fat consumed in the diet appears to affect the incidence of prostate cancer. It is believed that polyunsaturated omega-3 fats are protective against this disease. Omega-3 fat is derived from fish, and is quite different to animal and vegetable (omega-6) fats.

Since the exact mechanism of this reduction in prostate cancer risk is not known, study physicians are now focusing efforts on identifying markers in the blood of men who have prostate cancer, to determine if a diet supplemented with omega-3 type fat from fish oil helps reduce these markers, hence reducing cancer in men consuming higher levels of omega-3 fats.

Conclusion

This course provides a broad overview of conditions affecting the prostate.

Health education on promoting prostate health, recognizing early symptoms of BPH, prostatitis and prostate cancer, and seeking timely treatment will lead to better outcomes.

Healthcare professionals play a pivotal role in promoting awareness of prostate disease and protecting the health of men in general.

Appendix: AUA Symptom Score Index

The American Urological Association (AUA) BPH Symptom Score Index can be used to evaluate prostate symptoms. The patient completes a short questionnaire, known as Symptom Score Index.

The total score will be between 0 and 35 points.

Mild symptoms: 0-7 points

Moderate symptoms: 8-19 points

Severe symptoms: 20-35 points

Appendix: AUA Symptom Score Index

| | | | | | | |
|--|---|---|---|---|---|---|
| Over the past month, how often have you had a feeling of not emptying your bladder completely after you finished urinating? | 0 | 1 | 2 | 3 | 4 | 5 |
| Over the past month, how often have you had to urinate again less than two hours after you finished urinating? | 0 | 1 | 2 | 3 | 4 | 5 |
| Over the past month, how often have you stopped and started again several times when you urinated? | 0 | 1 | 2 | 3 | 4 | 5 |
| Over the past month, how often have you found it difficult to postpone urination? | 0 | 1 | 2 | 3 | 4 | 5 |
| Over the past month, how often have had a weak urinary stream? | 0 | 1 | 2 | 3 | 4 | 5 |
| Over the past month, how often have you had to push or strain to begin urination? | 0 | 1 | 2 | 3 | 4 | 5 |
| Over the past month, how many times did you usually get up to urinate from the time you went to bed at night until the time you got up in the morning? | 0 | 1 | 2 | 3 | 4 | 5 |

Questions: 0 - Not at all 1 - Less than 1 in 5 2 - Less than half the time
 3 - About half the time 4 - More than half the time 5 - Almost always

References

- Accuray (2012). Cyber Knife Surgery. Retrieved from: <http://www.cyberknife.com/cyberknife-treatments/prostate/how-used-treat-cancer.aspx>
- Centers for Disease Control and Prevention. (2011). Prostate cancer: Should I get screened? Retrieved on March 16, 2011 from: http://www.cdc.gov/cancer/prostate/pdf/prostate_fs_final.pdf
- Clinical Trials.gov. (2011). Effects of Tomato-Soy Juice on Biomarkers in Patients With Prostate Cancer Undergoing Prostatectomy. Retrieved on March 21, 2011 from: <http://clinicaltrials.gov/ct2/show/NCT01009736>
- Clinical Trials.gov. (2011). Low-Fat Fish Oil Diet for Prostate Cancer Prevention. Retrieved on March 21, 2011 from: <http://clinicaltrials.gov/ct2/show/NCT00798876?term=fish+and+prostate+cancer&rank=1>
- National Cancer Institute. (2009). Understanding prostate changes: A health guide for men. Retrieved on March 4, 2011 from: http://www.cancer.gov/cancertopics/screening/understanding-prostate-changes/AllPages/Print#1_
- National Cancer Institute. (2011). Prostate cancer. Retrieved on March 14, 2011 from: <http://www.cancer.gov/cancertopics/types/prostate>
- National Cancer Institute. (2012). Prostate Cancer. Retrieved April 5, 2012 from: <http://www.cancer.gov/cancertopics/types/prostate>
- Pharmacistelink.com (2011). Medicare to pay for \$93,000 prostate cancer drug. Retrieved April 1, 2011 from: <http://www.pharmacistelink.com/index.php/medicaid/29763>
- Stamatiou, K. (2009). Management of Benign Prostatic Hypertrophy-Related Urinary Retention: Current Trends and Perspectives. *Urology Journal*, 6 (23), p. 237-44.
- WebMD (2012). Prostate Enlargement. Retrieved April 4, 2012 from: <http://men.webmd.com/prostate-enlargement-bph/alpha-blockers-for-benign-prostatic-hyperplasia>

Please Read

This publication is intended solely for the use of healthcare professionals taking this course, for credit, from RN.com. It is designed to assist healthcare professionals, including nurses, in addressing many issues associated with healthcare. The guidance provided in this publication is general in nature, and is not designed to address any specific situation. This publication in no way absolves facilities of their responsibility for the appropriate orientation of healthcare professionals.

Hospitals or other organizations using this publication as a part of their own orientation processes should review the contents of this publication to ensure accuracy and compliance before using this publication. Hospitals and facilities that use this publication agree to defend and indemnify, and shall hold RN.com, including its parent(s), subsidiaries, affiliates, officers/directors, and employees from liability resulting from the use of this publication. The contents of this publication may not be reproduced without written permission from RN.com.

Glossary of Terms

Benign Prostatic hyperplasia (beh-NINE prah-STA-tik HY-per-PLAY-zhuh): A benign (not cancerous) condition in which an overgrowth of prostate tissue pushes against the urethra and the bladder, blocking the flow of urine. Also called benign prostatic hypertrophy and BPH.

Dutasteride (duh-TAS-ter-ide): A drug used to treat symptoms of an enlarged prostate gland. It is being studied in the treatment of male hair loss and prostate cancer. Dutasteride blocks enzymes the body needs to make male sex hormones. It is a type of 5-alpha reductase inhibitor. Also called Avodart and GG745.

Finasteride (fi-NAS-ta-ride): A drug used to reduce the amount of male hormone (testosterone) produced by the body.

Gleason Score (GLEE-sun): A system of grading prostate cancer tissue based on how it looks under a microscope. Gleason scores range from 2 to 10 and indicate how likely it is that a tumor will spread. A low Gleason score means the cancer tissue is similar to normal prostate tissue and the tumor is less likely to spread; a high Gleason score means the cancer tissue is very different from normal and the tumor is more likely to spread.

Nanogram: A measure of weight. One nanogram weighs a billion times less than one gram and almost a trillion-times less than a pound.

Prostatitis: Inflammation of the prostate gland.