Breanna Schoonover: Med Surg 3, EXAM 1 Concept Review

Blood Product administration

Nursing Interventions:

- Check vitals prior to, during, and post-infusion.
- Completed type and cross
- Stay with client for first 15 minutes
- Ask if they've had previous interactions
- Large bore IV, 20g, 18G.
- 2 RN Verification
    - Correct client and product
- Use a tubing set specifically for blood with filter and prime NS.
- 4 hours to administer PRBC's
- Monitor for signs and symptoms
- Monitor vitals and rate of infusion
- DO NOT MIX WITH ANY OTHER IV'S OR MEDICATIONS

Transfusion Reactions and Interventions

- Acute hemolytic
- Febrile
    - TX: Tylenol
- Allergic
    - TX: Benadryl
- Bacterial
    -
- Circulatory Overload
    - Sit up, administer oxygen, diuretics as prescribed

IMMEDIATELY **STOP** THE INFUSION

Administer NS through a NEW IV tubing (Flushing with old line is allowing old products to keep on going through body)

Chest tubes

Expected Findings

- 1st chamber: drainage collection
    - Receiving fluid from the pleural or mediastinal space
- 2nd chamber: water seal

    - One-way valve, tidaling occurs.
- 3rd chamber: Suction control
    - Bubbling occurs.

Abnormal/Concerning Findings

- 1st chamber: drainage collection
- 2nd chamber: water seal
    - No tidaling
    - Bubbling
- 3rd chamber: Suction control
    - No bubbling

ETT Suctioning

Nursing Interventions

- Insert catheter without applying suction
- After applying the catheter, apply suction, using a rotating motion to remove it.

Possible Complications

- Injury to the airway

Dysrhythmias

Identify rhythms via graphic or description

Goal of Treatment

EKG Strip

Components of the Cardiac Cycle

- P Wave: atrial electrical activity
- QRS: ventricular electrical activity
- T Wave: resting phase of ventricle
- P-R Interval
- U wave
- ST Segment
- QT Interval

- **Pulmonary Embolism**

  Manifestations

  - Dyspnea,
  - Tachypnea
  - cough,
  - sudden onset of chest pain
  - Tachycardia,
  - anxiety,
  - fever,
  - diaphoresis,
  - syncope
  - hemoptysis

  Pharmacologic treatment

  Medications:

  - Anticoagulants → Heparin, enoxaparin, warfarin which are used to prevent clots from getting larger or additional clots from forming
  - Direct factor Xa inhibitor → Rivaroxaban inhibits the production of thrombin
  - Thrombolytic therapy → Alteplase, reteplase, and tenecteplase are used to dissolve blood clots and restore pulmonary blood flow

  Nursing Interventions

  - Administer **oxygen** therapy and position client in **high-fowler's** position
  - Initiate and maintain **IV** access
  - Administer medications as prescribed
  - Assess respiratory status at least every 30 minutes
  - Assess cardiac status routinely
  - Monitor level of consciousness and changes in mental status
  - Provide emotional support and comfort to help control client anxiety

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Acute Respiratory Failure

Manifestations

- Dyspnea
- orthopnea
- cyanosis

- pallor
- hypoxemia
- tachycardia
- confusion
- irritability or agitation
- restlessness
- hypercarbia

Acute Respiratory Distress Syndrome (ARDS)

Interventions (remember my comments from class)

- Frequent assessment of the patient's status
  - Due to respiratory treatment
- Positioning of the patient
  - Improved ventilation and perfusion
- Reduce patient anxiety

Pharmacologic treatment

- Oxygen therapy
- Intubation and mechanical ventilation
- Analgesics
- Blood thinners
- Antibiotics
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- Oxygen Therapy
  - Nursing interventions
- Pneumothorax
  - Manifestations

Pneumonia

Diagnostics

- Medical History
- Physical Exam
- Diagnostic Tests
- Chest xray - to look for lung inflammation and show consolidation of lung tissue
- Complete Blood Count

- Arterial Blood Gases - determine extent of hypoxia
- Blood Culture - identify if a bacterial infection has entered the patient's bloodstream
- Sputum Culture - identifies the organism causing the pneumonia

Ventilator alarms

- **Types**
- **Interventions**
- 3 types of ventilator alarms:
- **Volume (low pressure)** → indicate a low exhaled volume d/t a disconnection, cuff leak, &/or tube displacement
- **Pressure (high pressure)** → indicate excess secretions, client biting the tubing, kinks in the tubing, client coughing, pulmonary edema, bronchospasm, or pneumothorax
- **Apnea** → indicate that the ventilator does not detect spontaneous respiration in a preset time period
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ETT

- Interventions upon extubation
- Deflate the cuff on the ET tube, and remove the tube during peak inspiration
- Following extubation, monitor for signs of respiratory distress or airway obstruction, such as ineffective cough, dyspnea, and stridor
- Assess SpO2 and VS every 5 min
- Encourage coughing, deep breathing, and use of IS
- Reposition the client to promote mobility of secretions
- Older adult clients have decreased respiratory muscle strength and chest wall compliance, which makes them more susceptible to aspiration, atelectasis, and pulmonary infections. Older adult clients require more frequent position changes to promote mobility of secretions.

Positive pressure mechanical ventilation

Nursing interventions

- Maintain a patent airway

- Assess the position & placement of tube
- Document tube placement in centimeters at the client's teeth or lips
- Use 2 staff members for repositioning and to re-secure the tube
- Apply protective barriers (soft wrist restraints) according to hospital protocol to prevent self-extubation
- Use caution when moving the client
- Suction oral and tracheal secretions to maintain tube patency
- Support ventilator tubing to prevent mucosal erosion and displacement
- Have a resuscitation bag with a face mask available at the bedside at all times in case of ventilator malfunction or accidental extubation.
- Assess respiratory status every 1-2 hr:
- breath sounds equal bilaterally, presence of reduced or absent breath sounds, respiratory effort, or spontaneous breaths
- Suction the tracheal tube to clear secretions from the airway
- 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)
- Alarm settings
- Monitor ventilator alarms, which signal if the client is not receiving the correct ventilation
- Never turn off ventilator alarms
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Postural drainage

- Types/uses
- Makes use of gravity to drain secretions from the lungs
- Position the patient in a way that promotes the drainage of secretions from smaller pulmonary branches into larger ones, where they can be removed by coughing
- Vibration, percussion, or both often precede postural drainage
- Have tissues and an emesis basin close at hand for the patient to use when coughing and expectorating secretions

- **Aortic Aneurysm**

Signs of dissection

- Sudden onset of “tearing” or “ripping” or “stabbing” abdominal and back pain
- Hypovolemic shock
- Diaphoresis, N/V, faintness, apprehension
- Decreased or absent peripheral pulses
- Neurologic deficits
- Hypotension and tachycardia (initial)
- Oliguria

- MI

Manifestations

- Chest pain or discomfort not relieved by rest or nitroglycerin; palpitations. Heart sounds may include S3, S4, and new onset of a murmur.
- Increased jugular venous distention may be seen if the myocardial infarction (MI) has caused heart failure.
- Blood pressure may be elevated because of sympathetic stimulation or decreased because of decreased contractility, impending cardiogenic shock, or medications.
- Irregular pulse may indicate atrial fibrillation.
- In addition to ST-segment and T-wave changes, the electrocardiogram may show tachycardia, bradycardia, or other dysrhythmias.

EKG changes

- Creates ST-elevation in the ECG leads facing the area of infarction

Interventions

- Oxygen and medication therapy
- Frequent VS assessment
- Physical rest in bed with HOB elevated
- Relief of pain helps decrease workload of heart
- Monitor I&O and tissue perfusion
- Frequent position changes to prevent respiratory complications
- Report changes in patient’s condition

Diagnostics

- 12 lead ECG
- Cardiac Enzymes

Pharmacologic treatment

- Supplemental oxygen
- Nitroglycerin
- Morphine
- Aspirin 162–325 mg
- Beta-blocker
- Angiotensin-converting enzyme inhibitor within 24 hours
- Anticoagulation with heparin and platelet inhibitors

- MONA
- M= morphine
- = oxygen
- N = nitroglycerin
- A = aspirin

Patient education

Cardiac Catheterization

Access sites

- Angiography involves the insertion of a catheter into a femoral (sometimes a brachial) vessel and threading it into the right or left side of the heart. Coronary artery narrowing and/or occlusion are identified by the injection of contrast media under fluoroscopy

Nursing interventions

Pre-procedure:

- Maintain NPO for at least 8 hours
- Ensure consent form is signed
- Assess for iodine/shellfish allergy (contrast media)
- Assess renal function prior to introduction of contrast dye
- Administer pre-medications as prescribed (methylprednisolone, diphenhydramine)

Patient Education: Instruct the client that he is awake and sedated during procedure. A local anesthetic is used. A small incision is

made, often in the groin, to insert the catheter. The client can feel warmth and flushed when the dye is inserted. After the procedure, the client must keep the affected leg straight. Pressure (a sandbag) can be placed on the incision to prevent bleeding.

Intra-procedure

- Administer sedatives and analgesia as prescribed
- Continually monitor vital signs and heart rhythm
- Be prepared to intervene for dysrhythmias
- Have resuscitation equipment and emergency medications readily available

Post-procedure

- Assess VS every 15 min x 4, every 30 min x 2, every 1 hr x 4, and then every 4 hr (follow facility protocol)
- Assess groin site at the same interval for:
- Bleeding and hematoma formation
- Thrombosis
- Maintain bed rest in supine position with extremity straight for prescribed time (up to 6 hours)
- Conduct continuous cardiac monitoring for dysrhythmias
- Administer anti-platelet or thrombolytic agents as prescribed to prevent clot formation and re-stenosis
- Administer anti-anxiety and pain medication as prescribed
- Monitor UO and administer IV fluids for hydration
- Perform/assist with sheath removal from vessel

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Possible complications

- Cardiac tamponade
  Manifestations:
  - Hematoma formation
    Hold pressure, monitor peripheral circulation
- Re-stenosis of treated vessel
  Retroperitoneal bleeding
  - D/T femoral artery puncture

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- **ECG**
  - **Patient instructions during the test**
    - **Do not speak**

        - **Do not move**
- **Aortic Stenosis**
    - **Manifestations**
        - valve does not open completely
        - blood flow through the valve is reduced
        - narrowed opening impedes blood moving forward
        - SOB
        - CHEST PRESSURE

<u>Heart disease</u>

Risk factors

- HTN
- Rheumatic fever (mitral stenosis and insufficiency)
- Infective endocarditis
- Congenital malformations
- Marfan syndrome (connective tissue disorder that affects the heart and other areas of the body)
- In older adult clients, the predominant causes of valvular heart disease are degenerative calcification and atherosclerosis, papillary muscle dysfunction, and infective endocarditis
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Myocarditis

Manifestations

tachycardia, murmur, friction rub auscultated in the lungs, cardiomegaly, chest pain, and dysrhythmias

- Flu-like symptoms are present

- **Nitroglycerin**
    - **Methods for administration**
        - Sublingual
        - IV
        - Patch

• Increasing age
• Gender (more common in men than in women until 75 yr of age)
• Ethnicity (more common in AA than white males)
• Genetic predisposition and family history of heart disease
	Major:
	• 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: Waist circumference >102 cm in men and >88 cm in women
	Contributing:
	• Fasting blood glucose >100
	• Psychosocial risk factors (e.g. depression, hostility, anger, stress)

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