Unit IV – Problem 9 – Clinical: Management of Shock

- **What is shock?**
  - Global tissue hypoperfusion in which there is inadequate oxygen delivery to meet the metabolic demands → this will result in anaerobic metabolism and lactic acidosis.
- **What are the signs of shock (presence of ≥ 2 clinical signs)?**
  - Tachycardia (> 120 beats/ minute).
  - Hypotension (systolic blood pressure < 90 mmHg).
  - Tachypnea (respiratory rate > 25 breaths/ minute).
  - Altered mental status.
  - Cold extremities.
  - Oliguria (< 0.5ml/ kg/ hour).
- **What are the laboratory investigations which must be done?**
  - CBC.
  - Liver function tests, urea and creatinine.
  - Lactate.
  - Coagulation studies.
  - Cultures.
  - Arterial blood gas (ABG).
  - Chest x-ray.
- **What are the goals of treatment?**
  - **ABC:**
    - ✓ **A**: **A**irway.
    - ✓ **B**: control work of **B**reathing.
    - ✓ **C**: optimize **C**irculation.
- **How to optimize circulation?**
  - Administer isotonic solution or blood. Notice that 4-6 liters of fluid might be needed!
  - **Titrated to:**
    - ✓ Improve heart rate.
    - ✓ Improve blood pressure.
    - ✓ Urine output reaches 30ml/ hour.
- **What are the types of shock (for more details, read physiology note):**

Hypovolemic	• Hemorrhagic. • Non-Hemorrhagic
Redistributive	• Septic • Anaphylactic. • Neurogenic.
Cardiogenic	-
Obstructive	-

- **Hypovolemic shock:**

Hemorrhagic	Non-hemorrhagic
GI bleed; trauma; massive hemoptysis; Abdominal aortic aneurysm rupture; ectopic pregnancy; post-partum bleeding	Vomiting; diarrhea; bowel obstruction; pancreatitis; Burns

- **Classification of hemorrhagic shock:**

Class-I	Respiratory rate is between 14-20 and the patient is slightly anxious
Class-II	Pulse rate is more than 100
Class-III	Blood pressure is decreased (hypotension)

- **Management of hypovolemic shock:**
  - ABC
  - Establish two large bore IVs or a central line (normal saline or lactate ringers).
  - Control any bleeding.