**BLOOD AND CADIOVASCULAR DISORDERS**

**Cardinal signs**

Chest pains, dyspnoea, oedema, fatigue, palpitations, dizziness and loss of consciousness.

**Risk Factors**

**Modifiable**

Increased fat intake

Smoking

Obesity

**Non modifiable**

Race-Africans are more prone to HTN

Old age

Positive family hx

Gender-females suffer lower HTN than males

**Physical assessment of client**

Gypnosis

Vanthelasma-yellow patches under skin

Distension of neck veins especially jugular vein

Cold moist/clammy skin

Features of dehydration due to increased sweating

Echymosis-bleeding under the skin

Wounds/scars-impairment perfusion to internal tissues

**ANEURYSM**

Abnormal distension of blood vessels

**Risk factors**

Atheroma

Defective formation of collagen in arterial wall

Genetic defects

Trauma

Acute/chronic conditions e.g. TB, syphilis

Old age

Gender

**Types of aneurysms**

**1 Fusiform**

Spindle shaped distension mainly occurs in the abdominal aorta and less common in the iliac arteries.

**2 Saccular**

Bulge on one side of the artery.

Berry aneurysm occurs in thin walls of circular arteriosus.

May be congenital, ass and defective collagen production, edematosis changes.

**3 Dissecting**

Mainly occurs at arch of aorta.

Caused by infiltration of blood between endothelium and tunica media.

Begins at site of endothelial damage.

**4 Micro-aneurysm**

Are fusiform or saccular aneurysmic.

Occurs in small arteries and arterioles in the brain.

Recurrent strokes(Transcend Ischemia Attacks-TIAs) are common due to thrombosis in aneurysms or hemorrhage due to rupture.

**Pathology**

Predisposing odns lead to formation of plaque causing degenerative changes in the tunica media, leading to loss of elasticity. This makes the artery to weaken and eventually dilation occurs.

**Dx**

Hx taking

Ct scan

Ultra sonography

Magnetic Resonance Imaging-MRI

CXR

Clinical features

Aortography

Comphins chest pains

**Mnx**

Treat the cause e.g. HTN-manage elevated pressure

Repair aneurysm surgically and maintain vascular continuity and vascular graft-hemorrhage, embolism, shock, anticoagulants

Antihypertensive to manage HTN-hydrolazine

Thrombosis-use thrombolitis

Exercise and utrition to reduce formation of thrombi

Avoid lifting heavy things

Nipride used by continuous i.v drip for emergency low bp

**GANGRENE**

Tissues die due to interrupted blood and oxygen supply

**Types of gangrene**

**1 Dry gangrene**

Starts at distal parts of the limb due to ischemia

Occurs in toes and feet of the elderly due to arteriosclerosis

Is due to artificial occlusion

Usually develops slowly

Affected part is dry, shrunken, dark red

**2 Wet gangrene**

Occurs in naturally moist tissues and organs-cervix, mouth, lungs, bowels, etc

Tissues are infected by saprogenic micro-organisms which cause organs to swell and emit foul smell

Affected part is edematous, soft, rotten and dark

Poor prognosis than dry gangrene due to septicemia(numerous bacteria)

Develops quickly due to blockage of blood flow;stagnant blood promotes rapid growth of bacteria

**3 Gas gangrene**

Caused by Destridium perfringes

Bacterial infection that produces within tissues

Muscles have gas exudates

Infections spread rapidly as gases produced by bacteria expand and infiltrate

**Other types of gangrene**

**Fournie gangrene**-affects male genitalia and inguinal

**Internal gangrene**-affects internal organs

**Narcotizing facilities**-affects deep skin layers

**Normal gangrene**-affects the face

**Causes**

Infection,

injury, computation, neuropathy, loss of blood supply, complication of long time healing

**Predisposing factors**

Serious injury, blood vessel disease, DM, suppressed immune system, surgery, long-term smoking

**Pathophysiology**

Exotocin produced by Destridium perfringes found mostly in soil enter muscles through a wound and proliferate in necrotic tissue secreting powerful toxins which destroy nearby tissues

**Clinical features**

Cyanosis, foul smell, loss of feeling in affected tissue, confusion, fever, gas in tissue, general ill feeling, low blood pressure, persistent and severe pain

**Dx**

Physical examination, arteriogram, blood test, culture, tissue microscopy, surgery, x-ray

**Mnx**

Amputation-to avoid multiplication

Surgery

Antibiotics-in case of infection

Debridement-removal of dead tissues

Maggot therapy

Hyperbaric oxygen therapy-high oxygen room; cools the area to lower metastasis

Isolate the patient because of infection

Dry affected part

**Complications**

Infection, disability, hemorrhage, prolonged healing of wound

**Prevention**

Treat early

Regular examination

Take good care of wound

ARTHEROSCLEROSIS

Is acondition where the ateries become narrowed and hardened due to excessive build up of plague around the atreia wall(

(Lipids,calcium blood components,carbohydrates and fibrous tissues

)

The diseasedisrups the flow of blood around the body causing serious cardiac complications

PATHOLOGY

Arteries contain thin layers all that keeps the arteries smooth and allow blood to floweasily.Arterioschelerosis starts when the endocardium becomes damaged allowing cholesterol to accumulate in the artery wall.The body sends moucrophage,WBC to clean up the cholestral But the cellget stuck over resulting in plague building up consisting of blood and cholestral microghages in the blood cells. The plague clogs up the artery disrupting the flow of blood around the body.This pontentially causes blood clots that can result in life threatening conditions e,g heart attack,strockes and cardiovascular diseases.The condtion effects mitra but mainly the large high pressure arteries are affected.

RISK FACTORS

Modifiable factors High serum cholestral level

Smooking-nicotinedecreases blood flow to the extreamities and the heart rate snd BP causing vasoconstriction.

nicotine damages endotheliel lining making it rough thereby allowing deposition of fats

Diabetes with increased blood sugars. The cells cant use sugar so istead the cells use fat in the tissues to produce innergy

Stress –increases increases blood pressure with vasoconstriction

Tobbacco users-smoke causes constriction of endothelial lining

Obesity- increases fat in the body

Physical inactivity

NON MODIFIABLE FACTORS

Race it is more common among the white pple

Gender- more in men than women but also increases in ladie after menopause

Age –( 35-45 yrs\_

CLINICAL PRESENTATION

Carotide artery supplying the brain. Patients can suffer stroke and experience weakness, difficulty in breathing, headache, facila numbness or paralysis

Conary artery-It may cause angina pectoris and heart attack with symptoms of extream anxiety,chest pain and coughing

Renal arteries –swelling in the hands and feets with difficulties in concentration

Periphral arteries- Causes leg pain (pain described ascrumbing dullness on the legs and feet.

Impotence in men.

COMPLICATIONS

Stroke Heart attack

Paralysis Death

DIAGNOSIS

History taking

Carry out Physical Assessment of the patient

Blood tests eg blood sugar,serum cholestral, Ultrasound scan, computed tomography scan

TREATMENT

Health education on change of lifestyle for those at risk

Hypertension---regular check up

Take prescribed medications

Stop alcohol intake ,encourage physical exercises,reduce wt

Eleveted serum lipid-Reduce total fat intake,reduce saturated salt

Take prescribed medication

Tobacco users—Enroll in smoking seasation programs,encourage substitute others and avoid exposure to second drug smokers.

Physical activities—develop and maintain routine physical activities and exercises

Obesity-change eating parttern and habits,reduce caloric intake to achieve boby mass index of 5-24kg/m2. Increase physical activities, Reduce chunk food

Diabetes Melitus- Advice patient on recomened diet to reduce wt,

Anti DM monitor blood sugar regularly

Medication

Chlestral lowring eg drugs like lveastantin,fluvastatin (interfiers which are pain killers

Antiplate late therapy-Asprin and pravastatin which pain killers

Surgery-Severe cases may be traered witn angioplasty or coronary artery by pass graft (drugs that breake down chlestral)

ARTERIOSCEROSIS

Defination

Is the thickening and hardening of arterial walls due to infiltration by fibrous tissues and calcium into tunica media

RISK FACTORS

Smoking,DM, HTN, stress

Infection-causes scar where healing causes arteriosclerosis

Pathophysilogy

Entry of fibrous tissue and calcium into the smooth muscles(tunica media) causes loss of elasticisty, narrowing and peripheral resistance (PR)

CLINICAL FEATURES (MANIFESTATION)

Cramping or aching sensation in the veins and gluteal muscle, thighs

Chest pain, thin shiny skin, impaired pufussion,thick toe nails,ulceration of gangrene,cold numb lower limbs, pain at rest relieved by elevating legs

DIAGNOSIS, angiography, ultrasonogrphy scan

MANAGEMENT

Anti Platelete is prone to clotanticoagulants

Arterialgafting-creatinga graft areBallon angiography to expand the lume

Use ot by pass t expand the lumen t improve perfusion of blood flow

COMPLICATIONS

Ganrene

Heamorrhage

Infection

Aneurrysm

HEART FAILURE

In ability of the heart to pumb surficient blood to tissues to meet demant for O2 AND NUTRIENTS

Causes

HTN coronary heart disease

Rheumatic heart disease pulmonary

Angina Systemic disease ie TG, DM