Principles & Critical Care Medicine

1st Course
Lecture : 8

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Introduction

- Critical care medicine manages life-threatening conditions with continuous monitoring and organ support.

Objectives

- Define critical care, identify ICU principles, understand monitoring and hemodynamic support.

Definition

- Care for patients with organ dysfunction or instability, usually in ICUs.

- **Levels of Care**

1. Primary – basic;
2. Secondary – hospital;
3. Tertiary – ICU/CCU specialized care.

ICU Principles

- ABCDE approach: Airway, Breathing, Circulation, Disability, Exposure.

- Monitoring

1. ECG
2. BP
3. SpO2
4. CVP
5. Urine output.

Common ICU Admissions

- Respiratory failure, sepsis, multi-organ failure, postoperative cases.

- Airway Management
- Intubation, ventilation, suctioning, aspiration prevention

- Mechanical Ventilation.
- Indications: respiratory failure; Modes: VC, PC, SIMV, CPAP, BiPAP.

Hemodynamic Support

- Fluids, vasopressors (NE), inotropes (dopamine, dobutamine).

Shock Management

- Hypovolemic, cardiogenic, distributive, obstructive – restore perfusion.

Sepsis

- Life-threatening infection – manage with fluids, antibiotics, vasopressors.

Neurological Emergencies

- TBI, stroke, status epilepticus – monitor GCS and ICP.

Renal Support

- Monitor urine, avoid nephrotoxins, dialysis if needed.

Nutrition

- Enteral or parenteral feeding to prevent catabolism.

Infection Control

- Hand hygiene, sterile lines, disinfection, isolation.

Sedation & Pain Control

- Midazolam, propofol, fentanyl – monitor depth.

Ethical Aspects

- Consent, dignity, end-of-life care, DNR policy.

Technologist Role

- Assist airway, ventilator setup, monitor, maintain sterility.

ICU Complications

- VAP, pressure sores, sepsis, delirium.

Summary

- Critical care integrates life support, monitoring, and ethics for patient survival.