Exam 1 Concept Review

Endotracheal Tube care

- Administer sedation and neuromuscular blocking agents
- Intubation attempts cant last longer than 30 seconds and then re-oxygenate before another attempt to intubate
- Monitor VS and check for proper tube placement
- Auscultate for breath sounds bilaterally after intubation
- Secure with tape
- Monitor for hypoxemia, dysrhythmias, and aspiration

Incorrect position of ET tube

- Common misplacement is often in the right main bronchus, pull back ET tube and reassess
- Common signs you are in the right main bronchus and not above the carina
    - Right sided breath sounds heard but left sided breath sounds are absent, left sided chest wall expansion is absent, possible low SpO2

Chest tube Care

- Obtain informed consent, position patient in supine or semi-fowlers, place arm over head, chest scan following insertion to check placement, monitor initial drainage
- After procedure assess vitals, breath sounds, intake and output, oxygen, color, and respiratory effort every 4 hours, coughing and deep breathing every 2 hours, keep the system below chest level, monitor for kinks, occlusions, or loose connections, keep patient in high fowlers
- Removal procedure includes providing pain medications 30 minutes prior, tell patient to take a deep breath, exhale and bear down or hold breath, obtain x-ray

Pneumothorax

- Presence of air or gas in the pleural space that causes lung collapse
    - Tension pneumothorax: air enters the pleural space during inspiration through a one way valve and is not able to exit upon expiration, this air causes pressure on the heart and lung and results in the increase in pressure compresses blood vessels and limiting venous return which leads to a decrease in CO
        - Death can result if not treated immediately
        - As a result, air and pressure continue to rise in the pleural cavity which causes a mediastinal shift
    - Spontaneous pneumothorax: occurs when there has been no trauma; a small bleb on the lung ruptures and air enters the pleural space

Chest tubes (expected findings in the chambers)

- 2 chamber: water seal contains 2 cm of water
- Normal fluctuation of water within the water seal chamber is called tidaling
    - Monitor for the stoppage of bubbling

Blood Administration (important VS)

- Monitor blood pressure, SPO2, temperature, pulse, and respiration rate

Blood Administration (administration times)

- 1-2ml/minute (60-120ml/hr) and can increase if the patient tolerates it
- 30 minutes to initiate transfusion once blood has been received
- 4 hours to completely administer

Blood Administration (monitoring times)

- Stay with patient for the first 15 minutes and monitor closely
- After 15 minutes recheck vital signs

Blood Administration (reactions)

- Acute hemolytic: Potentially life threatening, ABO or Rh blood incompatibility, typically seen within the first 15 minutes. SS include fever, chills, low back pain, nausea, chest tightness, dyspnea, and anxiety
- Febrile Non: Sensitivity to donor leukocytes or other blood components, patients with frequent blood transfusion, most common reaction, use filter to prevent reaction, SS include chills, fever, flushing, anxiety, muscle pain, and headache
- Allergic Reaction: sensitivity reaction to something in the blood product (Probably a preservative), SS include local erythema, hives, itching, pruritus, treated with Benadryl
- Bacterial Contamination: Contaminated blood, Blood cultures, sepsis reaction, SS include tachycardia, hypotension, fever, chills, V/D, shock
- Circulatory Overload: Infusion is too fast or patient is unable to handle infusion rate, common in patients with CHF, renal dysfunction, advanced age, and acute MI, SS include cough, dyspnea, distended jugular veins, pulmonary congestion, HTN, tachy, bounding pulse, restless, elevate HOB, monitor respiratory distress, provide O2, and administer diuretics

Blood Administration (fluids to infuse with)

- Prime Y-tubing with 0.9% Normal saline
- New tubing and saline for each unit of blood

Blood Administration (consent, verification, nursing care)

- Ensure type and corssmatch is ordered and drawn
- Verify order (what product, how many units, medications to administer)
- Ensure informed consent
- Patient education
- 18 or 20 gauge IV
- Baseline vitals
- Confirm name, DOB, MRN, and blood bank ID with blood bank
- Two RN at bedside

Pulmonary embolism nursing care and medications

- Nursing care includes O2 therapy to relive hypoxemia and dyspnea, high fowlers position, initiate IV access, assess respiratory status at least every 30 minutes (Auscultate lung sounds, Measure rate, rhythm, and ease of respirations, Inspect skin color and capillary refill, Examine for position of trachea)
- Assess cardiac status (Compare BP in both arms, Palpate pulse quality, Check for dysrhythmias on cardiac monitor, Examine neck for distended neck veins, Inspect the thorax for petechiae)
- Provide emotional support and comfort to control client anxiety and monitor changes in LOC and mental status
- Medications to treat pulmonary embolism:
    - Anticoagulants to prevent clots from getting larger or additional clot from forming
    - Direct factor Xa inhibitor (Rivaroxaban ((Xarelto)) binds directly with the active center of factor Xa, which inhibits the production of thrombin
    - Thrombolytic therapy (Alteplase, reteplase, tenecteplase) used to dissolve blood clots and restore pulmonary blood flow

Acute respiratory failure manifestations

- Respiratory failure is a sudden and life-threatening deterioration of the gas exchange function of the lung
    - PaO2 less than 60 mm Hg (Hypoxemia) and PaCO2 >50 mm Hg (hypercapnia) with an arterial pH <7.35

Priority care for complications (ABCs)

- Airway, breathing, circulation

Identify dysrhythmias

- Normal sinus rhythm
- Sinus bradycardia
- Sinus tachycardia
- Sinus arrhythmia
- Premature atrial contractions
- Atrial tachycardia
- Atrial flutter
- Atrial fibrillation

Defibrillation & Cardioversion

- Used to treat tachydysrhythmias by delivering an electrical current that depolarizes a critical mass of myocardial cells that leads to the SA node taking back ins role as the hearts pacemaker
- Defibrillation: Ventricular fibrillation, ventricular tachycardia without a pulse
    - Used in emergency situations as a treatment of choice for ventricular fibrillation and pulseless VT (Not used in conscious people or who have a pulse)
    - The sooner its used, the better the survival rate
    - Delivery of the current is immediate and unsynchronized
- Electrical Cardioversion: Atrial dysrhythmias, supraventricular tachycardia, ventricular tachycardia with a pulse
    - Involves the delivery of times electrical current to terminate a tachydysrhythmia
    - Synchronized with the ECG on a cardiac monitor

Reducing CAD

- Exercising, monitoring what you eat, cessation of smoking

Ventilator care/checklist

- Maintain a patent airway and assess the position and placement of the tube, document size of ET tube and tube placement centimeters at the clients teeth or lips, reposition Q2H and PRN, suction oral and tracheal secretions to maintain tube patency, have a resuscitation bag with a face mask available
- Assess respiratory status every 1-2 hr, breath sounds equal bilaterally, presence of reduced or absent breath sounds, respiratory effort, or spontaneous breaths
- Monitor VS, ABG's, CXR's LOC
- Monitor and document ventilator settings hourly
    - Rate, FiO2 and tidal volume, mode of ventilation, use of adjuncts (PEEP, CPAP), plateau or peak inspiratory pressure (PIP), and alarm settings

- Assess cuff pressure at least every 8 hours and maintain pressure below 20mmHg to reduce vocal cord necrosis

Myocardial infarction labs

- Troponin
  - Increase of troponin in the serum can be detected within a few hours during an acute MI
  - Can be elevated with sepsis, heart failure, and respiratory failure
- Creatine kinase
  - CK-MB increases when there is damage to cardiac cells
- Myoglobin
  - Increases 1-3 hours and peaks within 12 hours after onset of symptoms

Myocardial infarction manifestations

- Chest pain. SOB, nausea, anxiety, cool pale skin, increased HR and RR

Alteplase nursing tasks

- Should be given in the first 30 minutes of patients arrival
- Loading dose is given for rapid therapeutic effect
- Have more than one IV site
- Monitor for reperfusion, dysrhythmias and hypotension
- Draw blood for labs when starting the IV line

Sedative and paralytic medications

- Sedatives: Propofol, diazepam, lorazepam, midazolam

Atelectasis manifestations

- Increasing dyspnea, diminished breath sounds in lower lobes, cough and sputum production, respiratory distress, tachycardia, tachypnea, pleural pain, central cyanosis
- Patients usually have difficulty breathing in the supine position and are anxious

Flail chest manifestations

- Occurs when at least 2 neighboring ribs, usually on one side of the chest, sustain multiple fractures causing instability of the chest wall and paradoxical chest wall movement, resulting in significant limitation in chest wall expansion
- Manifestations include unequal chest expansion (The unaffected side of the chest will expand while the affected side can appear to diminish in size or remain stationary)

    - Clients chest moves inward during inspiration and bulges our during expiration
- Tachycardia, hypotension, dyspnea, cyanosis, anxiety, chest pain

Chest tube indications

- Pneumothorax, pleural collection, pleurodesis, thoracotomy, post op

Intubation respiratory monitoring

- Have ambubag and oxygen available, get suction and Yankauer, administer sedation, monitor vital signs, check tube placement, auscultate for breath sounds bilaterally, stabilize tube with bite block

Valvular heart disease nursing care

- Monitor patients current weight and note recent changes
- Assess heart rhythm which can be irregular or bradycardic and assess for murmurs
- Administer oxygen and meds as ordered
- Maintain fluid and sodium restrictions
- Help the client conserve energy

Pacemaker education

- When the hearts normal pacemaker is unreliable and causes bradyarrhythmias, it becomes essential to restore ventricular function, done by applying an artificial stimulus to the heart muscle
- Can be temporary or permanent
- Pacemaker response modes include a tachydysrhythmia and/or deliver or an electrical shock

Modifiable and nonmodifiable risk factors for CAD

- Modifiable:
    - Serum lipids (TC >200, Triglycerides >150, LDL >160, HDL <40 in men and <50 in women
    - BP >140/90, Diabetes, tobacco use, physical inactivity, obesity
- Nonmodifiable:
    - Increasing age, gender (more common in men than women until 75), ethnicity (more common in white men), genetic predisposition and family history of heart disease

Pericarditis treatment

- NSAIDS for pain relief during the acute phase

- Cholchicine for severe pericarditis and does not respond with NSAIDS
- Corticosteroids for severe pericarditis or if not responding to NSAIDS
- NOT indomethacin because it decreases coronary blood flow

Hypertensive crisis treatment

- **Hypertensive crisis**: severely elevated blood pressure (SBP>180 and DBP>120)
- **Treatment:** Medications that have immediate effect are necessary
- **Vasodilators:** Nitroprusside, Nicardipine, Clevipine, Enlaprilat, Nitroglycerin
- Labetalol with nicardipine used for fast blood pressure reduction
- Monitor fluid volume status and prepare for admin of NS to support BP if needed
- Emergency: organs at risk
- Urgency: need to fix it before organs at risk
- MAP: above 65
- MAP: tells if their body is perfusing suffiecntly

AAA manifestations

- Constant gnawing feeling in abdomen
- Flank or back pain
- Pulsating abdominal mass
- Bruit over area
- Elevated blood pressure

Bronchoscopy (diagnostic/nursing care)

- Diagnostic: Permits visualization of larynx, trachea, and bronchi through a flexible fiber optic or rigid bronchoscope
- Nursing care: Informed consent, NPO for 4-8 hours, assess gag reflex, monitor vital signs, monitor respirations

Cardiac Catheterization nursing care

- Administer sedative and analgesic medications, monitor vital signs, be prepared to intervene dysrhythmias, have emergency medications readily available
- After the procedure assess vital signs every 15 minutes x4, every 30 minutes x2, and every hour x4 and asses the groin at the same intervals
- Maintain bed rest in supine position