INDIRANI COLLEGE OF NURSING

LEVEL OF STUDENT - B.SC(N) II yrs

LESSON PLAN ON

DISORDERS OF PROSTATE GLAND

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ICON

HOD PRINCIPAL

PROSTATE DISORDERS

PROSTATITIS

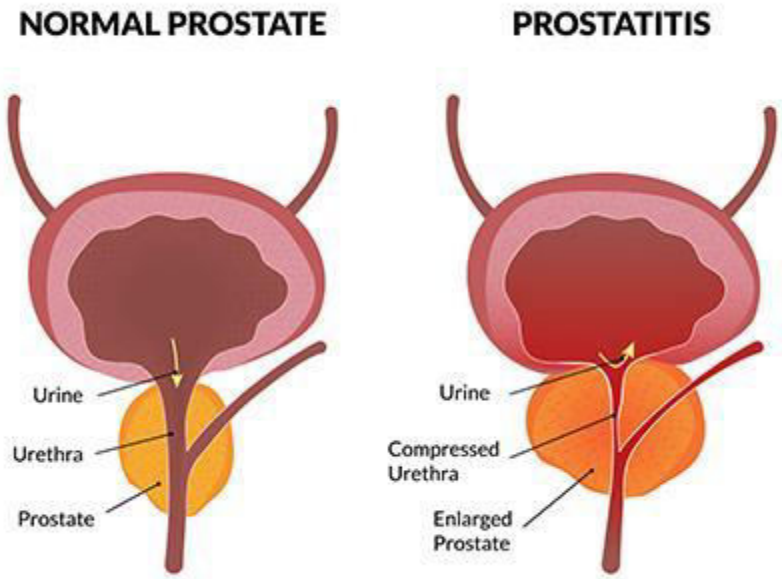
1. **a)** Define prostatitis

   Prostatitis is inflammation of the prostate gland. The inflammation can be due to an infection as well as other various causes.

   b) List out the causes, clinical manifestation and diagnostic findings

Incidences:

- Prostatitis accounts for nearly 2 million visits per year to outpatient urology practices in the United States.
- Ten to twelve percent of all men experience prostatitis symptoms.
- Prostatitis is the most common prostate problem in men under the age of 50.



Classification

- **Acute bacterial prostatitis:** Caused by a bacterial infection, and it typically starts suddenly and may include **flu-like symptoms**. It is the least common of the four types of prostatitis.

- **Chronic bacterial prostatitis:** Described by recurrent **bacterial infections** of the prostate gland. Between attacks, the symptoms might be minor or the patient may even be symptom free; however, it can be difficult to treat successfully.
- **Chronic prostatitis/chronic pelvic pain syndrome:** Chronic prostatitis/chronic **pelvic pain** syndrome can be described as inflammatory or noninflammatory, depending upon the presence or absence of infection-fighting cells in the urine, semen, and prostatic fluid. Often no specific cause can be identified. The symptoms can come and go or remain chronically.
- **Asymptomatic inflammatory prostatitis:** This condition is often diagnosed incidentally during the workup for **infertility** or **prostate cancer**. Individuals with this form of prostatitis will not complain of symptoms or discomfort, but they will have the presence of infection-fighting cells present in semen/prostatic fluid.

Causes and risk factors

Both Acute and Chronic Bacterial prostatitis, generally result from organisms reaching the prostate gland by one of the following routes:

1. Ascending from the urethra(upward)

2. Descending from the bladder (downwards) and invasion via the blood stream or the lymphatic channels. Common organisms are such as: Escherichia coli, Klebsiella, Pseudomonas, Enterobacter, Proteus, Neisseria gonorrhoea and group D streptococci.

Asymptomatic inflammatory prostatitis is usually diagnosed in individuals who have no symptom, but are found to have an inflammatory process in the prostate.

Risk factors

Men of all ages can be affected by prostatitis, but it is more common in young and middle-aged men.

- A prior history of prostatitis
- Having a recent **urinary tract infection**

- Recent use of a urinary catheter or a recent urologic procedure
- **Enlarged prostate** gland
- Engaging in rectal intercourse
- Having a structural or functional urinary tract abnormality
- **Dehydration**
- Local pelvic **trauma** or injury such as from bicycle riding or horseback riding

Signs and symptoms

- Painful, difficult and/or frequent urinating
- **Blood in the urine**
- Groin **pain**, **rectal pain**, **abdominal pain** and/or **low back pain**
- **Fever** and **chills**
- Malaise and body aches
- Urethral discharge
- Painful ejaculation or sexual dysfunction

Diagnostic findings

History collection and physical examination: examination involves a digital rectal examination to palpate the prostate gland and feel for abnormalities of the gland

- Culture of the prostate fluid or tissue and occasionally histological examination of the tissue
- Urine analysis and culture
- MRI and transabdominal ultrasound
- **cystoscopy**, and a prostate biopsy.
- Sometimes a prostate **massage** is performed to compare samples of the prostatic fluid both before and after this intervention has been performed. To perform this procedure, the doctor will **stroke/**massage the prostate gland during the digital rectal examination. Because there is the concern that this procedure can release bacteria into the bloodstream, this test is contraindicated in cases of acute bacterial prostatitis.

Additional tests that may be obtained include a **complete blood count** (**CBC**), an **electrolyte** panel, blood cultures, a swab of urethral discharge if present, and sometimes a prostate-specific antigen (PSA) level. The **PSA test**, which is used as a screening test

c) Describe detail about the management of prostatitis

Treatment for prostatitis depends on the underlying cause and type of prostatitis. Antibiotics are prescribed if the cause is a bacterial infection. All forms of prostatitis require **pain** control if needed, treatment, relief of complications and side effects, and need to be closely monitored by your doctor. In certain instances, some people with prostatitis may need to be hospitalized for treatment.

- **Antibiotics**
- **Anti-inflammatory medications**
- **Alpha-blockers:** By relaxing the muscle fibers around the bladder and prostate gland, alpha-blockers may decrease your urinary symptoms and help to empty the bladder.

Natural home remedies for prostatitis include:

- Warm sitz baths
- Avoid **alcohol**, **caffeine**, and spicy foods.
- **Prostate massage:** In a few studies, prostate massage has been shown to decrease symptoms in some patients with chronic nonbacterial prostatitis.
- **Lifestyle changes:** If you cycle or ride horses, it is recommended to suspend this activity until improve.
- Although there are many **herbal preparations** available, there is no current evidence that herbal remedies are definitely helpful with prostatitis.
- **Acupuncture** has shown a decrease in symptoms for some people who suffer from prostatitis.

Nursing diagnosis

- Hyperthermia related to infectious process as evidenced by fever, discomfort

- Acute pain related to prostatic inflammation as evidenced by pain, difficulty in urine and in ejaculation
- Chronic pain related to chronic prostatitis, chronic pelvic syndrome .
- Deficient knowledge related to disease cause, clinical manifestation, and treatment

There are several potential **complications** of prostatitis, which may include the following:

- acute prostatitis becoming chronic prostatitis,
- bladder outlet obstruction or **urinary retention**,
- **infertility**,
- **abscess** of the prostate gland,
- spreading of the infection to the blood stream (**bacteremia**/**sepsis**), and rarely
- Death

2. BENIGN PROSTATIC HYPERPLASIA:

a) Define BPH

- **Benign prostatic hyperplasia (BPH)** is the enlargement, or hypertrophy, of the prostate gland.
- The prostate gland enlarges, extending upward into the bladder and obstructing the outflow of urine. Incomplete emptying of the bladder and urinary retention leading to urinary stasis may result in hydronephrosis, hydroureter, and urinary tract infections (UTIs).
- The cause is not well understood, but evidence suggests hormonal involvement.
- BPH is common in men older than 40 years.
- It can cause bothersome lower urinary tract symptoms that affect quality of life by interfering with daily normal activities and sleep pattern.

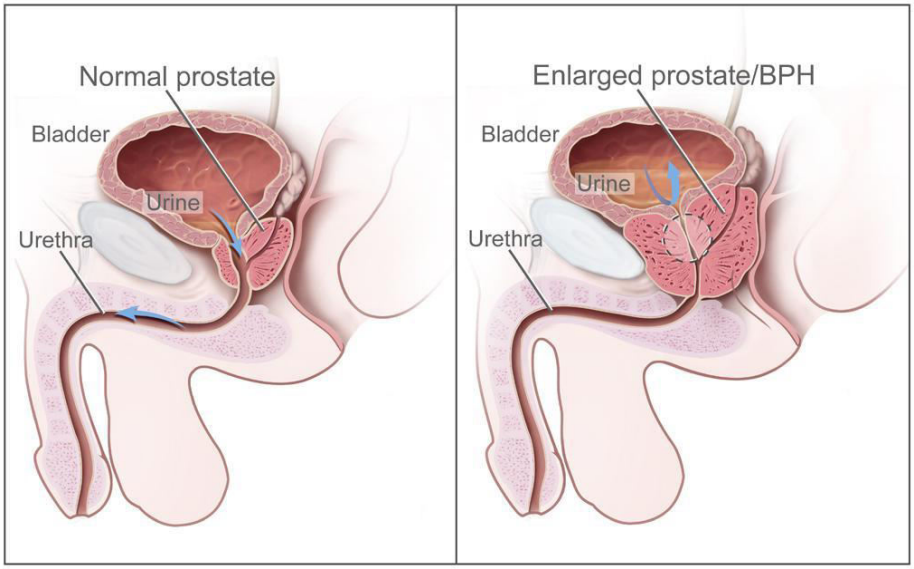
b) Enlist the causes, clinical manifestation and diagnostic finding

Statistics and Epidemiology

Here are the current statistics for BPH:

- BPH typically occurs in men older than 40 years of age.
- By the time they reach 60 years of age, **50%** of men have BPH.

- BPH affects as many as **90%** of men by 85 years of age.
- BPH is the second most common cause of surgical intervention in men older than 60 years of age.



Causes

The cause of BPH is not well understood, but testicular androgens have been implicated.

- **Elevated estrogen levels.** BPH generally occurs when men have elevated estrogen levels and when prostate tissue becomes more sensitive.
- **Smoking.** Smoking increases the risk of acquiring BPH.
- **Reduced activity level.** A sedentary lifestyle could also lead to the development of BPH.
- **Western diet.** A diet high in animal fat and protein and refined carbohydrates while low in fiber predisposes a man to BPH.

Pathophysiology

The pathophysiology of BPH is as follows:

- **Resistance.** BPH is a result of complex interactions involving resistance in the prostatic urethra to mechanical and spastic effects.
- **Obstruction.** The hypertrophied lobes of the prostate may obstruct the bladder neck or urethra, causing incomplete emptying of the bladder and urinary retention.
- **Dilation.** Gradual dilation of the ureters and kidneys can occur.

Hormonal or age factor

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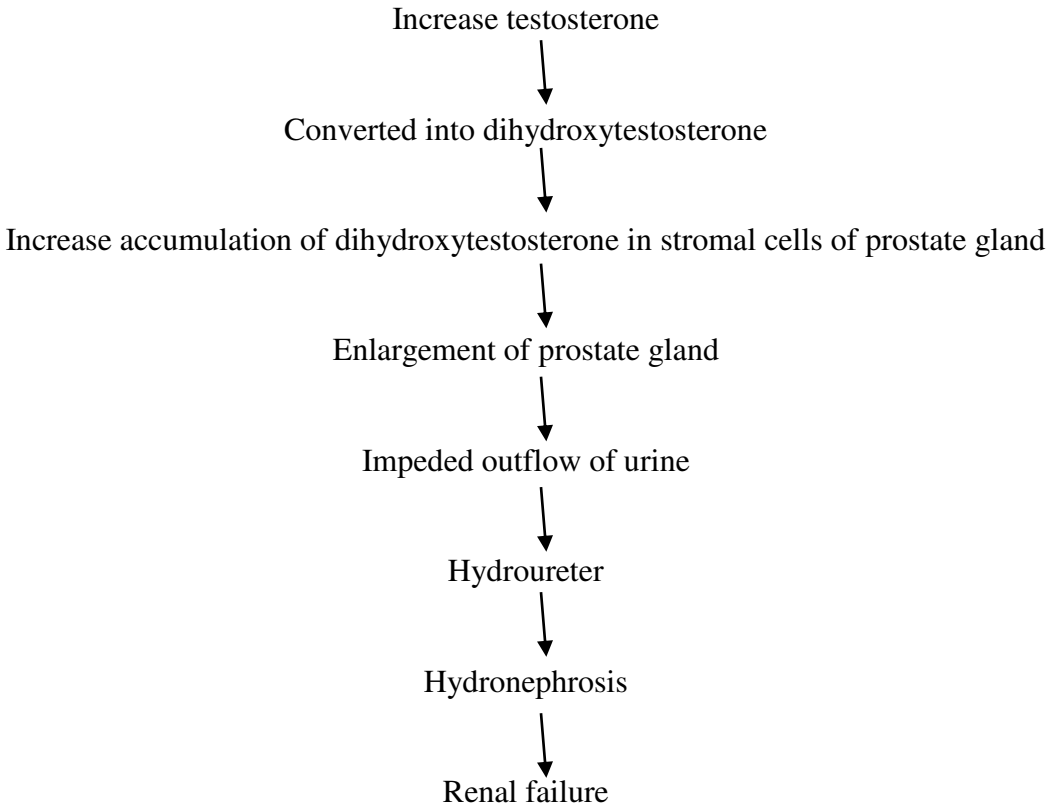


Clinical Manifestations

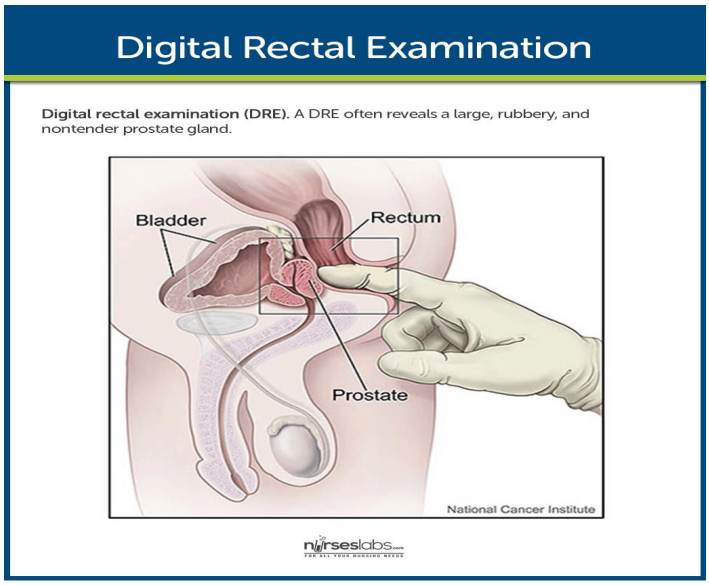
BPH may or may not lead to lower urinary tract symptoms; if symptoms occur, they may range from mild to severe.

- **Urinary frequency.** Frequent trips to the bathroom to urinate may be an early sign of a developing BPH.
- **Urinary urgency.** This is the sudden and **immediate** urge to urinate.
- **Nocturia.** Urinating frequently **at night** is called nocturia.
- **Weak urinary stream.** Decreased and intermittent force of stream is a sign of BPH.
- **Dribbling urine.** Urine dribbles out after urination.

Straining. There is presence of abdominal straining upon urination.

Assessment and Diagnostic Findings

There are several ways to diagnose benign prostatic hypertrophy.



- **Digital rectal examination (DRE).** A DRE often reveals a **large, rubbery, and nontender** prostate gland.
- **Urinalysis.** A urinalysis to screen for **hematuri**a and **UTI** is recommended.
- **Prostate specific antigen levels.** A PSA level is obtained if the patient has at least a 10-year life expectancy and for whom knowledge of the presence of prostate cancer would change management.
- **Urinalysis:** Color: Yellow, dark brown, dark or bright red (bloody); appearance may be cloudy. pH 7 or greater (suggests infection); bacteria, WBCs, RBCs may be present microscopically.
- **Urine culture:** May reveal Staphylococcus aureus, Proteus, Klebsiella, Pseudomonas, or Escherichia coli.
- **Urine cytology:** To rule out bladder cancer.
- **BUN/Cr:** Elevated if renal function is compromised.
- **Prostate-specific antigen (PSA):** Glycoprotein contained in the cytoplasm of prostatic epithelial cells, detected in the blood of adult men. Level is greatly increased in prostatic cancer but can also be elevated in BPH. Note: Research suggests elevated PSA levels with a low percentage of free PSA are more likely associated with prostate cancer than with a benign prostate condition.
- **WBC:** May be more than 11,000/mm3, indicating infection if patient is not immunosuppressed.

- **Uroflowmetry:** Assesses degree of bladder obstruction.
- **IVP with post voiding film:** Shows delayed emptying of bladder, varying degrees of urinary tract obstruction, and presence of prostatic enlargement, bladder diverticula, and abnormal thickening of bladder muscle.
- **Voiding cystourethrography:** May be used instead of IVP to visualize bladder and urethra because it uses local dyes.
- **Cystometrogram:** Measures pressure and volume in the bladder to identify bladder dysfunction unrelated to BPH.
- **Cystourethroscopy:** To view degree of prostatic enlargement and bladder-wall changes (bladder diverticulum).
- **Cystometry:** Evaluates detrusor muscle function and tone.
- **Transrectal prostatic ultrasound:** Measures size of prostate and amount of residual urine; locates lesions unrelated to BPH.

c) Discuss detail about medical, surgical and nursing management of BPH

Medical Management

The goals of medical management of BPH are to improve the quality of life and treatment depends on the severity of symptoms.

- **Catheterization.** If a patient is admitted on an emergency basis because he is unable to void, he is immediately catheterized.
- **Cystostomy**. An incision into the bladder may be needed to provide urinary drainage.

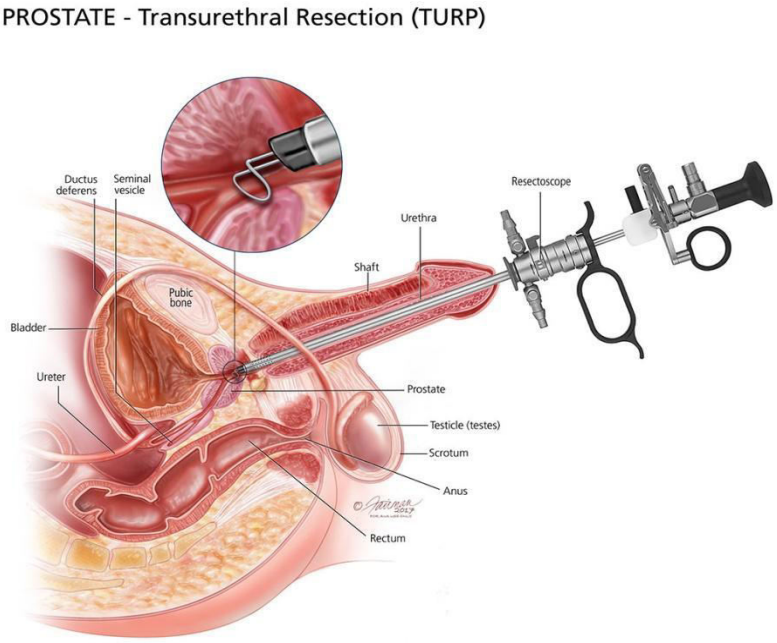
Pharmacologic Management

- **Alpha-adrenergic blockers** (eg, alfuzosin, terazosin), which relax the smooth muscle of the bladder neck and prostate, and 5alpha reductase inhibitors.
- Hormonal manipulation with **antiandrogen agents** (finasteride [Proscar]) decreases the size of the prostate and prevents the conversion of testosterone to dihydrotestosterone (DHT).
- Use of **phytotherapeutic agents** and other dietary supplements (Serenoa repens [saw palmetto berry] and Pygeum africanum [African plum]) are not recommended, although they are commonly used.
- One herbal medication effective against BPH is Saw Palmetto.

Surgical Management

Other treatment options include minimally invasive procedures and resection of the prostate gland.

- **Transurethral microwave heat treatment.** This therapy involves the application of **heat** to prostatic tissue.
- **Transurethral needle ablation (TUNA).** TUNA uses low-level **radio frequencies** delivered by thin needles placed in the prostate gland to produce localized heat that destroys prostate tissue while sparing other tissues.
- **Transurethral resection of the prostate (TURP).** TURP involves the surgical removal of the inner portion of the prostate through an endoscope inserted through the urethra.
- **Open prostatectomy.** Open prostatectomy involves the surgical removal of the inner portion of the prostate via a suprapubic, retropubic, or perineal approach for large prostate glands.



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Nursing Management

Nursing management of a patient with BPH includes the following:

Nursing Assessment

Nursing assessment focuses on the health history of the patient.

- **Health history.** The health history focuses on the urinary tract, previous surgical procedures, general health issues, family history of prostate diseases, and fitness for possible surgery.
- **Physical assessment.** Physical assessment includes digital rectal examination.

Nursing Diagnosis

Based on the assessment data, the appropriate nursing diagnoses for a patient with BPH are:

- **Urinary retention** related to obstruction in the bladder neck or urethra.
- **Acute pain** related to bladder distention.
- **Anxiety** related to the surgical procedure.

Nursing Care Planning & Goals

The goals for a patient with BPH include:

- Relieve acute urinary retention.
- Promote comfort.
- Prevent complications.
- Help patient deal with psychosocial concerns.
- Provide information about disease process/prognosis and treatment needs.

Nursing Interventions

Preoperative and postoperative nursing interventions for a patient with BPH are as follows:

- **Reduce anxiety.** The nurse should familiarize the patient with the preoperative and postoperative routines and initiate measures to reduce anxiety.
- **Relieve discomfort.** Bed rest and analgesics are prescribed if a patient experiences discomfort.
- **Provide instruction.** Before the surgery, the nurse reviews with the patient the anatomy of the affected structures and their function in relation to the urinary and reproductive systems.
- **Maintain fluid balance.** Fluid balance should be restored to normal.

Evaluation

- Reduced anxiety.
- Reduced level of pain.
- Maintained fluid volume balance postoperatively.
- Absence of complications.

Discharge and Home Care Guidelines

The patient and the family require instructions about how to promote recovery.

- **Instructions.** The nurse provides written and oral instructions about the need to monitor urinary output and strategies to prevent complications.
- **Urinary control.** The nurse should teach the patient exercises to regain urinary control.
- **Avoid Valsalva maneuver.** The patient should avoid activities that produce Valsalva maneuver like straining and heavy lifting.
- **Avoid bladder discomfort.** The patient should be taught to avoid spicy foods, alcohol, and coffee.
- **Increase fluids.** The nurse should instruct the patient to drink enough fluids.

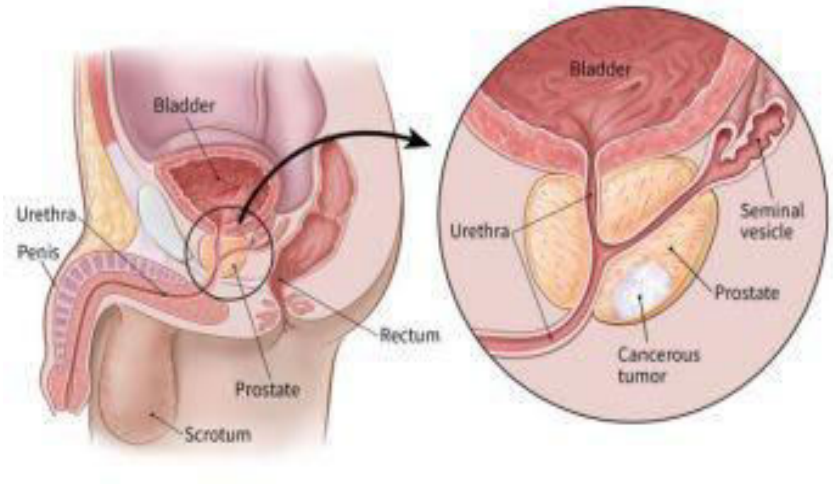
Prostate Cancer

3. BRIEF A SHORT NOTE ON PROSTATE CANCER

- Cancer of the prostate is the most common cancer in men. Is the second leading cause of carcinoma in men older than age 65.
- The cause of the prostate cancer is unknown; there is an increased risk for people with a family history of the disease, and the influence of dietary fat, serum testosterone, vasectomy, and industrial toxins is under investigation.
- Most prostate cancers are adenocarcinoma and are palpable on rectal examination because they are arise form the posterior portion of the gland.
- Prostate cancer usually multifocal, slow growing, and can spread by local extension, by lymphatics or through the bloodstream.
- Complications include bone metastasis leading to vertebral collapse, spinal cord compression, and pathologic fractures, or spread to urinary tract to pelvic lymph nodes.

Risk factors

• Risk factors include increasing age, a family history, and possibly a high-fat diet. Endogenous hormones, such as androgens and estrogens, also may be associated with the development of prostate cancer.



Assessment

1. Usually asymptomatic in early stage. First symptoms are caused by obstructed urinary flow, including hesitancy and straining on voiding, frequency, nocturia, reduced size and force of urinary stream.
2. A firm to hard nodule may be felt on rectal examination of the prostate.
3. Pain in lumbosacral area radiating to hips and down leg (from bone metastases).
4. Perineal and rectal discomforts.
5. Anemia, weight loss, weakness, nausea, oliguria (from uremia).
6. Hematuria
7. Low extremity edema – occurs when pelvic node metastases compromise when venous return.

Diagnostic Evaluation

1. Needle biopsy (through anterior rectal wall or through perineum) for histologic study of biopsy tissue or aspiration for cytologic study.
2. Transrectal ultrasonography delineates tumor.
3. Prostate-specific antigen (PSA)
4. Metastatic workup may include skeletal x-ray, bone scan, and CT or MRI to detect local extension, bone, and lymph node involvement.

Therapeutic Interventions

1. In many patients older than age 70, no treatment may be indicated because the cancer may be slow growing and will not be the cause of death. Instead, the patients should be followed closely with periodic serum PSA testing and examined for evidence of metastasis.

2. In advanced prostatic cancer not responsive to treatment, palliative measures include analgesics and opioids to relieve pain, short course of radiation therapy and transurethral resection of the prostate.
3. Extreme beam radiation using linear accelerator focused on the prostate.
4. Interstitial radiation (brachytherapy).

Pharmacologic Interventions

1. Hormone manipulation deprives tumor cells of androgens or their by products and thereby alleviates symptoms and retards progress of disease.
2. Analogs of luteinizing hormone-releasing hormone (LNRH), such as leuprolide, reduce testosterone levels.
3. Antiandrogen drugs that blocks androgen action directly at the target tissues and block androgen synthesis within the prostate gland.
4. Combination therapy with LHRH analogs and flutamide blocks the action of all circulating androgen.
5. Complications of hormonal manipulation include hot flashes, nausea, and vomiting, gynecomastia, and sexual dysfunction.
6. Radiation Therapy • Teletherapy (external beam radiation therapy [EBRT]): treatment option for patients with low risk prostate cancer • Brachytherapy (internal implants): commonly used mono- therapy treatment option for early, clinically organ-confined prostate cancer

Surgical Interventions

1. Radical prostatectomy – removal of entire prostate gland, prostatic capsule, and seminal vesicles, may include pelvic lymphadenectomy.
2. Cryosurgery freezes prostate tissue, killing tumor cells without prostatectomy.
3. Bilateral orchiectomy (removal of testes) result in reduction of the major circulating androgen, testosterone, as a palliative measure to reduce symptoms and progression.

Nursing Interventions

1. Assess pain control. Make sure that the patient is not undermedicated.
2. Teach relaxation techniques such as imagery, music therapy, and progressive muscle relaxation as adjunct to pain control.

3. Employ safety measures to prevent pathologic fractures, such as prevention of falls if bone metastasis is present.
4. To reduce anxiety, give repeated explanations of diagnostic tests and treatment options, and help the patient gain some feeling of control over disease and decisions.
5. Inform the patient that decreased libido expected after hormonal manipulation therapy, and that impotence may result from some surgical procedures and radiation.
6. Suggest options such as sexual counseling, learning other options of sexual expression, and consideration of penile implant.
7. Emphasize the importance of follow-up for check of PSA levels and evaluation for disease progression.
8. Teach the patient to administer hormonal agents intramuscularly or subcutaneously as indicated.
9. If bone metastasis has occurred, encourage safely measures around the home to prevent pathologic fractures, such as removal of throw rugs, using handrail on stairs, and using nightlights.
10. Advise the patient to report symptoms of worsening urethral obstruction, such as increased frequency, urgency, hesitancy, and urinary retention.
11. Encourage all men to seek medical screening for prostate cancer.

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