NEOMED MMScA Program
Clinical Keywords
General Rotation – Administration of Anesthesia

GENERAL ANESTHESIA

- **Implementation and monitoring:**
  - IV vs. inhalational induction
  - TIVA
  - Stages and depth of anesthesia
  - Anesthetic maintenance
  - ASA monitoring standards
- **Emergence from anesthesia and postoperative management**
- **Extubation:**
  - Awake vs. deep extubations
  - Extubation criteria
- **Complications:**
  - Light anesthesia
  - Corneal abrasions
  - Blindness
  - Detection and management of MH

VENTILATION UNDER ANESTHESIA

- **Spontaneous vs. control ventilation:**
  - Advantages and disadvantages
- **Intubation vs. LMA placement**
  - Advantages and disadvantages, contraindications to LMA placement
- **Proper positioning for intubation**
- **Oral and nasal intubation**
  - Cormack and Lehane laryngoscopy view classification
- **Detection and management of airway complications:**
  - Soft tissue obstruction
  - Airway swelling
  - Bronchospasm
  - Laryngospasm
  - Post obstructive pulmonary edema
  - Aspiration
  - Airway trauma
  - Airway management for trauma patients
  - Epistaxis
- **Difficult airway and airway management techniques:**
  - Management of the difficult airway
  - ASA difficult airway algorithm
  - Awake vs. asleep intubation techniques for difficult intubation
  - Fiberoptics
  - Bougies
  - Cricothyrotomy/surgical airway
  - Retrograde intubation
  - Jet ventilation
  - Airway management for foreign body aspiration

PATIENT POSITIONING

- **Proper positions, risk factors, complications, and avoidance of injury**

FLUID MANAGEMENT

- **Estimated blood volume, total body water estimation and calculations, estimated weight loss, estimated fluid compartments (intracellular, interstitial, blood), hydrostatic and oncotic pressure, plasma osmolality, molarity and tonicity**
- **Hypotonic, isotonic, and hypertonic fluids:**
  - Indications and potential complications

- **Replacing fluid loss (blood, insensible, deficit, third spacing, and maintenance losses), crystalloids vs. colloids**

PHARMACOKINETICS AND PHARMACODYNAMICS

- **Routes of elimination, differences in dosing amongst age groups**

INHALATIONAL ANESTHETICS

- **Effects on central nervous system (CNS), circulation, respiration, neuromuscular function, renal function, hepatic function; nitrous oxide and closed spaces, adverse effects and side effects, operating room pollution**
- **Onset, potency, and emergence:**
    - Inhalational induction speed
    - Blood: gas coefficients
    - Ostwald coefficient
    - Minimum Alveolar Concentration (MAC)
    - Fa:Fi curve
    - Concentration effect
    - Second gas effect
    - Washout of inhalational agents

ANESTHETIC MAINTENANCE AGENTS

- **Intravenous (IV) induction agents**
    - Indications and contraindications, mechanism of action, metabolism and excretion
    - Effects on circulation, respiration, CNS; adverse effects and side effects
- **Muscle relaxants**
    - Indications and contraindications, complications, mechanism of action, biotransformation and excretion, prolongation of action
    - Drug interactions (antibiotics, antiepileptics, magnesium, inhalational anesthetics) and potential side effects (pseudocholinesterase deficiency, muscle soreness, etc)
    - Monitoring techniques, antagonism of blockade, residual paralysis, muscle soreness

NON-ANESTHETIC DRUGS AND ADJUNCTS TO ANESTHESIA

- **Analgesics and reversal agents:**
    - Opioids
    - Opioid agonist-antagonist
    - Opioid receptors
    - Anti-inflammatory drugs
    - Tylenol/Ofirmev
    - Opioid antagonists
- **Sedatives and reversal agents:**
    - Benzodiazepines
    - Barbiturates
    - Antihistamines
    - Dissociative agents
    - Alpha-2 agonists
    - Benzodiazepine antagonists
- **Diuretics:**
    - Mechanism of action
    - Adverse effects
    - Effects on electrolytes and acid-base balance