CHAPTER

2

Medical Surgical and Nursing Management of Human Diseases

மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உணின்

No medicine is necessary for him who eats after assuring (himself)
that what he has (already) eaten has been digested.

Learning Objectives

At the end of this chapter, the students will be able to:

- gain knowledge about the conditions related to Nursing Or Medical and Surgical
- know about definition of the disease condition
- observe the causes of the specific diseases
- understand the signs and symptoms of the diseases
- acquire knowledge about the methods of the diagnostic evaluations
- learn about the management of the specific disease conditions
- list out the complications of the diseases
- demonstrate the skills in Nursing management
- know about the prevention and promotion of the health condition

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Introduction

Medical and Surgical Nursing is a specialized and skilled branch of nursing. It can be considered to be the foundation of nursing because it has served as a launch pad to the several interdisciplinary advanced specializations in several vital areas of nursing, such as cardiology, neurology, etc

Medical-Surgical nursing is a specialized branch of nursing that involves the nursing care of adult patients, whose conditions or disorders are treated pharmacologically and with surgical procedures. The major beneficiaries of health care in India have been adult clients. The special knowledge required in medical surgical aspect for nurses is to provide quality care. Medical and surgical nursing went unrecognized for several years. But now it has been developed by experts serve as guide to the nursing practice.

Medical-Surgical Nursing provides the student with opportunities to apply the nursing knowledge in the care of individuals and families experiencing alterations in system stability related to the acute and chronic conditions

2.1 Infection and Infestation

Infection

In Integumentary system, skin, hair, and nails are prone to different types of infections and infestations which needs to be diagnosed early and treated promptly to prevent spread.

Definition: Infection is defined as the invasion and multiplication of microorganisms such as bacteria, viruses and parasites that are not normally present within the body.

Different types of skin infections according to the causative organism:

1. **Bacterial skin infections** - Bacterial skin infections often begin as small, red bumps that slowly increase in size. Some bacterial infections are mild and easily treated with topical antibiotics, some infections require an oral antibiotic and good personal hygiene. Bacterial skin infections includes Cellulitis, Impetigo, Boils and Leprosy.
2. **Viral skin infections** - Skin infection are caused by a virus are called Viral skin infection.

Common Viral Skin infection include: Herpes Zoster (Akki). Chickenpox, Warts, Measles and Molluscum contagiousum.

3. **Fungal skin infections** - Skin infections which are caused by fungus, are mostly to develop in damp areas of the body, such as the groin, nail and armpit. Common fungal infections are Athelete's foot, Fungal Nail, Oral thrush and Diaper rash.

Infestation

Infestations can be classified as either external or internal with regards to the parasites' location in relation to the host.

External or ectoparasitic infestation is a condition in which organisms live primarily on the surface of the host and includes mites, ticks, head lice and bed bugs.

An internal (or endoparasitic) infestation is a condition in which organisms live within the host and includes those involving worms

Worm Infestation

Worm infestations are long-term diseases that produce few symptoms in their early stages and sometimes serious effects at well developed stages or may be quite fatal at times.

Worms are generally classified as

1. **Round Worms:** is also known as "Ascaris"
2. **Pin worms:** Is also known as "threadworm"
3. **Hook worms**
4. **Flat Worms:** tape worm (teniasis)

Clinical manifestation of worm infestation:

Abdominal pain, nausea, loss of appetite, sleeplessness, irritability, anemia and diarrhea

Diagnosis

History collection: history of passage of worms

Stool examination: It is done to detect which type of worm is present

Blood examination

Management

Anthelmintic

Albendazole (15mg/kg) or Mebandazole (100mg) twice Daily for 3 days irrespective of patients age.

Correction of anemia should be done with iron therapy

Complications - Intestinal obstruction, Perforation, Jaundice, Appendicitis, Pancreatitis, Ascaris encephalopathy, Liver abscess, Peritonitis and Protein loss (kwashiorkar)

Preventive Measures

For Round Worm

- Prevention of round worm infestation can be done by interrupting its transmission
- Sanitary disposal of human excreta
- Reduction of feacal contamination of the soil
- Provision of safe drinking water, food hygiene, good personal hygiene, improving habits of hand wash before and after defecation, avoidance of open field defecation

Pin Worm Prevention

The preventive measures include maintenance of personal hygiene, careful hand washing with soap and water after defecation and before meal, treatment of all infected family members

Hook Worm Prevention

- avoiding contact of contaminated soil by using foot wear
- use of sanitary latrine for the sanitary disposal of feces to prevent soil pollution
- change in farming practice, that is not to use raw feces or untreated sewage as fertilizer

Tapeworm Prevention

Treatment of infected person, meat inspection, consumption of meat with proper cooking, adequate sewage treatment and disposal creating awareness about preventive aspects by health education

Scabies

Definition

Scabies is an infestation caused by itch mite due to poor personal hygiene.

Causes

- Infestation by the itch mite otherwise called as Sarcoptes Scabiei"
- skin contact with affected person (physical contact)
- Direct contact with skin, clothing and furniture containing infected mites.

Signs and Symptoms

- **ITCHING:** Itching is a common symptom, often worse at night and can be severe and intense.
- **RASH:** When the mite burrows into the skin it forms rashes.
- **SORES:** These occur in infested areas where a person has scratched at the skin.
- **THICK CRUSTS:** Crusted scabies, is a form of severe scabies.

The most common site of infection

- In between the finger webs
- Around finger nails
- Armpits
- Waist lines
- Inner parts of the wrists
- Inner elbow
- Soles of the feet
- Breasts
- Genitalia

Diagnosis based on

- Onset of generalized pruritis (itching) and the characteristic eruptions
- Itchy burrows and vesicles
- Microscope examination
- Dermatoscopy
- Digital Photography

Management

Medical management: Tropical application

- Permethrin 5 % Cream/lotion
- Benzyl Benzoate 10 – 25% lotion
- Crotamition 10% ointment
- Lindane 1% lotion/cream
- Oral medication according to the severity.

Nursing management

- Maintenance of personal hygiene
- Isolation - separate clothing and toiletries.
- Necessary care to be given to the family members
- Topical treatment must be applied to the entire skin surface.
- After completion of treatment patients should use fresh, clean bedding and clothing.
- Other family members and Close personal contacts should be treated at the same time.
- Teach them to wash all linens, towels, and clothing used by the patient during the 2 days before treatment in hot water and dry them in sunlight.

Psoriasis

Psoriasis is one of the commonest skin disorders. Psoriasis is a chronic autoimmune skin disease. In auto immune disease immune system of our body attacks our own tissues, which leads to the rapid build-up of skin cells and causes scaling on the skin's surface. Psoriasis may begin at any age, but most diagnoses occur in adulthood. The average age of onset is between 15 to 35 years old. According to the World Health Organization (WHO) some studies estimate that about 75 percent of psoriasis cases are diagnosed before age 46.

Definition

Psoriasis is an inflammatory and proliferative immune mediates disease of the skin that results in a rapid turnover of the skin cells.

Types

- Plaque type Psoriasis
- Guttate Psoriasis, Pustular Psoriasis
- Inverse Psoriasis
- Erythrodermic Psoriasis
- Nail Psoriasis
- Psoriasis of the Scalp
- Palmar-Plantar Psoriasis
- Psoriatic Arthritis
- Systemic diseases in Psoriasis

Causes

The exact cause of psoriasis is not fully undestood.

Immune system: Autoimmune conditions are the result of the body cell reacting against its own cells.

Genetics: Approximately 35 to 50 percent of people genetically inherit the condition.

Triggers

Food: Whole milk, citrus fruits, gluten and fatty foods.

Drugs: Lithium, Non Steroidal Anti-Inflammatory Drugs (NSAIDs), malaria drugs, beta-blockers, tetracycline etc.

Weather: Excess sun exposure, Cold, dry weather

Infections

Others: Alcohol, Smoking, Stress, Obesity, Scratches, bites and Skin injury.

Risk Factors

- Family history
- Viral and bacterial infection

- Stress
- Obesity
- Smoking

Signs and Symptoms

- Red, raised, inflamed patches of skin
- Whitish-silver scales or plaques on the red patches
- Dry skin that may crack and bleed
- Soreness around patches
- Itching and burning sensations around patches
- Thickened, pitted nails
- Painful, swollen and stiff joints

Diagnosis

- Nose specific blood test or diagnostic procedures
- Physical Examination
- Skin Biopsy or scraping

Management

Psoriasis has no cure. Treatments aim is

- to reduce inflammation and scales
- to slow the growth of skin cells
- to remove plaques.

Topical treatments: Creams and ointments applied directly to the skin can be helpful for reducing mild to moderate psoriasis.

- Steroid creams
- Vitamin D3 creams
- Phototherapy (ultra violet light).
- Immune system suppressing medications.
- Photo chemotherapy (PUEA).

Nursing Management

- Assist patient with daily tub bath to soften scales and plaques.
- Apply topical preparation after bath and scale removal.
- Advise patient to wear goggles during phototherapy.
- Encourage patient to follow up.
- Encourage patient to try to identify triggers.
- Teach patient to avoid direct sun exposure.
- Advice patient to use good lubricants to prevent drying and cracking of skin.

Complications

- Psoriatic arthritis
- Obesity
- Type 2 Diabetes
- Hyper tension
- Cardio Vascular disease
- Parkinson' Disease

2.2 Myocardial Infarction (MI)

A heart attack is a life-threatening condition that occurs when blood flow to the heart muscle is abruptly cut off, causing tissue damage. This is usually the result of a blockage in one or more of the coronary arteries. It occurs as a result of sustained ischemia, causing irreversible myocardial cell death (necrosis). 80% to 90% of all acute Myocardial Infarctions (MIs) are secondary to thrombus formation. Acute myocardial infarction is the medical name for a heart attack.

Definition

Myocardial infraction refers to a dynamic process by which one or more regions of the heart experience a severe and prolonged decrease in oxygen supply because of insufficient coronary blood flow, subsequently necrosis or death to the myocardial tissue occurs.

Types

1. Non-ST segment elevation myocardial infarction or heart attack (NSTEMI)

2. ST segment elevation myocardial infarction or heart attack (STEMI).

Causes And Risk Factors

- Bad cholesterol, Saturated fats, Trans fat - intake
- Obesity - cause of 20% cases
- Genetics
- High Blood Pressure (hypertension)
- High Triglyceride level
- Diabetes and high blood sugar level
- Smoking causes above 36% cases
- Lack of exercise linked 7 to 12% cases
- The use of certain illegal drugs including cocaine and amphetamines
- A history of preeclampsia or high Blood pressure during pregnancy

Signs and Symptoms

The classic symptoms of a heart attack are chest pain and shortness of breath, the symptoms can be quite varied.

The most common symptoms of a heart attack include:

- Prolonged cardiac pain (severe, sharp stabbing, radiating to neck, shoulders and back)
- Breathlessness
- Collapse / Syncope / Fainting
- Pallor
- Hypotension (or) Hypertension
- Disorientation
- Sweating
- Anxiety
- Tachycardia
- Nausea and Vomiting

Diagnosis

- ECG (Electro Cardio Gram)
- X-ray Chest.
- Serum Cardiac Markers Blood tests such as Troponin and Creatine KinaseMB (CK-MB).
- Angiogram with coronary catheterization to look for areas of blockage in the arteries.
- Echocardiography
- Coagulation Studies
- Nuclear imaging

Medical Management

- Made the patient in a comfortable bed and provide complete bed rest
- Administration of oxygen
- Starting IV line
- Monitoring ECG
- Administration of analgesics (opiates)
- Oral antianginal drug.
- Thrombolytic therapy.
- Anti-coagulants.
- B-adrenergic receptor antagonist.
- Anti-arrhythmic.
- Antiplatelet.

Surgical Management

- Percutaneous Transluminal Coronary Angioplasty (PTCA)
- Coronary Artery Bypass Grafting (CABG)

Nursing Management

- Vital Signs
- Provide comfortable bed.

- Oxygen administration
- Start Intra Venous (IV) line
- Intake and output chart

Complications

- Thromboembolism
- Dysrhythmias
- Heart failure
- Cardiogenic shock
- Papillary muscle dysfunction leads to mitral regurgitation
- Ventricular Aneurysm
- Pericarditis
- Acute Circulatory failure

2.3 Congestive Cardiac failure

Heart failure, sometimes known as congestive heart failure, occurs when the heart muscle doesn't pump blood. In certain conditions, such as narrowed arteries in the heart (coronary artery disease) or high blood pressure, gradually the heart become too weak and failed to pump efficiently.

Definition

Congestive Cardiac Failure (CCF) Cardiac failure often referred to as congestive heart failure is the inability of the heart to pump sufficient blood to meet the need of the tissues for oxygen and nutrients.

The term congestive heart failure is most commonly used when reopening to left sided and right sided failure.

Common types

Left-sided CHF is the most common type of CHF. It occurs when the left ventricle doesn't properly pump blood out to the body.

There are two kinds of left-sided heart failure:

Left-sided heart failure

- **Systolic heart failure** occurs when the left ventricle fails to contract normally.
- **Diastolic failure**, or diastolic dysfunction, happens when the muscle in the left ventricle becomes stiff.

Right-sided CHF occurs when the right ventricle has difficulty pumping blood to the lungs. Blood backs up in the blood vessels, which causes fluid retention in the lower extremities, abdomen, and other vital organs.

Causes

- Cardiac muscle disorder
- Coronary atherosclerosis
- Systemic or pulmonary hypertension
- Systemic factors
- Degenerative diseases of the myocardium
- Stenosis of a semilunar valve.
- Hemorrhage
- Anemia

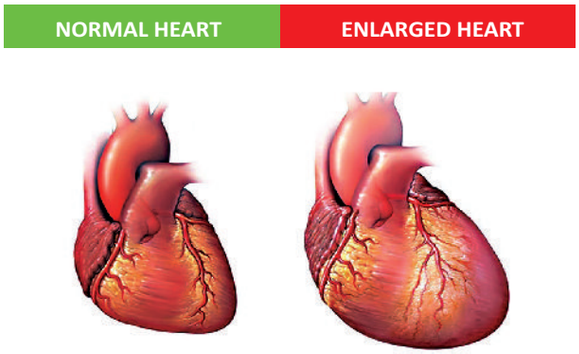
Risk factors

- Hypertension and diabetes
- Alcohol and smoking
- Use of cardio toxic
- Cocaine abuse drugs

Signs and Symptoms

- Pulmonary edema
- Dyspnea
- Cough
- Shortness of breath
- Congested lungs
- Sodium and Fluid retention
- Low perfusion
- Dizziness
- Fatigue and weakness
- Rapid or irregular heart beats

- Oliguria
- Nacturia



The difference between the normal and enlarged heart

Diagnosis

- Echocardiography.
- ECG
- X-ray chest
- Blood test
- Cardiac catheterization
- Arterial Blood Gas analysis (ABG)

Management

- Pharmacologic therapies include the use of diuretics, vasodilators, inotropic agents, anticoagulants, beta-blockers.
- Invasive therapies for heart failure include electro physiologic intervention
- Cardiac resynchronization therapy (CRT)
- Pacemakers
- Implantable cardioverter-defibrillators (ICDs); revascularization procedures

Nursing management

- Provide comfortable bed
- Oxygen administration
- Start Intra Venous (IV) line
- Vital signs

Diet therapy

- Restricted sodium
- Restricted fluids

Complications

- Intractable heart failure
- Cardiac arrhythmias
- Myocardial failure
- Cardiac arrest
- Pulmonary infraction
- Pneumonia

Prevention

Lifestyle changes can help to prevent heart failure include:

- No smoking
- Controlling certain conditions, such as high blood pressure and diabetes
- Staying physically active
- Eating healthy foods
- Maintaining a healthy weight
- Reducing and managing stress

2.4 Fracture

Bone fracture is a medical condition where the continuity of the bone is broken. A significant percentage of bone fractures occur because of high force impact or stress. A fracture caused by medical conditions which weakens the bone (e.g Osteoprosis) is known as a **pathological fracture**. A crack (not only a break) in the bone is also known as a fracture. Fractures can occur in any bone in the body.

Definition

A fracture is a breakage in the continuity of bone and is defined according to type and extended.

Types

1. **Complete fracture** involves the break across the entire cross section of the bone and is frequently displaced.
2. **Incomplete Fracture:** The break occurs only through part of the cross section of the bone.
3. **Open fracture:** The skin may be pierced by the bone or by a blow that breaks the skin at the time of the fracture. The bone may or may not be visible in the wound.
4. **Closed Fracture:** Does not produce a break in the skin.
5. **Pathologic fracture**: A pathologic fracture (also called insufficiency fracture) is a bone fracture caused by disease that led to weakness of the bone structure.

Pattern of fracture

- **Transverse fracture:** This type of fracture has a horizontal fracture line.
- **Oblique fracture:** This type of fracture has an angled pattern.
- **Comminuted fracture:** In this type of fracture, the bone shatters into three or more pieces.
- **Other types:** Avulsion fracture, Compression (crush) fracture, Greenstick fracture, Hairline fracture, Impacted fracture, Intra articular fracture, Longitudinal fracture, Spiral fracture, Stress fracture, Torus (buckle) fracture.

Causes

Most fractures are caused by

- Fall
- Automobile accident.
- Osteoporosis, infection
- Tumor
- Direct violence
- Bending forces
- Crushing force
- Sudden twisting motion.

Signs and symptoms

- Pain, swelling, bruising, discoloration of the skin
- Angulation
- False motion
- deformity
- Shortening and Crepitus
- Tenderness
- The patient is unable to put weight on the injured area
- The patient cannot move the affected area
- Pale and clammy skin
- Dizziness

Diagnosis

1. History of incident whether fall, accident, trauma should be asked to patient or witnesses.
2. Physical examination, identify signs and symptoms, and make a diagnosis.
3. X-ray, CT scans, MRI done as required.

The treatment of fractures

Goals of fracture treatment

- Restore fracture fragments to their normal anatomic position (Reduction)
- Maintain reduction in place until heating occurs (Immobilization)
- Promote regaining of normal function and strength of the affected part (rehabilitation)

Methods for obtaining fracture reduction

- Closed reduction
- Traction
- Open reduction

Methods for maintaining immobilization

External Devices

- Splint
- Brace
- Case
- External fixator
- Bandage

Internal devices

- Nails
- Plates
- Screws
- Wires
- Rods

Maintaining and Restoring function

- Maintain reduction and immobilization
- Elevate to minimize swelling
- Control anxiety and pain
- Isometric and muscle setting exercise

Complications of fractures

- Fat embolism
- Infection
- Hypovolemic or traumatic shock
- Delayed healing
- Nerve or blood vessel damage
- Arthritis
- Unequal leg length
- Mal union or non union

Nursing Management of fractures

- Bed rest
- Vital signs
- Skin care
- Prevent infection
- Intake and output chart
- Encouraging mobility
- Providing adequate nutrition.

Surgical Management

- Open reduction
- Closed reduction
- Internal fixation
- Bone graft
- Arthroplasty
- Joint replacement
- Amputation

2.5 Osteoporosis

Osteoporosis is a disease where increased bone weakness increases the risk of breakage of bone. Osteoporosis literally leads to abnormally porous bone that is compressible, like a sponge. It is the most common reason for a broken bone among the elderly. The most common site include the vertebrae in the spine, the bones of the forearm, and the hip.

Definition

Osteoporosis is a condition characterized by a decrease in the density of bone, decreasing its strength and resulting in fragile bones.

Causes

1. Genetic factor
2. Vitamin D and Deficiency factor
3. Post Menopausal women but may also occur in men
4. Chronic illness e.g. Malabsorption syndromes and Renal failures
5. Chemotherapy such as Cortico steroids
6. Cigarette smoking, alcohol consumption
7. Lack of exercise
8. Body type- small frame / short stature, low body fat.

Signs and Symptoms

1. Asymptomatic until later stages
2. Fracture after minor trauma may be first indications
3. Most frequent fractures associated with Osteoporosis include fractures of the distilled radius, spinal vertebrae, humorous pelvis

4. May have vague complaints related to aging process (Stiffness pain, weakness)
5. Estrogen deficiency may be noted.

Diagnosis

1. X-ray
2. Scan to measure Bone Mineral Density (BMD).
3. Bone density scanning uses a type of X-ray technology known as Dual-Energy-X-ray Absorptiometry (DEXA) and bone densitometry.
4. Serum Calcium phosphate
5. Serum bone matrix Glaprotein is elevated.
6. Bone biopsy shows thin porous.

Nursing Management

- Adequate intake of calcium and Vitamin D.
- Major food sources are dairy products egg yolks, fish and liver.
- Weight bearing exercise
- Hormone Replacement Therapy (HRT)
- Prevention of falls.
- Encourage exercise for all age groups.
- Provide dietary education for daily intake of calcium and Vitamin D.
- Encourage young woman at risk to maximize bone mass through nutrition and exercise.

Complications

- Fractures
- Kyphosis, loss of height
- Chronic back pain

2.6 Hypertension

Worldwide prevalence is projected to increase from approximately 1.0 billion in 2000 to 1.5 billion by 2025. It is a major, independent risk factor for cardiovascular disease (CVD), and the chief risk factor for stroke (accounted for about 62% of strokes). It's often called "the silent killer" because it can be asymptomatic for many years, and people suffering of this problem can have a sudden fatal heart attack

Definition

Hypertension(High Blood Pressure (BP)) is a disease of vascular regulation in which the mechanisms that control arterial pressure with in the normal range are altered. (The systolic pressure is above 140 mm Hg and the diastolic pressure is above 90 mm Hg).

Classification of Blood pressure for adults

Blood pressure classification (BP)	SBP* (mm of hg)	DBP* (mm of hg)
Normal	<120	<80
Prehypertension	120-139	80-89
Stage 1-hypertension	140-159	90-99
Stage 2-hypertension	≥160	≥100
DBP: Diastolic blood pressure SBP: Systolic blood pressure		

Causes

- Increased Cardiac output
- Excessive dietary sodium intake
- Endocrine disturbances
- Medications like Antidepressant steroids.
- Stroke

Risk factors

- Age between 30-70
- Diabetes Mellitus
- Metabolic syndrome
- Over weight
- Family history
- Smoking and alcohol
- Sedentary lifestyle.

Signs and Symptoms

- Usually asymptomatic
- Head ache and dizziness, Blurred vision
- high BP
- Confusion
- Shortness of breath
- Nose bleeds
- Chest pain
- Irregular heart beat

Diagnosis

- BP measurements.
- ECG
- Chest X-ray
- BUN (Blood urea nitrogen) test and creatinine levels
- Proteinuria
- Urine (24-hours) for catecholamine's
- Renal scan to detect renal vascular diseases

Management

- Lose weight
- Avoid alcohol
- Regular aerobic exercise
- Lower sodium intake (2.4 gram or less per day)
- Stop smoking
- Reduce cholesterol and trans fat diet

Drug therapy

- Diuretics
- Beta-adrenergic blockers
- Alpha-receptor blockers
- Central alpha agonists
- Peripheral adrenergic agents
- Angiotensin converting enzyme (ACE) inhibitors

Nursing management

- Provide comfortable bed
- Measuring monitoring and charting BP.
- Advice low fat and low cholesterol diet
- Vital signs.
- Advice life style modification
- Regular follow up

Complications

- Myocardial infarction (MI)
- Heart failure
- Renal failure
- Stroke, hemorrhage
- Retinopathy

2.7 Stroke (Cerebrovascular Accident)

Stroke occurs when there is an ischemia (inadequate blood flow) to a part of the brain or hemorrhage into the brain that results in death of brain cells. Functions such as movement, sensation, or emotions that were controlled by the affected area of the brain are lost or impaired. The severity of the loss of function varies according to the location and extent of the brain involved. Following the onset of a stroke, immediate medical attention is crucial to reduce disability and death.

Definition

Stroke or Cardiovascular Accident (CVA) is the onset and persistence of neurologic dysfunction lasting longer than 24 hours and resulting from disruption of blood supply to the brain.

Types and Causes

Ischemic Stroke : About 80 percent of strokes are ischemic strokes. A stroke may be caused by a blocked artery (ischemic stroke)

- **Thrombotic stroke:** A thrombotic stroke occurs when a blood clot (thrombus) forms in one of the arteries that supply blood to brain. A clot may be caused by fatty deposits (plaque) that build up in arteries and cause

reduced blood flow (atherosclerosis) or other artery conditions.

- **An Embolic Stroke:** Occurs when a blood clot or other debris forms away from the brain commonly in the heart and is swept through bloodstream to lodge in narrower brain arteries. This type of blood clot is called an embolus.

Haemorrhagic stroke

Haemorrhagic stroke occurs when a blood vessel in the brain leaks or ruptures. Brain haemorrhages can result from many conditions that affect the blood vessels. These include:

- Uncontrolled high blood pressure (hypertension)
- Over treatment with anticoagulants (blood thinners)
- Weak spots in the blood vessel walls (aneurysms)

Types of haemorrhagic stroke include

- **Intracerebral hemorrhage.** In an intracerebral hemorrhage, a blood vessel in the brain bursts and spills into the surrounding brain tissue, damaging brain cells.
- **Subarachnoid hemorrhage.** In a subarachnoid hemorrhage, an artery on or near the surface of the brain bursts and spills into the space between the surface of your brain and the skull. This bleeding is often signaled by a sudden, severe headache.

Transient ischemic attack (TIA)

A transient ischemic attack (TIA) - sometimes known as a ministroke - is a temporary period of symptoms similar to stroke.

Risk Factors

Lifestyle risk factors : Being overweight or obese, Physical inactivity, Alcohol consumption, Use of illicit drugs such as cocaine and methamphetamines

Medical risk factors: Blood pressure readings higher than 140/90 millimeters of mercury, Cigarette smoking or exposure to secondhand smoke, High cholesterol, Diabetes, Obstructive sleep apnea, Cardiovascular disease, including heart failure, heart defects, heart infection or abnormal heart rhythm, Personal or family history of stroke, heart attack or transient ischemic attack.

Other factors associated with a higher risk of stroke include

- Age - People age 55 or older, race, sex, men have a higher risk of stroke than women, Hormones- use of birth control pills or hormone therapies that include estrogen, as well as increased estrogen levels from pregnancy and childbirth.

Signs and Symptoms:

- Sudden weakness, paralysis or numbness of the face, arm or leg especially on one side of the body.
- Sudden dimness or loss of vision in one or both eyes.
- Sudden loss of speech, confusion, or difficulty speaking or understanding speech.
- Unexplained sudden dizziness, unsteadiness, loss of balance or coordination.
- Sudden severe headache.

Diagnosis

- **Blood tests:** blood sugar levels, platelet levels, Bleeding time and clotting time
- Magnetic Resonance Imaging (MRI) scan
- Computerized Tomography (CT) scan.

- Electro cardio gram (ECG)
- Cerebral angiography
- Carotid ultrasound
- Echocardiogram
- **Glasgow Coma Scale** (GCS)
- VSH/Doppler study of carotid arteries

Management

- **Anti-platelet drugs** Anti-platelet drugs make these cells less sticky and less likely to clot.
- **Anticoagulants** Reduce blood clotting
- **Physical therapy** such as walking, eating and dressing.
- **Speech Therapy**

Nursing Management

- Vital Signs
- Maintain neurologic flow sheet (Stroke scale)
- Assess for voluntary or involuntary movement.
- Monitor bowel and bladder function
- Assess the skin care
- Personal hygiene
- Support of vital function- Maintain air way. Breathing oxygenation circulation
- Assess the stroke scale
- Intra venous fluids at maintenance until able to tolerate oral diet
- Maintain Blood Pressure
- Acces the level of conciousness by usingn (GCS)
- Thrombolytic therapy - ischemic stroke
- Maintain normal body temperature
- Antispasmodic agents can be used for spastic paralysis

Surgical Treatment

- Carotid Endarterectomy to treat carotid artery disease
- Thrombectomy
- Hemycraniaetomy

Prevention

- Healthy diet
- Controlling high blood pressure (Hypertension)
- Quitting tobacco use
- Controlling diabetes
- Maintaining a healthy weight
- Exercising regularly
- Routine health assessment

Complications

- Aspiration pneumonia
- Dysphagia (Difficulty in swallowing)
- Spasticity, Contractness
- Brain stem herniation
- Deep vein thrombosis, pulmonary embolism
- Post stroke depression.

2.8 Head Injury

A head injury is any sort of injury to brain, skull, or scalp.

Common head injuries include concussions, skull fractures, and scalp wounds. The consequences and treatments vary greatly, depending on what caused your head injury and how severe it is.

Head Injury

Head injury can include fractures to the skull and face, direct injuries to the brain (as from a bullet) and indirect injuries to the brain (such as concussion, contusion or intracranial Haemorrhage).

Head injuries commonly occur from motor vehicle accidents, assaults or falls.

Key terms

Concussion: A temporary loss of consciousness

Contusion: A bruising of the brain tissue.

Intracranial Haemorrhage: Significant bleeding into a space or a potential space between the skull and the brain.

Haematomas: Collections of blood that develop within the cranial vault are the most serious results of brain injury.

Head injuries causes by a blow to the head are usually associated with:

- Motor vehicle accidents
- Falls
- Physical assaults
- Sports-Related Accidents

Specific Problems after Head Injury Includes

Concussion Skull fracture, Lacerations to the scalp and resulting haemorrhage of the skin, Traumatic subdural haematoma, Traumatic extradural, or epidural haematoma, Traumatic subarachnoid haemorrhage, Cerebral contusion, (a bruise of the brain), a loss of motor sensory an reflex function due to trauma, a severe injury may lead to a coma or death.

Signs and Symptoms

- Vertigo
- Pain
- Changes in vital signs
- Immobility
- Visual and hearing impairment
- Bleeding
- Nausea and Vomiting
- Loss of consciousness
- Seizures
- Leaking of clear CSF fluid from the ear or the nose

Diagnosis

- History
- Physical Examination
- Complete blood counts
- Coagulation studies
- Arterial Blood Gas (ABG)
- X-rays
- CT Scans
- MRI (Magnetic Resonance Imaging)
- Glasgow Coma Scale (GCS)
- Increased Intra Cranial Pressure (ICP)

Management

- Maintenance of Airway: Oral suction
- Administer high-flow oxygen.
- Control Bleeding.
- Intravenous fluid (IVF) – to prevent hypovolemic shock.
- Maintain normothermia

Pharmacotherapy

- Anticonvulsants – to control seizures
- Diuritics – to reduce cerebral edema.
- Antibiotics – to prevent infection
- Antipyretics – to control hyperthermia
- Cortico steroid - to reduce intracranial pressure
- In severe condition of brain injury, the anti-seizure medication is very essential, because the patient is at risk for seizures.
- Diuretics may be given if injury has caused pressure buildup in brain. Diuretics cause to excrete more fluids. This can help relieve some of the pressure.

Surgery

- Surgical decompression
- Craniotomy: Surgical incision into the cranium (may be necessary to evacuate a hematoma or evacuate contents)
- Ventriculostomy: insertion of a drain into the ventricles.

Nursing Management

- Assess the neurologic and respiratory status.

- Monitor and record vital sign and intake and output.
- Check cough and gag reflex to prevent aspiration.
- Administer IV fluids to maintain hydration.
- Providing Suctioning to maintain airway
- Provide eye, skin and mouth care to prevent tissue damage.

2.9 Epilepsy/Seizure Disorders

Definition: Seizures (also known as epileptic seizures and, if recurrent, epilepsy) are defined as a sudden alteration in normal brain activity that causes distinct changes in behavior and body function. Seizures are thought to result from disturbances in the cells of the brain that cause cells to give off abnormal, recurrent, uncontrolled electrical discharges.

Classification

The International League Against Epilepsy developed an international classification of epileptic seizures that divides seizures into two major classes: partial-onset seizures and generalized-onset seizures.

1. Simple-partial seizures can have motor, somato sensory, psychic, or autonomic symptoms without impairment of consciousness.
2. Complex-partial seizures have an impairment (but not a loss) of consciousness with simple-partial features, automatisms, or impairment of consciousness only.
3. Generalized seizures have a loss of consciousness with convulsive or non convulsive behaviors.
4. Simple-partial seizures can progress to complex-partial seizures, and complex-partial seizures can secondarily become generalized.

Causes

The etiology may be unknown or due to one of the following:

- Trauma to head or brain resulting in scar tissue or cerebral atrophy
- Tumor in the brain
- Cranial surgery
- Metabolic disorders (hypocalcemia, hypoglycemia)
- Drug toxicity, such as theophylline, lidocaine, penicillin
- CNS infection
- Circulatory disorders
- Drug withdrawal states (alcohol, barbiturates)
- Congenital neuro degenerative disorders.
- Non epileptogenic behaviors, which can emulate seizures but have a psychogenic, rather than an organic, origin

Signs and Symptoms

Manifestations are related to the area of the brain involved in the seizure activity and may range from single abnormal sensations, aberrant motor activity, altered consciousness or personality to loss of consciousness and convulsive movements.

1. Impaired consciousness
2. Disturbed muscle tone or movement
3. Disturbances of behavior, mood, sensation, or perception
4. Disturbances of autonomic functions.

Diagnostic Evaluation

- EEG (Electroencephalography) – locates epileptic focus, spread, intensity, and duration; helps classify seizure type
- MRI, CT scan–to identify lesion that may be cause of seizure
- Neuropsychological studies–to evaluate for behavioral disturbances

- Serum laboratory studies or lumbar puncture–to evaluate for infectious, hormonal, or metabolic etiology.

Management

- Pharmacotherapy - Anti-Epileptic Drugs selected according to seizure type.
- Surgery–operations (temporal lobectomy, extratemporal resection, corpus callosotomy, hemispherectomy)
- Vagal nerve stimulation anterior thalamic stimulation
- A ketogenic diet

Nursing Management

- Establish airway
- Maintain blood pressure (BP).
- Monitor vital and neurologic signs on a continuous basis.
- Administer oxygen–there is some respiratory depression associated with each seizure,
- Establish I.V. lines, and keep open for blood sampling, drug administration, and infusion of fluids.
- Administer I.V. anticonvulsant *slowly* to ensure effective brain tissue and serum concentrations.
- Monitor the patient continuously; depression of respiration and BP induced by drug therapy .
- Determine (from family member) if there is a history of epilepsy, alcohol/drug use, trauma, recent infection.
- Counsel patients with uncontrolled seizures about driving or operating dangerous equipment.
- Assess home environment for safety hazards in case the patient falls, such as crowded furniture arrangement, sharp edges on tables, glass. Soft flooring and furniture and padded surfaces may be necessary.
- Support patient in discussion about seizures with employer, school, and so forth.

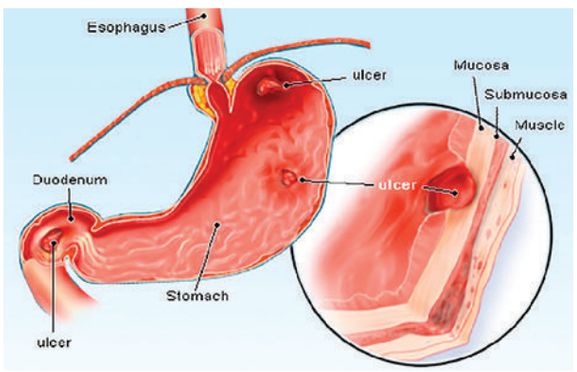
Complications

- Difficulty learning.
- Aspiration pneumonia
- Injuries from falls, bumps, and self-inflicted bites.

Self-care at home for epilepsy

- Loosen any tight neckwear.
- Turn the person on his or her side.
- Do not hold the person down or restrain the person.
- Do not place anything in the mouth or try to pry the teeth apart. The person is not in danger of swallowing his or her tongue.
- Observe seizure characteristics – length, type of movements, and direction of head or eye turning. These characteristics may help the doctor diagnose the type of seizure.

2.10 Gastric Ulcer



Gastric ulcers are open sores within the lining of the stomach. Stomach ulcers (gastric ulcers) are a type of peptic ulcer, meaning having to do with acid. Because of the amount of acid present in the stomach and the damage that can occur, they are often extremely painful. Although gastric ulcers can occur

in any portion of the stomach, they are most commonly found on the lesser curvature close to the antral junction.

Definition

Gastric ulcer that develop inside the stomach.

Gastric ulcer occurs in the lesser curvature of the stomach to acid secreting parietal cell mass.

Causes

The most common cause of stomach ulcers is

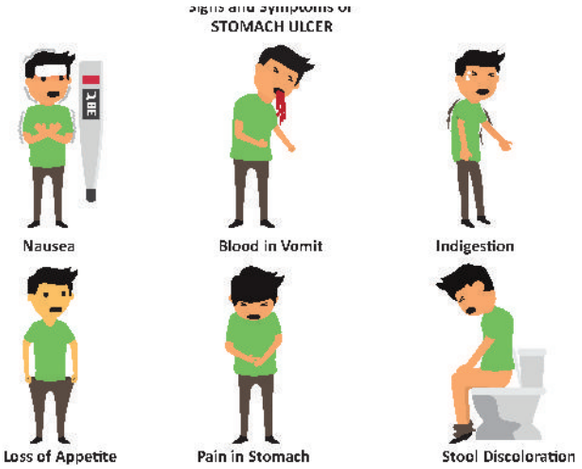
- Helicobacter pylori, or H. pylori infection.
- Ulcers may also be caused by overuse of painkillers, such as aspirin (Bayer), and other nonsteroidal anti-inflammatories (NSAIDs)

Risk Factors

- Alcohol
- Burns
- Cigarette Smoking
- Drug induced NSAID
- Emotion / Stress
- Family history
- Gastritis
- Hyperchlorohydria
- Injection of toxins

Signs and Symptoms

- Dull pain in the stomach
- Weight loss
- Not wanting to eat because of pain / Anorexia
- Nausea or vomiting
- Bloating
- Feeling easily full
- Burping or acid reflux
- Heartburn (burning sensation in the chest)
- Pain that may improve when you eat, drink, or take antacids
- Anemia (symptoms can include tiredness, shortness of breath, or paler skin)
- Dark, tarry stools
- Vomit that's bloody or looks like coffee grounds



Diagnosis

- Barium Meal Study
- Routine blood test
- Oesophago Gastro Duodenoscopy (OGD) Ulcer appear with or without slough or bleeding in their typical locations.
- Gastric secretary Studies.
- Serology to test for H.pylori.
- Breath test to detect H.pylori.

General Measures

- Avoid use of NSAID drugs.
- Avoid cigarette smoking.
- Well balanced diet with meals at regular intervals.

Drug Therapy

- Multiple drug regimens are used to treat H.Pylori.

Surgical Treatment: May perform in advanced disease condition

- Billroth I Partial Gastrectomy with removal of antrum and pylorus of stomach.

- Billroth II Gastrectomy: Here the gastrectomy is done below the ulcer and remant of the stomach is unastomosed to a jejunal loop.

Nursing Management

- Take vital signs and BP.
- Promote healthy life style.

Complications

- Gastric Perforation, haematemesis, melaena
- Gastric Outlet Obstruction (GOO)
- GI haemorrhage

2.11 Duodenal Ulcer

Duodenal ulcers account for about 80% of all peptic ulcers. Approximately 10% of men and 5% of women at some time in their lives will experience a duodenal ulcer. Duodenal ulcers may occur at any age, but the incidence is especially high between 35 and 45 years of age. Duodenal ulcers can develop in anyone, regardless of occupation or socioeconomic group. Although many factors are associated with the development of duodenal ulcers, H. Pylori has been identified as playing a key role. H. Pylori is found in approximately 90% to 96% of patients with duodenal ulcers.

Definition

Duodenal ulcer: A crater (ulcer) in the lining of the beginning of the small intestine (duodenum).

Causes

- **Infection** with *Helicobacter pylori* (*H. pylori*)
- **Anti-inflammatory medicines** are sometimes called non-steroidal anti inflammatory drugs (NSAIDs).
- **Other factors** such as smoking, stress and drinking heavily may possibly increase the risk of having a duodenal ulcer.
- **Genetic causes** family history of duodenal ulcer.
- Hyper secretion of stomach acid

Risk Factors

- Blood group 'O'
- Alcohol
- Smoking stress

Signs and Symptoms

- **Pain** in the upper tummy (abdomen) just below the breastbone (sternum) is the common symptom food intake may releive the pain
- Pain may flare at night
- Weight gain
- Vomiting
- Hemorrhage
- Haematemesis

Diagnosis

as same as gastric ulser

Management

- Change in Lifestyle
- Lose weight.
- Avoid any trigger foods.
- Eat smaller meals and eat your evening meal 3-4 hours before going to bed.
- Stop smoking.
- Stop alcohol consumption.
- Acid-suppressing medication
- A Proton Pump Inhibitor (PPI) -90-95% of healing within 2-4 weeks.
- H2 receptor blockers for 6 weeks.
- Triple drug rigimens are used to treat H.pylori infection.

Surgical treatment

- Highly Selective Vagotomy (HSV)
- Pyloroplasty.

2.12 Gall Bladder Stone

The gall bladder is a storage place for digestive (bile) juice. It is tucked below the liver, in the right upper side of the abdomen. When you consume fatty foods, the gall bladder pushes bile juice into the intestine through the bile duct, to aid digestion.

Any changes in the bile juice can result in formation of small pebble like stones in the gallbladder, commonly called as gallstones or gallbladder stones.

Gallstones can either be as big as golf ball or as small as a pebble. Also, there can be one large stone or many small stones or a combination of both.

Definition

Gallstones (Cholelithiasis) usually form in the gallbladder from the solid constituents of bile and vary greatly in size shape and composition.

Types

The two main kinds are

- **Cholesterol stones.** These are usually yellow-green in color. They're the most common kind, accounting for 80% of gallstones.
- **Pigment stones.** These stones are smaller and darker. They're made up of bilirubin, which comes from bile, a fluid your liver makes and your gallbladder stores.

Risks Factors

- Pregnant women and those who are on birth control pills
- People of age >40 years
- Obese people
- People undergoing sudden weight loss
- Those with a positive family history of gallstones
- Individuals with health issues such as diabetes and certain intestinal and liver diseases
- Patient with Cirrhosis, hemolysis and infections of the biliary tree.
- Warning signs of a serious problem are fever, jaundice, and persistent pain.

Signs and Symptoms

- Asymptomatic even for years
- Fullness
- Abdominal distension
- vague pain in the right upper quadrant of the abdomen.
- Reffered Pain and Billary Colic
- Jaundice
- Vitamin Deficiency- A, D, E and K

Diagnosis

- Abdominal X-ray
- Ultrasonography
- Cholescintography
- Cholecystography
- Percutaneous Transhepatic cholangiography (PTC)
- Serum bilirubin and phosphatase

Nursing management

- Dissolving Gallstones by infusion of a solvent into the gall bladder.
- Two types of non-surgical or noninvasive treatment options can be used to dissolve cholesterol gallstones:
- **In laparoscopic cholecystectomy**, the gall bladder is removed through a tiny slit in the abdomen with the help of a tiny video

camera. The recovery is faster and patient can be discharged on the next day.

- **Open cholecystectomy** is performed when laparoscopic cholecystectomy is not possible. Open surgery causes more pain and recovery time in hospital is around a week.
- Extra Corporeal Shock-Wave Lithotripsy (ECSW)

Supportive Management

- Intravenous fluids administration
- Nasogastric tube suction
- Pain management
- Antibiotics

Complication

- Cholangitis
- Necrosis
- Gallstoneileus leads to intestinal obstruction

2.13 Hernia

A hernia occurs when an organ pushes through an opening in the muscle or tissue that holds it in place.

Definition

Hernia is a localized bulge in the abdomen that occurs when there is a weakness in the muscular wall.

Causes

- Congenital - failure of the abdominal wall to close.
- Age – after 60 years
- Chronic cough
- Pregnancy - which puts pressure on the abdomen
- Constipation
- Lifting heavy weight
- Fluid in the abdomen, or ascites
- Abdominal surgery
- Obesity

Types

Inguinal hernia: Intestines push through the inguinal canal.

Incisional hernia: Resulting from an operated site.incision

Hiatal hernia: Part of the stomach protrudes up through the diaphragm into the chest cavity.

Umbilical hernia: A part of the bowel protrude through the belly button (umbilicus).

Congenital diaphragmatic hernias is a birth defect in which there is an abnormal opening in the diaphragm.

Sports hernia is a tear or strain of any tissue in the lower abdomen or groin due to gym activity.

Signs and Symptoms

- Swelling in the abdomen or in the groin which disappears when lying down.
- Pain on palpation
- Vomiting
- Feeling of weight in the abdomen.
- Constipation
- Discomfort in the abdomen or groin when coughing, lifting a weight or bending over.
- Fever
- Upper abdominal pain
- Chest pain

Diagnosis

- History collection
- Physical examination
- Abdominal X-rays
- Complete blood count, electrolytes.
- Ultrasonography of the abdomen
- CT abdomen

Management

Non Medical: Abdominal binder

Surgical management:

- Herniorrhaphy
- Hernioplasty

Nursing management

- Provide trendelenburg's position
- Administer stool softners

Inguinal hernias are the most common type of hernia

Prevention

- Stop smoking
- Avoid developing a persistent cough
- Maintain appropriate body weight for the age.
- Avoid straining during bowel movements
- Lift objects with knee flexion and not with hip flexion.
- Heavy lifting should be avoided for 4 to 6 weeks after treatment.

Complication

- **Strangulation**: reduced blood supply to a herniated organ.
- **Obstruction**: the bowel contents may no longer be able to pass through the herniated area, leading to cramps, the absence of defecation and vomiting.
- Recurrence hernia

2.14 Haemorrhoids (Piles)

Haemorrhoids, also known as piles are swelling containing enlarged blood vessels found inside or around the rectum and anus.

Definition

An abnormal mass of dilated and engorged blood vessels either internally in the anal canal or externally around the anus

Causes

- Straining during bowel movements
- Sitting for long periods of time on the toilet
- Chronic diarrhoea or constipation
- Obesity
- Pregnancy

Types

- **Internal haemorrhoids** - inside the rectum.
- **External haemorrhoids** - around the anus.

Symptoms

- Painless bleeding during bowel movements
- Itching or irritation in anal region
- Pain or discomfort
- Swelling around the anus

Diagnosis

- **Digital rectal examination** - to detect the unusual growths.
- **Inspection** - examine the lower portion of the colon and rectum with proctoscope
- **Colonoscopy** to examine the entire colon

Management

- Home remedies
- Eat high-fibre foods (fruits, vegetables and whole grains.)
- Increase fluid intake
- Use topical ointment
- Sitz bath for 10 to 15 minutes, two to three times a day.
- Keep the anal area clean.
- Apply ice packs or cold compresses on anus to relieve swelling and pain

Medical management

- Lidocaine that can relieve pain and itching

- Sclerotherapy - injecting a chemical solution into the haemorrhoid to shrink it.

Surgical management

- **Rubber band ligation**. placing one or two tiny rubber bands around the base of haemorrhoid to cut off its circulation.
- Haemorrhoidectomy
- **Haemorrhoids stapling** - Surgical staples block the blood flow to haemorrhoids

Nursing management

- Educate to take plenty of water.
- Care of drainage tubes

Complications

- Anemia.
- Strangulated hemorrhoid.
- Infection
- Anal fistula

Prevention

- Eat high fibre foods.
- Drink plenty of fluids.
- Don't strain when trying to pass a stool
- Defecate as soon as the feeling of urge occurs
- Exercise.
- Avoid long periods of sitting Obesity

Nearly three out of four adults will have hemorrhoids

2.15 Renal Failure

Kidneys are two bean-shaped organs located in lower back. It excretes wastes and extra fluids from the body and producing and balancing chemicals that are necessary for body to function

Types

Acute real failure(ARF)

- Sudden onset
- Rapid reduction in urine output-usually irreversible

Chronic renal failure(CRF)

- Progressive
- Not reversible

Acute Renal Failure

Definition

Acute Renal Failure –is a sudden and almost complete loss of kidney function caused by failure of the renal circulation or by glomerular or tubular dysfunction

Causes of ARF

- **Pre-renal** (60-70 %)
- Volume Depletion
- Hemorrhage
- Renal losses
- Sepsis
- Cardiac failure
- Anaphylaxis

Intra renal (5-10%)

- Pigment Nephropathy
- Myoglobinuria
- Hemoglobinuria
- Nephrotoxic agents

Post-renal (20-40% cases)

- Urinary tract obstruction
- Calculi
- Tumors in lower urinary tract

People in risk

- Being hospitalized especially for a serious condition that requires intensive care
- Advanced age

- Blockages in the blood vessels in arms or legs
- Diabetes
- High blood pressure
- Heart failure
- Kidney diseases
- Liver disease

Signs and Symptoms of ARF

- Oliguria - Urine output less than 400ml/day
- Anuria - Urine output less than 100ml/day
- Increased BUN creatinine
- Hyper Kalemia
- Metabolic acidosis
- Edema
- Mental changes
- Heart failure
- Nausea, vomiting
- Pruritus

Diagnosis

- History of underlying cause
- Blood- Increased potassium, BUN, Creatinine
- Urine: decreased volume and specific gravity is fixed or increased
- Renal ultrasound, renal scan, renal biopsy, CT scan or MRI, KUB X-ray, Retrograde pyelogram.

Management

- Removal of the underlying cause
- Diuretics
- Fluid restriction (600 ml plus previous day output) Calcium supplements or phosphate binding agents
- Nutritional therapy
  -Protein intake 0.6/kg/day
  -Potassium restriction
  -sodium restriction
  -Calorie intake 30 to 35 kcal/day/kg body weight
  -Dialysis

Chronic Renal Failure (ESRD-End stage Renal Disease)

Definition

Chronic or irreversible renal failure is a progressive reduction of functioning renal tissue or loss of renal function in which the body's ability to maintain metabolic and fluid electrolyte balance fails, resulting in uremia or azotemia over a period of months or years.

Causes

- Diabetic Nephropathy
- Hypertension
- Glomerulonephritis
- Pyelonephritis.
- HIV nephropathy
- Reflux nephropathy in children
- Polycystic kidney disease
- Kidney infections and obstructions
- Chronic pyelonephritis
- Head, Cadmium, mercury and chromium

Clinical manifestation

- Amenorrhea
- Testicular atrophy
- Malaise and Fatigue
- Pitting edema
- Periorbital edema
- Engorged neck veins
- CHF
- Anorexia
- Nausea
- Vomiting
- Seizure
- Constipation
- Peptic ulceration
- Diverticulosis

- Anemia
- Pruritus
- Jaundice
- Hypertension
- Pericarditis
- Peripheral neuropathy, dialysis dementia

Diagnosis

- History collection
- Physical examination
- Identification of reversible renal disease
- Renal ultrasound
- CT scan / Doppler
- Renal biopsy
- Blood-BUN, creatinine, electrolytes, Hb level
- Urine analysis
- Renal biopsy

Management

Medical

- Calcium and phosphorous binders and phosphate binders
- Anti hypertensive drugs-to control BP
- Hypoglycemic agents-to reduce and maintain blood sugar level
- Fluid restriction-600 ml plus previous day output)
- Diuretics-to increase the output
- Erythropoien-to maintain RBC count
- Dialysis
  1. Peritoneal
  2. Hemodialysis

75% of kidney function can be lost before it is noticeable

Diet

- Low protein - 0.8 gm protein/kg/day with normal carbohydrate
- Low potassium (avoid bananas, dry fruits, fruit juices), low phosphorus (soak vegetables 24 hr prior to cooking).
- Fluid allowances per day is 500 ml to 600 ml plus previous day urine output

Surgical management

- Renal transplantation

Nursing management

1. Assessing fluid status and ideentifying potential source of imbalance
2. Implementing a dietery program to ensure proper nutrional intake
3. Promoting positive feelings by encouraging increased self-care and greater independence
4. Provide explanations and information to the patient and family concerning ESRD, treatment options and potential complications.
5. Provide emotional support to the patient and family
6. Health education on diet and fluids.

Complications

- Hyperkalemia
- Pericarditis
- Pericardial effusion
- Pericardial tamponade
- Hypertention
- Anaemia
- Increased incidence of fracture

2.16 Renal Stone / Renal Calculi / Urolithiasis

A stone is a hard, solid mass that can form in the gallbladder, bladder, and kidneys. Kidney stones usually originate in kidneys.

Definition

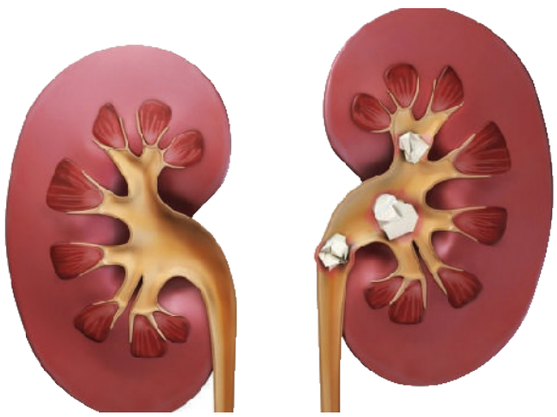
Urolithiasis refers to the presence of stone (Calculi) in the urinary tract.

Incidence

It is associated with urinary tract infection. Commonly seen between the age of 20 and 55yrs.

Types of kidney stones

- **Calcium stones:** Are the most common type made of calcium and oxalate.35-40%
- **Cystine stones:** Are very rare 1-2%
- **Uric acid stones:** Formed when urine is too acidic.5-8%
- **Struvite stones:** Can happen when there is urinary tract infections.10-15%
- **Upper urinary tract stones:** That involve the renal pelvis and extend into at least 2 calyces are classified as *staghorn calculi*



Causes

- Genetic factors-- family history of kidney stones
- Previous history of kidney stone.
- Certain medications
- Infection
- Urinary stasis
- Hyper Calcemia
- Hypercalcuria
- Diets that are high in protein and sodium but low in calcium
- Sedentary lifestyle, obesity, pressure, immobility
- Dehydration
- Warm climate

Signs and Symptoms

- Severe pain and is called renal colic.
- Flank pain
- Haematuria
- Obstruction
- Infection
- Edema
- Pyuria
- Nausea and vomiting
- Fever with chills
- Frequent urination
- Urinating small amounts of urine
- Increased urge to urinate

Diagnosis

- Health history
- Physical examination.
- 24 hour urine test
- Urography.
- Blood tests for calcium, phosphorus, uric acid, electrolytes, urea and nitrogen
- Urinalysis to check for crystals, bacteria, blood, and white cells
- Examination of passed stones to determine the type
- KUB X-rays
- Intravenous Pyelogram (IVP)
- Ultrasound of the kidney
- MRI of the abdomen and kidneys
- Abdominal CT scan

Management

Medical management

- Antispasmodic drug-relieves colic pain
- Antibiotics-prevents infection
- Narcotics-relieves pain

Surgical management

- Cystoscopy: Scopic removal of stones

- Lithotripsy-Extracorporeal shock wave lithotripsy (ESWL) uses sound waves to break up large stones into smaller pieces and they pass through the ureters in to the bladder.
- Nephrectomy
- Ureterolithotomy

Nursing Management

- Increase the fluid intake of 3000 ml/day
- Encourage Urination at frequent intervals
- Avoid stone-forming foods like Beets, chocolate, spinach and colas

DO YOU KNOW?

North Indians are prone for renal calculiand so North India is called as stone belt region

2.17 Bronchial Asthma

Asthma is a chronic disease involving the airways in the lungs. These airways, or bronchial tubes, allow air to come in and out of the lungs.

Definition

Asthma is a chronic inflammation of the airways characterized by reversible air flow obstruction. This can make breathing difficult and trigger coughing, wheezing and shortness of breath.

Causes

- Airborne substances, such as pollen, dust mites, mold spores, pet dander or particles of cockroach waste
- Respiratory infections, like common cold
- Physical activity
- Air pollutants and irritants, such as smoke
- Medications, like aspirin, ibubrufen
- Strong emotions and stress
- Preservatives added to some foods and beverages, including shrimp, dried fruits, processed potatoes, beer and wine
- Gastro esophageal reflux disease (GERD), a condition in which stomach acids back up into the throat
- Drugs/food allergies.

Signs and Symptoms

- Shortness of breath
- Chest tightness or pain
- Trouble sleeping caused by shortness of breath
- coughing
- wheezing
- Difficult in breathing(dyspnea)
- A whistling or wheezing sound when exhaling (wheezing is a common sign of asthma in children)
- Coughing or wheezing attacks

Types

- Exercise-induced asthma
- Occupational asthma
- Allergy-induced asthma
- Extrinsic Asthma
- Intrinsic Asthma

Asthma triggers

Diagnosis

Tests to measure lung function

- **Spirometry.** This test estimates the narrowing of your bronchial tubes
- **Peak flow.** A peak flow meter is a simple device that measures how hard you can breathe out.
- **Skin testing to identify causative allergens**
- **X-ray chest**

Medical management

- Antibiotics
- Immunotherapy
- Corticosteroids.
- Bronchodialators

Nursing management

- Assess the airway of the patient
- Assess the skin turgor for dehydration
- Patient room should be free of respiratory irritants

Lifestyle and home remedies

Avoid triggers

- Maintain optimal humidity.
- Reduce pet dander.
- Change the bed linen once in a week.
- Cover the nose and mouth during cold season.

Stay healthy

- Exercise regularly.
- Maintain a healthy weight.
- Control heartburn and Gastro Esophageal Reflux disease (GERD).

Alternative medicine

- Breathing exercises.
- Herbal and natural remedies includes black cumin seeds.

Prevention

- Get vaccinated for influenza and pneumonia.
- Avoid asthma triggers

The more ozone you breathe, the greater the likelihood of developing asthma.

2.18 Chronic Obstructive Pulmonary Disease (COPD)

Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term used to describe progressive lung diseases including emphysema and chronic bronchitis.

Definition

COPD is a obstructive lung disease characterized by long-term breathing problems and poor airflow.

Causes

- Cigarette smoking
- Indoor air pollution
- Exposure to fumes from burning wood
- Chronic respiratory infections
- Allergy autoimmunity
- Occupational exposure
- Hereditary and genetic factors
- Alpha-antitrypsin deficiency

Signs and Symptoms

- Dyspnea Shortness of breath,
- Chronic coughing,
- Wheezing,
- Chest tightness
- Production of thick, gelatinus sputum
- Acute or chronic reparatory failure,
- Weight loss,
- Respiratory insufficiency,
- Tachypnea,Fatigue,Peripheral edema

2.18.4 Diagnosis

- Lung (pulmonary) function tests
- Spirometry

- Chest X-ray
- CT scan
- Arterial blood gas analysis

Medical Management

- Inhaled Bronchodilators
- Anticololinergic
- Antibiotics
- Corticosteroids nebulization
- Methylxanthines
- Digitalis – to treat LVF, if present
- Mucolytics eg: potassium iodide, guaifenesin
- Immunization
- Oxygen therapy
- Chest physiotherapy

Surgical management

- Lung volume reduction surgery
- Lung transplantation

Prevention

- Avoid cigarette smoking and other inhaler irritants.
- Control of environmental temperature and humidity
- Proper nutrition and adequate hydration
- Pneumococcal vaccination

Nursing management:

- Eliminate pulmonary irritants like cigarette smoking
- Train and monitor patients inhaler using techniques
- Restrict sodium
- Encourage relaxation exercises

Complications

- Respiratory infection.
- Respiratory failure
- Right side heart failure
- Pneumonia.
- Depression

Incidence of COPD is 9/1000 per year globally with a higher incidence in males and in smokers.

2.19 Diabetes Mellitus

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the increased insulin resistance such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many of the body's systems, in particular the blood vessels and nerves.

Definition

The term Diabetic mellitus describes a metabolic disorder of multiple etiologies characterized by chronic hyperglycemia with disturbance of carbohydrate fat and protein metabolism resulting from defects of insulin secretion, insulin action or both.

Types

- Type 1
- Type 2
- Prediabetes
- Gestational diabetes

Type 1 diabetes/Insulin dependent/ Diabetes mellitus (IDDM)

Type 1 diabetes is also referred to as Juvenile diabetes Mellitus. It results from destruction of pancreatic β cells which produce insulin leading to absolute insulin deficiency.

Etiology

- Viral
- Autoimmune
- Environmental factors.

Type 2 diabetes/Non-Insulin dependent diabetes mellitus(NIDDM)

Most common form of diabetes. Body produces insulin, but do not use it properly, glucose doesn't move into cells, they pile up in the bloodstream.

Risk factors

- Genetic
- Autoimmune
- Stress
- Environmental factors
- Obesity

Prediabetes

Slight elevation of blood glucose levels, regarded as indication that the person is at risk of progressing to Type 2 diabetes.

Gestational Diabetes Mellitus (GDM)

is defined as carbohydrate intolerance during pregnancy.

Risk factors

- Polycystic ovary syndrome
- women under age 25
- Hydraminos

Causes

- Family history of diabetes
- Overweight prior to pregnancy

Signs and Symptoms

- Hyperglycemia - Polyuria, Polydipsia, Polyphagia
- Weight loss
- Fatigue
- Blurred vision
- Poor wound healing
- Recurrent infection

Diagnosis

Urine analysis

- Glucose
- Ketone
- Microalbuminuria

Blood chemistry

- Blood glucose estimation, fasting and random blood sugar
- Oral Glucose tolerance test (OGTT)
- Check HbA1c (GLYCOSYLATED HAEMOGLOBIN LEVEL)

Management

Type 1

- Maintain and control sugar level
- Insulin therapy
- Healthy life style – exercise and diet.
- Islet transplantation
- Oral Antidiabetic agents
- Lipid control
- **DIET**
- Meal plan for Caloric restriction
- Weight reduction
- **EXERCISE:** Regularly scheduled, moderate exercise performed 30 to 60 minutes/day.
- Islet transplation

Type 2

- Maintain a healthy lifestyle
- Oral hypoglycemic agent and injection insulin if needed
- Dietary management and exercise

Gestational diabetes

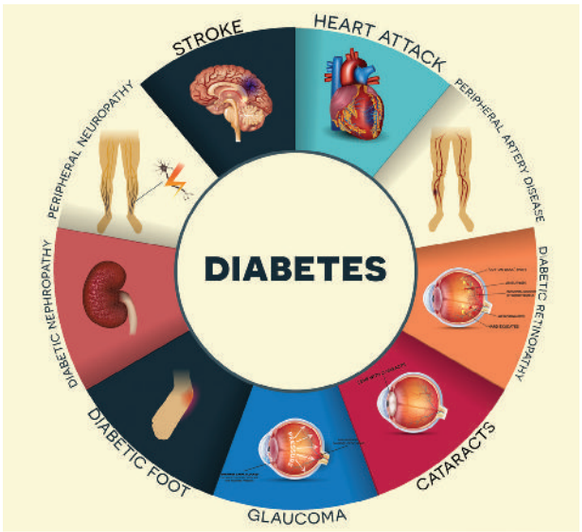
- Insulin
- Physical activity
- Diet
- Plan Increase fiber intake

Nursing management

- Monitoring blood glucose.
- Administering antidiabetics/insulin.
- Foot care.
- Monitoring for hyper/hypoglycemia.
- Offering snacks at bedtime if permitted.
- Lifestyle management

Prevention

Complications of uncontrolled diabetes



- Hypoglycemia
- Macroangiopathy
- Peripheral Neuropathy
- Micro angiopathy
- Autonomic Neuropathy
- Diabetic Keto acidosis (DKA)

2.20 Hypothyroidism

The thyroid is a butterfly-shaped endocrine gland located in the lower front of the neck, below the larynx (the voice box). The main hormone secreted by the thyroid is Thyroxin, (T4) and Triiodothyronine (T3).

Definition

Inadequate secretion for thyroid hormone during fetal and neonatal development, resulting in retardation of growth and mental development in children and adults.

Causes of hypothyroidism

- Iodine deficiency
- Lithium therapy
- Autoimmune disease
- Surgical removal of the thyroid
- Radiation treatment
- Overdose of anti-thyroid drugs

Signs and Symptoms

- Body's functions to slow down, leading to dry skin, fatigue, loss of energy, and memory problems.
- Thinly hair
- menorrhagia.

Diagnosis

Blood test for Thyroid-Stimulating Hormone (TSH) T3 and T4.

- Elevated TSH level
- elevation of cholesterol level
- Electro cardio gram (ECG)

Management Medical

- Replacement of thyroid hormone

Side effects of thyroid harmone

- Headache.
- Shaking and trembling of arms and feet.
- Nausea and Vomiting.
- Diarrhea.
- Abdominal cramps.

- Nervousness and irritability.
- Sleeplessness.
- Excessive sweating.

Foods to be avoided

Foods that contain gluten: Bread, pasta, cereals, beer, etc.

- Soya and it's products Tofu and soya milk.
- Cruciferous vegetables: Broccoli, kale, spinach, cabbage, etc.
- Certain fruits: Peaches, pears and strawberries.

Effects of exercise

- Maintain a healthy weight.
- Decrease joint pain.
- Relieve depression.
- Boost energy.
- Increase muscle mass.

Prevention

- Taking iodized salt and iodine supplements

Complications

- Goiter.
- Heart problems.
- Peripheral neuropathy.
- Myxedema.
- Infertility and Birth defects.
- Hypotension
- Bradycaudia
- Convulsions
- Hypothermia

2.21 Hyperthyrodism

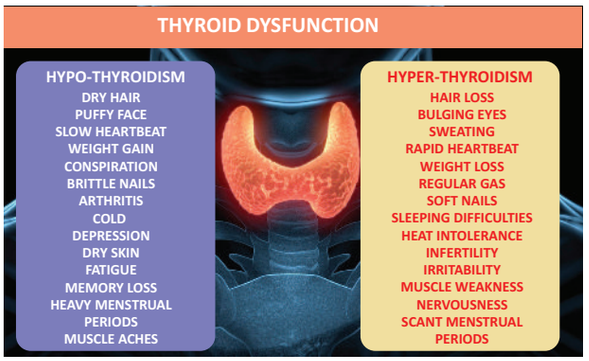
Definition

Hyperthyroidism is a condition in which thyroid glands performs excessive functional activity and produces excess thyroid hormone

Causes

- Diffuse hyperfunction of the thyroid gland.
- Grave's disease.

Signs and Symptoms



Diagnosis

Blood test

- Elevated T3 and T4
- Low TSH
- Presence of TSI antibodies

Management

Medical

- Antithyroid medications to suppress the production of thyroid hormones.
- Radioactive iodine therapy
- Glucocorticoids

Surgical

Thyroidectomy : Removal of the part or entire thyroid gland

Nursing management

- Promote adequate rest (back rubs, hot milk)
- Encourage short walk, rest between activity
- Promote good eye care (dark glass)

- Facilitate improved coping.
- Enhance client knowledge about hyperthyrodism

Dietary management

- Iodized salt.
- Vitamins or supplements that contain iodine
- Milk or other dairy products including ice cream, cheese, yogurt and butter.
- Seafood including fish, shellfish.
- Herbal supplements.

Foods to be included

- Non-iodized salt.
- Coffee or tea (without milk or dairy- or soy-based creamers)
- Egg whites.
- Fresh or canned fruit.
- Unsalted nuts and nut butters.
- Breads made without salt, dairy, and eggs.
- Popcorn with non-iodized salt.
- Oats.

Women are 4-7 times more likely to have THYROID disorders than men

Complication

- Arrhythmia
- Congestive heart failure.
- Hypertension.
- Sudden cardiac arrest.

2.22 Fibrosis

Fibrosis, or scarring, is a condition where the wound healing is exaggerated. It is progressive in nature eventually leading to organ malfunction and death. Fibrosis affects nearly every tissue in the body. The growth of new capillaries into the inert material (exudates or thrombus), the migration of macrophages and the proliferation of fibroblasts resulting in fibrosis.

Definition

Pathological accumulation of extracellular matrix (ECM) proteins resulting in fibrosis or scarring and thickening of the affected tissue.

Causes

- Unknown
- Radiation
- Cigarette smoke
- Chemicals
- Chronic alcoholism
- Occupational hazards (silicosis, asbestosis)
- Chronic infection
- Fatty liver disease
- Hepatitis B or hepatitis C.

Types

- **Lung fibrosis or pulmonary fibrosis** - occurs as a result of long standing infections such as tuberculosis or pneumonia.
- **Cirrhosis of liver** refers to the scar tissue and nodules that replace liver tissue that disrupt liver function.
- **Heart fibrosis** - areas of the heart that have become damaged due to myocardial infarction.
- **Mediastinal fibrosis** - calcified fibrosis of the lymph nodes, which can block respiratory channels and blood vessels.
- **Retroperitoneal cavity fibrosis** - fibrosis of the soft tissue in the retro-peritoneum
- **Myelofibrosis** - scarring of the bone marrow that prevents the normal production of blood cells.

- **Keloid-fibrosis** on the skin in response to injury
- **Scleroderma or systemic sclerosis** - an autoimmune disease of the connective tissue that primarily affects the skin but can also involve other organs such as the kidneys, heart and lungs.

Diagnosis

- Tissue biopsy

Management

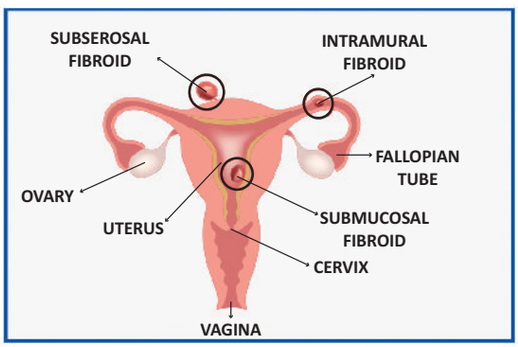
- Stem Cell therapy

Complication

- Joints - stiffness and pain
- Tendons – contracture, deformity
- Shoulder capsule - adhesive capsulitis and frozen shoulder
- Fibrosis of the soft tissue in the penis

2.23 Fibroid Uterus

Uterine fibroids are noncancerous growths of the uterus that often appear during childbearing years. It is also called leiomyomas or myomas.



Definition

The benign tumors that originate in the uterus.

Classification

- Submucosal (submucous) fibroids
- Intramural fibroids
- Subserosal fibroids

Signs and Symptoms

- Abnormal uterine bleeding
- Spotting between menses
- Iron deficiency anemia
- Mild or severe, localized pain in lower abdomen or back during / after sexual contact
- Pelvic pain, including pain during sexual contact
- Pressure on the bladder
- Obstructed urination
- Painful or difficult defecation

Diagnosis

- Pelvic exam
- Ultrasound.
- Hystero Salpingo Graphy (HSG)
- MRI, CT Scan

Management

Management in general

- Preventive
- Conservative

Medical

- Hormonal Therapy
- Low dose of oral contraceptives
- Analgesics for pain

Surgical

- Hysterectomy,
- Myomectomy
- Cryosurgery

Preventive

- Effective antenatal care
- Adequate intranatal care
- Adequate postnatal care

Conservative

- Assurance
- Improvement of nutritional status
- Pelvic floor exercises.

Nursing management

- Assess the blood loss
- Assist and teach the pain relieving techniques
- Educate about hormonal therapy
- Advice calcium rich diet to prevent osteoporosis
- Advice to consult doctor in case of bleeding per vagina during Hormonal therapy
- Advice to do yoga and meditations

Increased risk of pregnancy complications in the presence of fibroids, such as first trimester bleeding, breech presentation, placental abruption, and problems during labor. Fibroids have also been associated with an increased risk of cesarean delivery

2.24 Menstrual Disorders

Menstrual cycles often bring about a variety of uncomfortable symptoms. Menstruation can be either too heavy or too light, or complete absence of a cycle.

Disorders of cycle length

Oligomenorrhea –Infrequent menstruation

Polymenorrhea - cycles with intervals of 21 days or fewer.

Amenorrhea -absence of a menstrual period in a woman of reproductive age.

Disorders of Flow

Hypomenorrhea - light or scantly menstrual blood flow.

Menorrhagia - abnormally heavy and prolonged menstrual period.

Metrorrhagia - bleeding at irregular times, **Menometrorrhagia** (meno = prolonged, metro = uterine, rrhagia = excessive flow/ discharge) prolonged or excessive uterine bleeding occurs irregularly and frequently.

Dysmenorrhea - cramps or painful menstruation

Causes

- Uterine abnormalitites (Fibroids)
- Sexually transmitted diseases (gonorrhea)
- Steroid consumption
- Chronic pelvic diseases
- Immaturity of the hypothalamic-pituitary axis
- Polycystic ovarian disease

Psychological factors

- Anxiety
- Stress
- Emotional trauma;
- Drugs
- Drug addiction
- Steroid administration
- Metabolic or endocrine diseases
- Nutritional deficiency

Peripheral causes:

- Ovarian cyst,
- Pelvic tumors

Diagnosis

- General examination
- Abdominal and pelvic examination
- Transvaginal ultrasound
- Dilatation and Curettage
- Hysteroscopy

Management

General Management

- Encourage to eat a healthy diet that includes plenty of whole grains, fruits, vegetables, protein and calcium.
- Exercise regularly
- Adequate sleep
- Use absorbent tampon
- Avoid caffeine.
- Eat smaller, and frequent meals
- Vitamin or mineral supplements
- Avoid alcohol,
- Avoid self medications

Medical Management

- Hormonal therapy
- Iron supplementation to prevent anaemia.

Normal menstrual cycle is 28 days + 7 days

2.25 Uterine Prolapse

Uterus (or womb) is normally held in place inside pelvis with various muscles, tissue, and ligaments. Because of pregnancy, childbirth or difficult labor and delivery, in some women these muscles weaken. Also, as a woman ages and with a natural loss of the hormone estrogen, the uterus can drop into the vaginal canal, causing the condition known as a prolapsed uterus

Definition

Descend of uterus from its normal position in the pelvis further down into the vagina.

Types

First degree: The cervix drops into the vagina.

Second degree: The cervix drops to the level just inside the opening of the vagina.

Third degree: The cervix is outside the vagina.

Fourth degree: The entire uterus is outside the vagina. This condition is also called procidentia. This is caused by weakness of the supporting muscles.

Risk factors

- Excess weight lifting
- multiple deliveries

Causes

- Pregnancy/childbirths with normal or complicated delivery through the vagina
- Advancing age with weak pelvic muscles
- Weakening and loss of tissue tone after menopause and loss of natural estrogen
- increased pressure in the abdomen such as chronic cough
- Major surgery in the pelvic area leading to loss of external support
- Smoking

Signs and Symptoms

- Pelvic heaviness or pulling
- Vaginal bleeding or an increase in vaginal discharge
- Difficulties with sexual intercourse
- Urinary leakage, retention or bladder infections
- Bowel movement difficulties, such as constipation
- Lower back pain
- Uterine protrusion from the vaginal opening
- Sensations of sitting on a ball or feeling of something is falling out of the vagina
- Weak vaginal tissue

Diagnosis

Diagnose uterine prolapse with

- A medical history and physical examination of the pelvis.
- Intra Venous Pyelogram (IVP)
- Renal sonography.
- X-rays.
- Ultrasound.
- Vaginal examination
- Rectal examination.

DO YOU KNOW?

High post – pregnancy BMI raises pelvic organ prolapsed risk

Research suggests that having a high BMI after pregnancy increases the risk of a prolapse

Management

Prolapse up to the third degree may spontaneously resolve.

Complications

- Infertility
- Abortion
- Preterm labour
- Risk of operative delivery
- Anaemia due to heavy bleeding
- Uterine cancer

Vaginal pessary: It is a removable device placed into **the vagina**.

Surgery: Hysterectomy

Nursing management

Teach and insist to practice Kegel exercise during pregnancy and post natal period

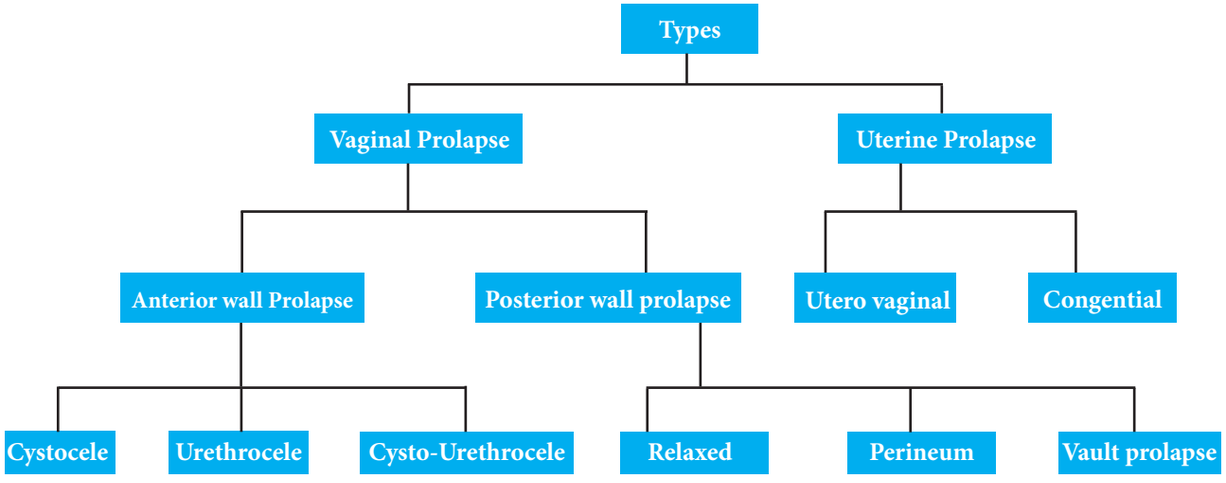
Exercise

Mild uterine prolapse can be treated with Kegel exercises

- Tighten the pelvic floor muscles, as you are attempting to stop urinating and hold for 5 seconds
- Take a 5-second break and repeat for three to 10 times per day.
- Avoid more child birth.

Prevention

- Maintain optimal weight.
- Avoid constipation by eating a high-fiber diet.
- Perform Kegel exercises to strengthen the pelvic muscles.
- Avoid heavy lifting or straining. Preventing and treating constipation
- Avoid chronic cough



2.26 Benign Prostatic Hyperplasia (BPH)

Prostrate is a gland about the size of a walnut and is present only in males. It lies below the urinary bladder and surrounds the urethra. The prostate secrete a fluid that helps to nourish sperm as part of the semen (ejaculatory fluid). It is a noncancerous enlargement or hypertrophy of the prostate.

Definition

A benign (not cancer) condition in which an over growth of prostane tissue pushes against the urethra and bladder, blocking the flow of urine.

Risk factors

- Aging occurs after 50- 80 years.
- Family history
- Obesity
- Diabetes
- Heart diseases.
- Diabetes and heart diseases and use of beta blockers
- Obesity
- Ethnicity Black men may get symptoms at a younger age.

Causes

- Hormonal changes androgen/estrogen imbalance
- Neoplastic theory is of all the elements of prostoke
- Frequency

Signs and Symptoms

- Hesitancy, urgency, weak stream and straining to pass urine
- Nocturia
- Acute retention of urine
- Chronic retention of urine
- Dribbling or leaking during urination after urination

Diagnosis

- History collection
- Physical examination -digital rectal exam to check the size and shape of the prostate.
- Urine culture and sensitivity to rule out infection
- Uroflowmetry: Urine flow test to measure the urine stream.
- Measurement of post voidal residual volume
- PSA (Prostate-Specific Antigen) blood test. High PSA levels are a sign of a large prostate.
- Ultra Sonogram
- Biopsy to rule out cancer.
- Cystocopy as part of treatment.

Management

Medical

- Alpha blockers- relax the muscles of the prostate and neck of the bladder.
- 5-Alpha Reductase Inhibitors (5-ARIs)- shrinks the prostate and prevents additional growth.
- Phosphodiesterase 5 Inhibitors (PDE5 inhibitors) - relieves the symptoms and increases the flow rate of urine

Surgical

- Transvesical suprapubic Prostatectomy
- Transurethral resection of the prostate (TURP)
- Retropubic prostatectomy.

Nursing

- Ensure patient voids at regular intervals
- Provide warm environment as cold worsens the symptoms

Lifestyle changes:

Exercise to strengthen the pelvic floor muscles

- Reduce the intake of fluids in the night before going to bed
- Avoid caffeine and alcohol

Complications

- Urinary tract infection(UTI)
- Renal stone
- Bladder outlet obstruction
- Renal failure.

BPH is not cancer, and it does not raise the risk for prostate cancer

2.27 Hydrocele

The testes, or testicles, are the two male reproductive glands that produce sperm and the male hormone testosterone. They are located in the scrotum, which is a pouch located behind the penis. Hydroceles can occur on either side of the scrotum or, in rarer cases, on both sides.

Definition

Hydrocele is a collection of excessive fluid in the tunica vaginal sac.

Types

1. **Vaginal Hydrocele** occurs when hydrocele sac in patient only in the scrotum.
2. **Infantile Hydrocele** The sac from the scrotum in patient upto the deep ingunial rings
3. **True congenital Hydrocele** The scrotal sac communicates with peritoneal cavity.
4. **Hydrocele of canal of Nuck:** It presents as a smelling in the inguinal region in female.

Risk factors

- Injury or inflammation of the scrotum

Causes

- Excessive production of fluid within the sac
- Defective absorption of fluid
- Defective lymphatic drainage of scrotal structures as in case of elephantiasis
- by connection with a hernia of the peritoneal cavity in the congenital variety, which presents as hydrocele of the cord

Symptoms

- Soft, Cystic, Not reducible, Scrotal swelling
- Scrotal pain
- Redness of the scrotum
- Heaviness
- Fullness
- Fluid accumulation with translumination
- Dragging sensation
- Fever
- Chills
- Nausea
- Vomiting

Diagnosis

- History.
- Physical examination
- Ultrasound.
- Blood and urine tests to check for underlying infection.

Management

- **Lord/s Plication** is indicated in small hydrocoeles. The sac is opened and the cut edge of the sac is plicated to tunica albuginea.
- **Partical excision and eversion of the sac:** Jaboula's operation
- Aspiration-is a temporary method.

Nursing management

- Teach about the hydrocele bandage
- Teach coping techniques

Complications

- Infection
- Inguinal hernia.
- Haematocoele
- Pyocoele

Though hydroceles are associated with males, it can occur in females too. It is termed as Hydrocele of canal of nuck. Most cases of hydrocele, which are present from the birth, resolve within the first year.

GLOSSARY

Dyspnoea	(மூச்சுத்திணறல்)	Difficulty in breathing.
Expectrant	சளி	(expulsion of mucus)
Dyspnoea	மூச்சு திணறல்	(difficulty in breathing)
Prostate	விந்துப்பை	a gland surrounding the neck of the bladder in male mammals and releasing a fluid component of semen.
Hyperplasia	மிகைப்பெருக்கத்தில்	the enlargement of an organ or tissue
Pee	சிறுநீர்	urine.
Kidney Stone	சிறுநீரக கல்	a hard mass formed in the kidneys
Hemarrhoid	மூலநோய்	a swollen vein or group of veins in the region of the anus.
Thrombus	இரத்த உறைவு	a blood clot formed in situ within the vascular system of the body and impeding blood flow.
Prolapse	இறக்கம்	a slipping forward or down of a part or organ of the body.
Lump	கட்டி	a compact mass of a substance, especially one without a definite or regular shape.
Topical	மேற்பூச்சு	applied directly to a part of the body.
Ligation	கட்டுக்கட்டுதலுக்கு	the surgical procedure of tying a ligature tightly around a blood vessel or other duct or tube in the body.
Strangulated	நெரித்து	prevent circulation of the blood supply through (a part of the body, especially a hernia) by constriction.

Hernia	**குடலிறக்கம்**	a condition in which part of an organ is displaced and protrudes through the wall of the cavity containing it (often involving the intestine at a weak point in the abdominal wall).
Womb	**கருவில்**	the organ in the lower body of a woman or female mammal where offspring are conceived and in which they gestate before birth; the uterus.
Congenital	**பிறவிக் குறைபாடு**	physical abnormality present from birth
Constipation	**மலச்சிக்கல்**	a condition in which there is difficulty in emptying the bowels, usually associated with hardened faeces.
Palpation	**பரிசபரிசோதனை**	an examination of something, usually an organ or part of the body, by touching it with the fingers or hands
Renal Stone	**சிறுநீரக கல்**	A stone formed in the kidney
Renal Colic	**சிறுநீரக வலி**	A sharp pain in the lower back that radiates in to the groin
Cystoscopy	**சிறுநீர்ப்பையின் உட்புறத்தை ஆய்வதற்கான கருவி**	Examination of the inside of urethra with a Cystoscope
Anaemia	**இரத்த சோகை**	(decreased rbc level in the blood)
Oxygen Toxicity	**ஆக்ஸிஜன் நச்சுத்தன்மை**	(harmful effects of breathing high molecular oxygen)
Renal Failure	**சிறுநீரக செயலிழப்பு**	Malfunction of the kidney
Acute Renal Failure	**கடும் சிறுநீரகக் குலைவு**	Sudden and often temporary loss of kidney function
Chronic Renal Failure	**நாட்பட்ட சிறுநீரகச் செயலிழப்பு**	Permanent loss of kidney function
Azotemia	**இரத்தத்தில் யூரியா மிகைமை**	A higher-than-normal blood level of urea
Oliguria	**சிறுநீர்க்குறைவு**	Not enough urine
Anovulation	**அண்டம் விடுபடாமை**	Absence of ovulation
Lactation	**பால்கொடுத்தல் / பாலூட்டல்**	A women who is breast feeding the child
Menopause	**மாதவிடாய் நிற்றல்**	Absence of menstruation
Anorexia Nervosa	**பசியிழப்புநோய்**	is an eating disorder characterized by low weight, fear of gaining weight, and a strong desire to be thin, resulting in food restriction
Epimenorrhoea	**மாதவிலக்கு சீரின்மை, குருங்கால மாதவிடாய்**	if the menstrual cycle is frequent and excessive bleeding
Myometrium	**கருப்பத் திசுச்சுவர்**	Middle layer of the uterine cavity

Endometrium	**கருப்பையகம்**	Inner layer of the uterus
Infertility	**மலட்டுத்தன்மை/ கருவுறா விகிதம்**	Inability of the women to become pregnant even after 1 year of on protected sexual intercourses
Autoimmune Disease	**தன்தடுப்பாற்றுநோய்**	any disease in which the body's immune system, designed to protect the body from viruses and bacteria attacks a normal (healthy) part of the body.
Endocrine Gland	**நாளமில்லாச் சுரப்பி**	glands that produces and releases hormones directly into the blood; for example, the thyroid, pituitary, adrenals, and pancreas
Gland	**சுரப்பி**	an organ or tissue that makes and sends out a hormone or other substance
Hormone	**உட்சுரப்புநீர்; இயக்கு நீர்**	substance, made by an organ or tissue, that affects the function of one or more other organs
Hyperthyroidism	**கூடுதல் தைராய்டு சுரப்பிச் செயலாக்கம்**	an overactive thyroid
Hypothyroidism	**தைராய்டு சுரப்புக் குறை**	an underactive thyroid
Immune System	**நோய் எதிர்ப்பு அமைப்பு**	the body's way of protecting itself from invaders like bacteria and virus
Hyperglycemia	**இரத்தச் சர்க்கரை அதிகரிப்பு**	high blood sugar that is a sign that diabetes is out of control. It occurs when the body does not have enough insulin or can not use the insulin it does have.
Insulin	**இன்சுலின்**	a hormone that helps the body use glucose for energy. The beta cells of the pancreas make insulin.
Metabolism	**வளர்சிதை மாற்றம்**	all of the physical and chemical processes in the body which occur when food is broken down, energy is created, and wastes are produced.
Pancreas	**கணையம்**	an organ behind the lower part of the stomach that is about the size of a hand. It makes insulin so the body can use glucose (sugar) for energy.
Peripheral Vascular Disease (Pvd)	**நோய் (PVD) / புற இரத்த நாளம்**	any abnormal condition that affects the blood vessels outside the heart and lymphatic vessels. Often occurs as decreased blood flow to the hands and feet. People who have had diabetes for a long time may develop PVD.
Polydipsia	**வெகுதாகம் / வெகு நீர் வேட்கை**	excessive thirst that lasts for long periods of time; may be a sign of diabetes.
Polyphagia	**அளப்பரிய பசி**	excessive hunger and eating.

Evaluation

I. Choose the correct answer

1. The common characteristic feature of persistent asthma is
   a) Family history
   b) Airway inflammation
   c) Oral steroids
   d) Nocturnal wheeze.
2. Simple instrument to roughly determine lung function is a
   a) Barometer
   b) Manometer
   c) Peak flow meter
   d) Sphygmomanometer
3. What is the most common cause of chronic obstructive pulmonary disease (COPD)?
   a) Bronchiectasis
   b) Chronic bronchitis
   c) Cigarette smoking
   d) Emphysema
4. What is BPH
   a) Benign Prostate Hyperplasia
   b) Blood Pressure High
   c) Big Painful Headache
5. What is Prostatitis
   a) Inflammation of the urethra
   b) Inflammation of the prostate
   c) Inflammation of the bladder
6. What is PSA
   a) Public Service Announcement
   b) Psoriatic Arthritis
   c) Prostate-Specific Antigen
7. Common abdominal Hernia is
   a) Inguinal Hernia
   b) Sports Hernia
   c) Hiatal Hernia
8. Cause of Hernia is
   a) Over eating
   b) Obesity
   c) Snoring
9. Symptom of Hernia is
   a) Coughing
   a) Sneezing
   b) Swelling
10. Prevention of Hernia is
    a) Eating more food
    b) Drinking alcohol
    c) Not smoking

L7QAW

11. Complication of hernia is
    a) Strangulation
    b) Incision
    c) Vomiting
12. The bluish discoloration of the skin and nail beds is called?
    a) Cyanosis b) Anameia
    c) Hemorrhage d) Dyspnea
13. The device fits snugly over the mouth and nose and is secured in place with a strap is?
    a) BP Apparatus
    b) Nasal cannula
    c) O2 tent
    d) face mask
14. Which of the following best describes chronic renal failure?
    a) Rapid decreases in urinary output with azotemia
    b) Progressive irreversible destruction of both kidney
    c) Creatinine clearance increases as urinary output decreases
15. What are the alert signs and symptoms of oliguric phase of acute renal failure?
    a) Urine with high specific gravity and low sodium concentration
    b) Hypotension and fluid volume deficit
    c) Fluid volume excess and hypertension
    d) Kussmaul's respiration and increased appetite

16. One of the symptoms of hypothyroidism is
    a) Intolerance to cold
    b) Hair loss
    c) All of the above

17. A person with untreated hypothyroidism may also suffer from_____
    a) High cholesterol
    b) Low blood pressure
    c) Low blood sugar
    d) None of the above

18. How is hypothyroidism treated?
    a) With radiation
    b) With surgery
    c) With a synthetic hormone
    d) The condition can't be treated

19. Where is the thyroid gland located?
    a) At the base of the spine
    b) Neck
    c) Abdomen
    d) Back

20. Thyroxine is contains the following.
    a) Tyrosine b) Selenium
    c) Iodine d) a and c

21. Menstrual bleeding that is scanty and last for less than 2 days.
    a) Oligomenorhea b) Hypomenorrhea
    c) Metrorhagia d) Menorrhagia

22. Absence of menarche until the age of 16 years
    a) Amenorrhea
    b) Primary Amenorrhea
    c) Secondary Amenorrhea
    d) Dysmenorrhea

23. Benign tumours that originate in the uterus
    a) Fibroids uterus b) Prolapse
    c) Rectocele d) Cystocele

24. Expansion of HSG
    a) Hystero salpinjography
    b) Ultrasonography
    c) Hydro sonography
    d) Hystoscopy

25. The risk factors for type 1diabetes include all of the following except
    a) Diet b) Genetic
    c) Autoimmune d) Environmental

26. Prediabetes is associated with all of the following except
    a) Increased risk of developing type 2 diabetes
    b) Impaired glucose tolerance
    c) Risk of heart disease and stroke

27. Risk factors for type 2 diabetes include all of the following except
    a) Advanced age b) Obesity
    c) Smoking d) Physical inactivity

28. Untreated diabetes may result in all of the following except
    a) Blindness
    b) Cardiovascular disease
    c) Kidney disease
    d) Tinnitus

29. Blood sugar is well controlled when Hemoglobin A1C is
    a) Below 7%
    b) Between 12%-15%
    c) Less than 180 mg/dL
    d) Between 90 and 130 mg/dl

II. Answer the following questions in one or two lines

1. Define asthma.
2. Define Dyspnoea?
3. Define COPD?
4. What is the main cause of COPD?
5. What is haemorrhoids?
6. Name any two types of haemorrhoids?
7. What is thrombosed haemorrhoids?
8. What is the use of digital examination?
9. What is hernia?
10. Name any 2 types of hernia?

III. Short notes

1. List down Triggering factors for Bronchial Asthma.
2. Explain briefly about nursing management of Bronchial asthma.
3. Explain about stages of COPD?
4. Draw the grades of the internal haemorrhoids?
5. List out the symptoms of the haemorrhoids?
6. Write the home remedy for haemorrhoids?
7. Discuss the preventive measures of haemorrhoids?
8. Write the risk factors of hernia?
9. Write the symptoms of hernia?
10. List out the causes of hernia

IV. Long essay

1. Mrs. Padma 68years old lady got admitted in the medical ward with the complaints of cough, wheezing, and dyspnoea. So it is diagnosed as bronchial asthma. Write in detail about it.
2. Explain in detail about the management and preventive aspects of COPD?
3. Write about the minimal invasive procedures?
4. Discuss the management for Haemorrhoids?
5. Discuss about the Benign Prostate Hypertrophy(BPH)?
6. Describe about the Hernia in detail?
7. What is Renal stone? Write the causes, signs & symptoms, diagnostic management of Renal stones?
8. Write about management prevention of Renal stones?
9. Explain in detail about the procedure of oxygen administration?
10. Describe about the renal failure in detail?

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3. Joyce, M Black and Esther Jacobs.1993. Luckmann and Surensen's Medical Surgical Nursing,4th edition Philadelphia: W.B. saunders, company
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INTERNET LINKS

1. Philadelphia:W.B.saunders,company
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4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2696883
5. https://www.mayoclinic.org/diseases-conditions/asthma/symptoms.../syc-20369653
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8. Www.lung.org › Lung Health and Diseases › Lung Disease
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11. https://en.wikipedia.org/wiki/Benign_prostatic_hyperplasia
12. https://www.webmd.com › Men's Health › Prostate Enlargement/BPH
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16. https://www.webmd.com › Digestive Disorders › Reference
17. https://www.healthline.com/health/hemorrhoids
18. https://www.healthline.com/health/hernia
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20. https://en.wikipedia.org/wiki/Hernia
21. https://www.rxlist.com/hernia/drugs-condition.htm
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ICT CORNER

MEDICAL SURGERY

Through this activity you will be able to associate symptoms with conditions and learn to differentiate the common and serious conditions. anatomy

Steps

- **Step 1:** Type the URL link given below in the browser or scan the QR code.
- **Step 2:** Fill the mandatory fields such as 'Age, Gender and Region'.
- **Step 3:** Input some symptoms in the search tab and click the search button.
- **Step 4:** A list of possible conditions are displayed on the right side of the activity window. Serious complications are marked with red flag icon.

URL : https://symptomchecker.isabelhealthcare.com/suggest_diagnoses_advanced/landing_page

*Pictures are indicative only

*Allow flash player.