

N441 Exam 1 Concept Reviews

Week 1 Content:

1. Blood administration (transfusion reactions, patient verification, consent)

- In general, professional guidelines have recommended that transfusion is not indicated for hemoglobin >10 g/dL, but the lower threshold varies from 6-8 g/dL.
- Before donation
 - Check vital signs (esp temp) prior to
 - Type and Cross will be completed
 - Usually, a reaction will happen in the first 15 minutes
 - 18 or 20g needle – won't lyse blood
 - Y tubing with filter is used to transfuse blood
 - Ask the patient if they have had a previous reaction to blood products
 - 2 RN's MUST verify correct pt and product (LPN can't)
- Transfusion reaction
 - Acute Hemolytic-Incompatibility issue
 - Febrile-Anti WBC antibodies (use filter) Tylenol
 - Allergic-sensitivity reaction to something in the blood product (probably a preservative) Benadryl
 - Bacterial-contaminated blood Get some blood cultures
 - Circulatory Overload-too fast, can't handle the volume
 - Blood has to be transfused within 4 hours of their removal from controlled temperature storage.

2. Chest tubes (expected findings in the chambers)

- Bubbling in the suction chamber is good. Bubbling in the water chamber is bad, that means there is an air leak in the chest tube somewhere.
- 1st chamber - drainage collection - receives fluid from the pleural or mediastinal space
- 2nd chamber - water seal - Incoming air enters the collection chamber & bubbles up through the water
 - bubbling will occur initially when a pneumothorax is present (not constant)
 - Bubbling will cease when the lung expands
 - Continuous bubbling indicates a leak
- 3rd chamber - suction control (can be wet or dry) - bubbling indicates suction
- Preprocedure: place client in supine or semi-fowlers

3. ET Tubes (Suctioning, complication prevention)

- Suction the tube to clear secretions from the airway
- Fluid retention - prevention: monitor I&O, weight, breath sounds, diuretics, and ET suction
- Oxygen toxicity - prevention: monitor for fatigue, restlessness, severe dyspnea, tachycardia, tachypnea, crackles, and cyanosis
- Hemodynamic compromise - prevention: monitor for tachycardia, hypotension,

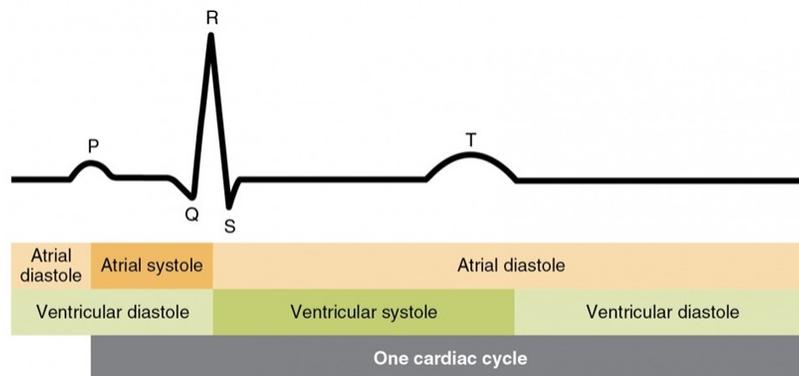
urine output <30 mL/hr, cool/clammy extremities, decreased peripheral pulses, and decreased LOC

- Aspiration - prevention: keep HOB elevated, check residuals every 4 hours if the client is receiving feedings
- GI ulceration - prevention: monitor GI drainage and stools for blood, administer ulcer prevention medications
- Oral care - provide frequent oral care (2 hours) and reposition tubing frequently to prevent skin breakdown

4. Mechanical ventilation (high pressure and low alarm causes, preventing complications ie aspiration, skin breakdown; safety with suctioning)

- High-pressure alarm causes: PT bearing down or coughing, the vent is on bronchial or tracheal wall, kinked tubing, mucus buildup, PT breathing too hard, PT bucking vent
- Low-pressure alarm causes: vent is disconnected from ETT, self-extubation, loose tubing connection (If PT low-pressure alarm goes off, their oxygen is decreasing, and the vent is not out of their mouth = **bag them**)
- Prevent aspiration: Elevate PTs head of the bed
- Prevent skin breakdown: reposition ETT from side to side of the mouth, no restraints, reposition PT every 2 hours, provide oral care
- Safety with suctioning: hyper oxygenate PT before suctioning

5. Cardiac cycle (Identify components)



6. Central line placement complications (hint: I told you during skills lab day, do you remember?)

- Can puncture chest cavity and cause pneumothorax

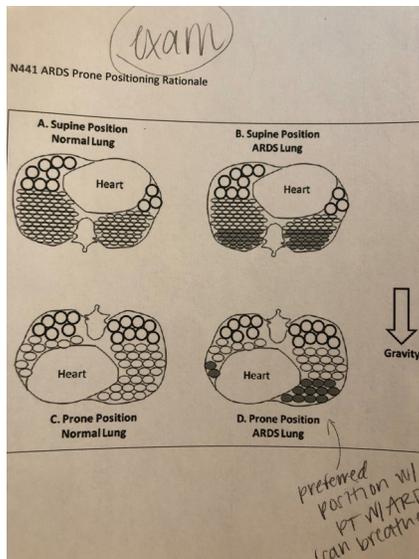
Week 2 Content:

1. ARF (manifestations)

- Hypotension, bradycardia, cyanosis, restlessness, decreased LOC, headache

2. ARDS (positioning)

PTs with ARDS like the prone position because they can breathe better volumes



3. Pneumonia (manifestations)

- Anxiety, fatigue, weakness, confusion (from hypoxia), fever, chills, tachypnea, crackles, diaphoretic

4. Pneumothorax (lung sounds)

- Absent and reduced breath sounds on the affected side
- Tracheal deviation (unaffected side)

5. Pulmonary Embolism (assessment findings, the relationship of DVT, prevention [don't forget fluid intake])

- Findings: anxiety, feeling of impending doom, pressure, dyspnea, hypotension, tachycardia, tachypnea, cyanosis, petechiae over the chest, chest pain
- An embolus originating from venous thromboembolism (DVT) is the common cause of PE
- Prevention: smoking cessation, encourage appropriate weight for height and body frame, healthy diet and physical activity, leg exercises, wear compression stockings and avoid sitting for long periods of time, adequate hydration

6. Bronchoscopy or TEE (safety to prevent aspiration)

- Post op: check gag reflex to prevent aspiration

Week 3 Content:

1. Coronary Artery Disease (modifiable and non-modifiable risk factors and prevention)

- Modifiable: Smoking, sedentary lifestyle, bad dietary habits, high fat diet
- Nonmodifiable: Genetics, age, gender, C-reactive protein
- Prevention: Exercise, eat healthy, don't smoke

2. Aortic Dissection (Symptoms, hint: look on the concept map)

- A constant gnawing feeling in abdomen
- Flank or back pain
- Pulsating abdominal mass (do not palpate, can cause rupture)

- Bruit over the area of the aneurysm
 - Elevated blood pressure (unless in cardiac tamponade or rupture of aneurysm)
3. **Cardiac Enzymes**
 - (CK-MB, Troponin I and T, myoglobin)
 4. **Pericarditis (positioning and complications)**
 - Pain is worse in the supine position, pain is better when sitting upright or forward
 - Pericarditis may progress to life-threatening cardiac tamponade
 5. **Valve Replacement (and prophylaxis)**
 - Advise PT to have antibiotics prior to a dental procedure
 - Anticoagulant therapy is needed to prevent clots - lifelong
 6. **Thrombolytics (time limit, risks)**
 - Must be given within 3-4.5 hours after the onset of symptoms
 - Very high bleeding risk - lots of contraindications
 - Contraindications: prior intracranial hemorrhage, known cerebral malformation/neoplasm, stroke within 3 months, suspected aortic dissection, active bleeding, significant trauma in the past 3 months.
 7. **Cardiac catheterization (complications, post-procedure care, where to check pulses)**
 - Remain in bed for 2-6 hours
 - Avoid baths
 - Do not bend at the waist or strain for 24 hours after
 - Keep extremity straight
 - Check pulses on the side effected
 - If the femoral approach: assess kidney function
 8. **MI (diagnostic labs and STEMI EKG's, clinical manifestations, pharmacologic tx, nursing interventions)**
 - Troponin should be <0.03
 - Creatine Kinase (CK-MB): men 2-6, women 2-5 mcg/L, CPK, Myoglobin rises w/in 2 hr, drastic drop after 7
 - Tightness of chest/chest pain (radiate to the jaw for women), diaphoresis, tachycardia, SOB, nausea, vomiting
 - ST-elevation
 - Intervention: obtain 12 lead EKG, ensure physical rest, MONA (Morphine, oxygen, nitro, aspirin)
 9. **ABC's for prioritization (airway, lungs, breathing, oxygen are always FIRST)**
 10. **Betablockers (purpose) (-lol)**
 - Are for patients who have unstable angina or MI.
 - They decrease cardiac output and decrease vasoconstriction
 - Lowers BP and HR
 11. **Nitroglycerine patches (on and off periods and why)**

- 12 hrs on and 12 hrs off
- Make sure skin is clean and dry without hair
- Rotate patch sites
- Nitro patches may not work as well if used for a long period of time, so on and off periods are needed

12. Bedrest (why for resp and cardiac problems)

- Bedrest reduces cardiac demand - improved perfusion and oxygenation
- Decreases the workload and conserves energy

13. Hypertensive (emergency vs urgency, review how to bring the BP down)

- Emergency - 180/120 **and** end-organ dysfunction
- Urgency - severe BP elevation without end-organ dysfunction
 - Therapeutic goals - reduction of the mean blood pressure by 20-25% within the first hour → a further reduction to ~160/100 over a period of up to 6 hours → gradual reduction over days
 - Give IV drip nitro/nitride (vasodilate) bring BP down slow b/c tissue is used to increase pressure. This can lead to pressure in the brain. End organ damage to the heart, kidneys, lungs.
 - Ex: 220/110, not short of breath, no headache, creat normal, not confused= urgency. Crisis (emergency) is with organ damage.