

SHOCK

Lec:4

Surgery

2nd stage

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#CMSHOCK | ILLUSTRATION BY YEJI YUN

INTRODUCTION

- Shock is a failure of cardio vascular system to deliver enough oxygen & nutrients to meet cellular metabolic needs .Shock may develop rapidly or slowly all the system of the body included in this in shock condition the body will struggle for survive then the haemostatic mechanism (coagulation or blood clotting)will occur it provide blood circulation. It is a remedy to stop hemorrhage if shock is due to hemorrhage

DEFINITION

- ❖ Shock is defined as a complex life threatening condition characterized by inadequate blood flow to the tissue & cells of the body

INCIDENCE

- HYPOVOLUMIC

Affects all ages

Affects males & females equally

- CARDIOGENIC SHOCK

Typically affects patient with area of infarction involving 40% or more left ventricular muscle mass

- SEPTIC SHOCK

Possible in any person with impaired immunity

TYPES

- **Hypovolemic** (inadequate circulatory contractility)
- **Cardiogenic** (decrease myocardial contractility)
- **Obstructive or** (inadequate circulatory blood flow caused by a physical impairment or obstructive)
- **Distribute** [decrease vascular resistance]
 - * Anaphylactic shock
 - * Septic shock
 - * Neurogenic shock



HYPOVOLUMIC SHOCK

DEFINITION

- It is a most common shock characterized by the decreased intra vascular volume

ETIOLOGY

❖ EXTERNAL FLUID LOSS

Surgery
vomiting
diarrhea
excessive urination

❖ INTERNAL FLUID SHIFTING

Hemorrhage
burns
ascitis
edema

PATHOPHYSIOLOGY

Decreased blood volume



Decreased venous return



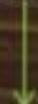
Decreased stroke volume



Decreased cardiac output



Decreased B.P



Decreased tissue perfusion

CLINICAL MANIFESTATION

- RAPID PULSE
- TACHYPNEA
- COOL & CLAMMY SKIN
- CYANOSIS

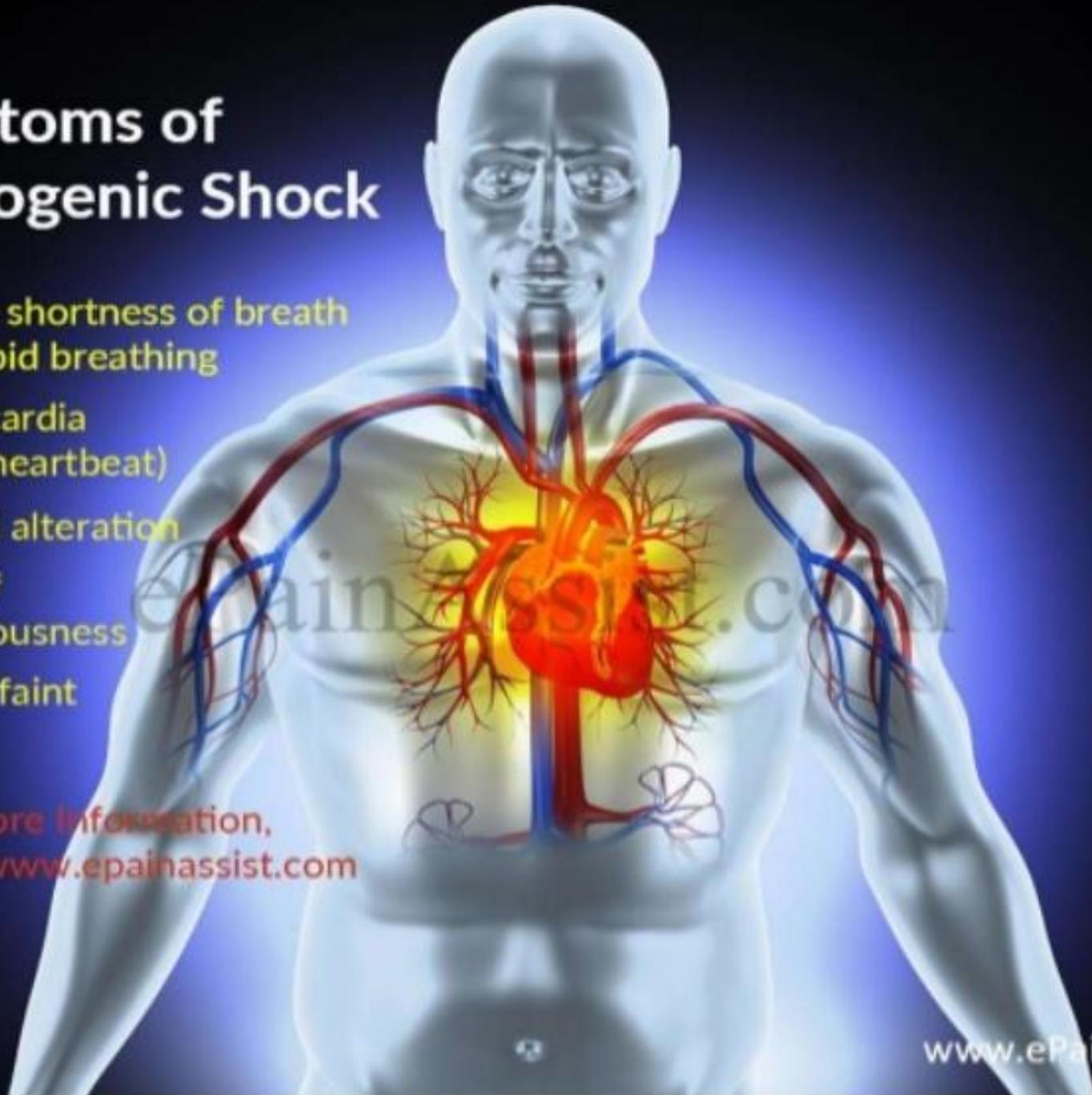
MEDICAL MANAGEMENT

- Restore intravascular volume
- Re -distribute fluid volume
- Correct underlined causes

Symptoms of Cardiogenic Shock

- Severe shortness of breath and rapid breathing
- Tachycardia (rapid heartbeat)
- Mental alteration
- Loss of consciousness
- Weak/faint pulse

For More Information,
Visit: www.ePainAssist.com





CARDIOGENIC SHOCK

DEFINITION

- It occurs due to the impaired heart ability to contract & ejection of blood
- ETIOLOGY
 - CORONARY CAUSE
Myocardial infraction
 - NON CORONARY CAUSE
Cardiomyopathy
valvar damage
cardiac temponade

PATHOPHYSIOLOGY

Decreased cardiac contractility



Decreased stroke volume



Decreased cardiac output



Pulmonary
Congestion



decreased systemic
tissue perfusion



decreased
coronary
artery
perfusion

CLINICAL MANIFESTATION

- Angina pain
- Decreased systolic B.P
- Mental confusion
- Fatigue
- Pulmonary congestion
- Decreased urine out put
- Hemodynamic instability

MEDICAL MANAGEMENT

- Correction of underlined causes
- Initiation of first line treatment
- Oxygenation
- Pain control
- Hemodynamic monitoring

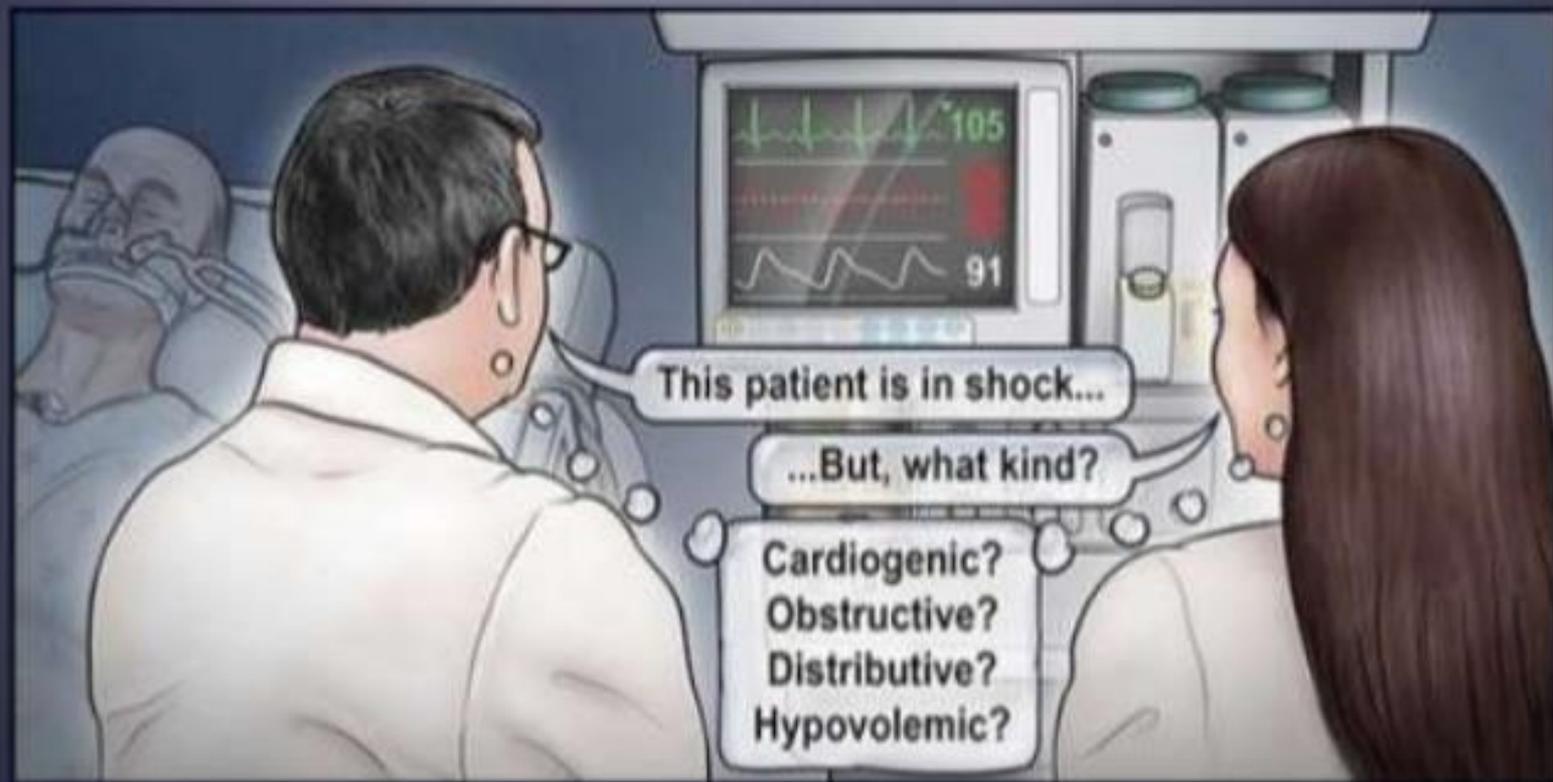
PHARMACHOLOGICAL THERAPY

- ✓ DOBUTAMINE
- ✓ NITROGLYCERINE
- ✓ DOPAMINE
- ✓ OTHER VASO ACTIVE MEDICATION
- ✓ ANTI ARRHYTHMIC MEDICATION

COMPLICATION

- NEUROLOGIC IMPAIRMENT
- ACUTE RESPIRATORY DISTRESS SYNDROME
- RENAL FAILURE

CIRCULATORY SHOCK





CIRCULATORY SHOCK

Signs of Shock

- Due to hypoperfusion:
 - Decreased “mentation” - confused, sluggish, anxious
 - Skin cold, mottled

Signs of Shock

- Pulse: Rapid, weak, thready
- Tachycardia
- Respirations
 - Shallow, irregular, labored
- May be tachypnea (increased respiratory rate.)

Causes of Shock – a quick list:

- Heart Attack
- Anaphylaxis
- Loss of Circulating Blood Volume (bleeding, burns, dehydration)
- Venous Dilation (allergy, pain, drugs, heat stroke, infection)
- High or Low Body Temperature

SEPTIC SHOCK

- DEFINITION: Severe bacterial infection or septicemia induces septic shock

- ETIOLOGY

Infection

gram negative bacteria causing infection

staphylococcal infection

U.T.I

indwelling lines & catheter (inserted in to bladder)

respiratory infection

DISEASE: D.M . AIDS

PATHOPHYSIOLOGY

Vasodilation

↓
Mal distribution of blood volume

↓
Decreased venous return

↓
Decreased stroke volume (the volume of blood pumped from the left ventricle per beat (70 ml) 70 kg

↓
Decreased cardiac out put

↓
Decreased tissue perfusion

CLINICAL MANIFESTATION

➤ FIRST STAGE

- Patient is febrile
- Bounding pulse (a strong throbbing increase lub dub)felt over one of the arteries in the body . It is due to a forceful heartbeat .
- Flushed skin
- Tachycardia
- Decreased urine out put
- Decreased bowel sound

➤ SECOND STAGE

- Low B.P
- Skin cool & pale
- Temperature normal or below normal

MEDICAL MANAGEMENT

- Identify the cause & eliminate the cause
 - Blood specimen
 - Urine specimen
 - Drainage of wound
 - Remove old I.V line & put new I.V line
 - Antibiotic coated I.V line should be established
 - Abscess are drained
 - Fluid replacement
- CULTURE



NEUROGENIC SHOCK

DEFINITION

- It cause vasodilation due to loss of sympathetic tone (damage to the central nervous system
- ETIOLOGY
 - Spinal cord injuries
 - Nervous tissue damage
 - Depressant action of nervous system
 - Lack of glucose

CLINICAL MANIFESTATION

- ❖ Dry ,warm skin rather than cool Moist skin
- ❖ Bradycardia rather than the tachycardia



ANAPHYLACTIC SHOCK

DEFINITION

- It occurs in severe allergic reaction

ETIOLOGY

- Penicillin sensitivity
- Transfusion reaction
- Vasodilation
- Capillary permeability(the capacity of a blood vessel wall to allow for the flow of small molecules (drug, nutrient ,water,iron) or even whole cells (lymphocytes on their way to the site of inflammation)

CLINICAL MANIFESTATION

- Mild

peripheral tingling, sensation of warm, fullness of mouth & throat, nasal congestion

- Moderate

flushing (red in mouth), warmth, anxiety & itching

- Severe

bronchospasm, dyspnea, cough,

MEDICAL MANAGEMENT

- Identify the cause & solve it
- Decrease vasodilatation
- Administer medication
 - epinephrine
 - diphenhydramine
 - nebulization
 - albuterol

NURSING MANAGEMENT

- ✓ Assess the patient for any previous allergy to medicine, fruits etc
- ✓ When we administer any new medicine we have to observe the side effect of it
- ✓ We must have the knowledge about the sign symptoms of shock
- ✓ Observe the response to the treatment

ASSESSMENT & DIAGNOSTIC PROCEDURE

- ✓ NON INVASIVE PROCEDURE
 - spirometry
 - pulse oximeter
 - arterial blood gas analysis
- ✓ C.V.P MEASUREMENT
- ✓ E.C.G
- ✓ CHEST X-RAY
- ✓ HEAMODYNAMIC MONITORING



Thank you