

Neurocritical Care

- I. Cerebral blood flow and metabolism
 - A. Vascular anatomy
 - 1. Arterial anatomy
 - 2. Venous anatomy
 - B. Normal physiology and pathophysiology
 - 1. Cerebral perfusion and autoregulation
 - 2. Blood flow thresholds
 - C. Monitoring
 - 1. Cerebral
 - 2. Systemic
- II. Intracranial hypertension, cerebral perfusion, and brain compression
 - A. Cerebral edema
 - 1. Vasogenic
 - 2. Cytotoxic
 - B. Space-occupying lesions
 - C. Herniation syndromes
 - D. ICP physiology and management
 - 1. ICP control
 - 2. CPP optimization
- III. Seizure
 - A. Clinical manifestations
 - B. Diagnosis
 - 1. PLEDs/epileptiform activity
 - 2. Focal seizures
 - 3. Generalized seizures
 - 4. Status epilepticus
 - C. Treatment
 - 1. Airway protection
 - 2. Benzodiazepines
 - 3. Anti-epileptic medications
 - a. Agents
 - b. Side effects
- IV. Cardiovascular physiology
 - A. Arrhythmias
 - 1. Atrial
 - a. Atrial fibrillation and flutter
 - b. AV block
 - 2. Ventricular
 - a. Ventricular tachycardia
 - b. Other ventricular arrhythmias
 - B. Ischemia
 - 1. STEMI
 - 2. NSTEMI
 - C. Heart failure

1. Systolic failure
 2. Diastolic failure
 3. Stress cardiomyopathy
 - D. Shock
 - E. Cardiac arrest
 - F. Hypertension
- V. Respiratory physiology and management
 - A. Hypoxia
 - B. Hypercarbia
 - C. Ventilator management
 - D. Non-invasive ventilation
- VI. Common medical complications
 - A. Aspiration pneumonia
 - B. Sepsis
 - C. Electrolyte imbalance
 1. Hyponatremia
 - a. SIADH
 - b. CSW
 2. Hypernatremia/DI
 3. Glucose management
 4. Potassium and magnesium
 - D. DVT and PE
 1. Prophylaxis
 2. Diagnosis
 3. Treatment
 - E. Acute kidney injury
 1. Definition
 2. Diagnosis
 3. Treatment
 - F. Acid base disorders
 - G. GI bleeding
 - H. Coagulation disorders
 1. Anticoagulants and antiplatelet agents
 2. Reversal of coagulopathies
 3. Hypercoagulable states
 - I. Nosocomial infections
 1. Ventilator associated pneumonia
 2. Surgical site infection
 - J. Endocrine
 - K. Nutritional
 - L. Anesthesia and sedation
 1. Agents
 2. Side effects
- VII. Coma and brain death
 - A. Encephalopathy
 1. Structural causes

2. Metabolic causes

3. ICU delirium

B. Coma

C. Brain death

1. Definition

2. Diagnosis

VIII. Neurological conditions

A. Acute inflammatory demyelinating polyneuropathy

B. Myasthenia gravis

C. Multiple sclerosis/inflammatory disease

D. CNS infections