Med Surg Final Exam Concept Review

Week 1:

1. Blood administration
    a. Nursing interventions pre-, intra-, and post-transfusion
        i. Pre-transfusion
            1. Explain the procedure
            2. Obtain informed consent
            3. Assess baseline vitals
            4. Assess lab findings verify prescription and two RN identify blood product
            5. Prime blood tubing with normal saline only; use y-tubing with a filter to transfuse
                a. ****always blood only; never add medications to blood products
        ii. Intra-transfusion
            1. Remain with the client for at least the first 15 minutes of the transfusions - monitor for signs of reactions or fluid overload
            2. Cycle vital signs per protocol
        iii. Post-transfusion
            1. Obtain vital signs
            2. Continue to monitor for signs of reaction or fluid overload
    b. Identifying s/s of transfusion reactions
        i. ****if any symptoms of any kind of reaction arise, STOP the transfusion
        ii. Acute hemolytic
            1. Back/flank pain, hematuria, chills, faintness/dizziness, fever, and flushing of the skin
        iii. Febrile
            1. Fever and chills
        iv. Allergic
            1. Fever, chills, urticaria, and itching
        v. Bacterial
            1. Rigors, high fever, chills, hypotension, tachycardia, n/v, dyspnea, and possibly circulatory collapse
2. Chest tubes
    a. Expected findings
        i. 1st chamber - fluid collection
        ii. 2nd chamber - water seal
            1. Intermittent bubbling during exhalation, coughing, or sneezing may be observed
                a. Bubbling ceases when lung becomes re-expanded

2. Tidaling of water

iii. 3rd chamber - constant, slow and steady bubbling which indicates suction is functioning properly

b. abnormal/concerning findings
   i. Cessation of tidaling in water seal may indicate occluded chest tube
c. Nursing interventions pre-, intra-, and post-placement and removal
   i. Placement
      1. Pre-procedure
         a. Verify consent form is signed
         b. Reinforce client teaching
         c. Assess for any medication allergies
         d. Prepare the chest drainage system - fill the water seal chamber
         e. Position the client into the desired position - supine or semi-Fowler's
         f. Administer pain medication/sedation as prescribed
         g. Prep the insertion site with cleaning agent
      2. Intra-procedure
         a. Assist the provider with insertion of the chest tube, application of a dressing to the insertions site, and set-up of the drainage system
         b. Continually monitor vital signs and response to the procedure
      3. Post-procedure
         a. Assess vital signs, breath sounds, oxygen saturation, color, and respiratory effort every 4 hours
         b. Encourage coughing and deep breathing every 2 hours
         c. Keep the drainage system below the client's chest level
         d. Routinely monitor tubing for kinks, occlusions, or loose connections
         e. Monitor the chest tube insertion site for redness, pain, infection, and crepitus
         f. Tape all connection between the chest tube and chest drainage system
         g. Position the client in the semi- to high-Fowler's position to promote optimal lung expansion and drainage of fluid from the lungs
         h. Administer pain medications as prescribed
         i. Obtain a chest X-ray to verify correct placement
         j. Keep two enclosed hemostats, sterile water, and an occlusive dressing at bedside at all times
         k. Due to the risk of causing a tension pneumothorax, chest tubes are only clamped when prescribed in specific circumstances, such as in the case of an air leak, during

drainage system change, accidental disconnection of tubing, or damage to the drainage system

l. Do not strip or milk tubing; only perform this action when prescribed. Stripping creates a high negative pressure and can damage lung tissue

4. Removal
    a. Provide pain medication 30 minutes before removing chest tubes
    b. Assist the provider with sutures and chest tube removal
    c. Instruct the client to take a deep breath, exhale, and bear down (valsalva maneuver) or to take a deep breath and hold it (increases intrathoracic pressure and reduces the risk of air emboli) during chest tube removal
    d. Apply airtight sterile petroleum jelly gauze dressing. Secure in place with a heavyweight stretch tape.
    e. Obtain chest X-rays as prescribed. This is performed the continued resolution of pneumothorax, hemothorax, or pleural effusion
    f. Monitor for excessive wound drainage, signs of infection, or recurrent pneumothorax

d. Measuring output
    i. Continually measure
    ii. Must be marked each time is measured
    iii. Output markers on chest drainage system are consecutive - so subtraction must be used to measure output for a given shift

3. ETT suctioning
    a. Nursing interventions
        i. Insert catheter before applying suction
        ii. Apply suction while using a rotating motion to remove the catheter
        iii. Withdraw the catheter within 10 seconds or less
        iv. Hyperoxygenate patients on mechanical ventilation prior to suctioning
4. Cardiac rhythms
    a. Identify by rhythm strip OR written description of rhythm
5. Atrial fibrillation
    a. Manifestations
        i. Many patients are asymptomatic
        ii. Palpitations, weakness/fatigue, lightheadedness/dizziness, SOB, and chest pain

Week 2:

1. Pneumothorax
    a. Manifestations

i. Anxiety, pleuritic pain, tachypnea, tachycardia, hypoxia, cyanosis, dyspnea, tracheal deviation with tension pneumothorax, and diminished/absent breath sounds on the affected side

Week 3:

1. MI
    a. Diagnostic testing
        i. EKG
        ii. Cardiac enzymes
            1. Troponin I
            2. Troponin T
            3. Myoglobin
            4. CK-MB
2. Echocardiogram
    a. Patient education prior to this test
        i. Explain the reason for the test to the client. This is a noninvasive test and takes up to 1 hour
        ii. Instruct the client to lie on left side and remain still during the procedure
3. Cardiac catheterization
    a. Nursing interventions pre-procedure
        i. Maintain NPO for 8 hours prior to procedure
        ii. Ensure consent form is signed
        iii. Assess for iodine/shellfish allergy
        iv. Assess renal function prior to introduction of contrast dye
        v. Administer pre-medication as prescribed
4. Cardiac tamponade
    a. Manifestations
        i. Muffled heart tones, SOB, JVD, hypotension, friction rub, and ribbon-like EKG
5. Diuretic therapy
    a. complications/adverse effects
        i. Dehydration, hyponatremia, hypochloremia, hypotension, ototoxicity, hypokalemia, hyperglycemia, hyperuricemia (excess uric acid), hypocalcemia, decrease in HDL, and increase in LDL

Week 5:

1. Hypervolemia
    a. Manifestations
        i. Acute weight gain, peripheral edema, JVD, SOB, crackles, and bounding pulses
2. Hypokalemia/Hyperkalemia
    a. Interventions
        i. Hypokalemia
            1. Monitor EKG

2. Monitor ABGs
3. Administer dietary or IV potassium as prescribed

ii. Hyperkalemia
1. Monitor potassium levels
2. Monitor medication effects

3. EKG changes associated with electrolyte imbalances
   a. Hypokalemia
      i. Slightly prolonged PR interval, slightly peaked P wave, ST depression, shallow T wave, and ****prominent U wave
   b. Hyperkalemia
      i. Decreased R wave amplitude, wide, flat P wave, prolonged PR interval, widened QRS complex, depressed ST segment, and ****tall, peaked T waves
   c. Hypocalcemia
      i. Prolonged QT interval as a result of a prolonged ST segment
      ii. Risk of torsades de pointes

Week 7:

1. Casts
   a. Patient education
      i. Instruct clients not to place any foreign objects inside the cast to avoid trauma to the skin. Itching under the cast should be relieved by blowing cool air from a hair dryer into the cast
      ii. Cover the cast with plastic if needed to avoid soiling the cast from urine or feces
      iii. Demonstrate how plastic bags can cover the cast during baths and showers to keep the cast dry
      iv. Report any areas under the case that are painful, have a “hot spot”, have increased drainage, are warm to the touch, or have an odor - which can indicate infection
      v. Instruct the client to report change in mobility and complication such aso SOB, skin breakdown, and constipation
   b. Nursing interventions
      i. NEUROVASCULAR ASSESSMENT
         1. Assessments are performed every hour for the first 24 hours and every 1-4 hours thereafter following initial trauma to monitor neurovascular compromise related to edema and/or the cast
         2. Assessment includes
            a. Pain, sensation, skin temperature, capillary refill, pulses, movement, and skin color
      ii. Apply ice for the first 24-48 hours
      iii. Handle a plaster cast with the palms, not fingertips, until the cast is dry to prevent denting the cast
      iv. Avoid setting the cast on hard surfaces or sharp edges

v. Prior to casting, the area is cleaned and dry
vi. After cast application, position the client so that warm, dry air circulates around and under the cast for faster drying and to prevent pressure from changing the shape of the cast - use gloves until the cast is completely dry
vii. Elevate the cast above the level of the heart during the first 24-48 hours to prevent edema of the affected extremity
viii. Document presence of drainage and report sudden increase in drainage.
ix. Older adult clients have an increased risk for impaired skin integrity

c. Complications
i. Compartment syndrome

2. Skeletal traction
a. Expected findings at pin sites
i. Pin sites should be slightly red around the area of insertion, but exhibit no drainage or foul odor - these indicate infection

3. Buck's traction
a. What does this do?
i. Stabilizes hip fractures in older adults

Week 8:

1. Increased ICP
a. Manifestations
i. Early
1. Changes in LOC, restlessness, confusion, increasing drowsiness, increased respiratory effort, purposeless movements, pupillary changes and impaired ocular movements, weakness in one extremity/side, and constant headache that is increasing in intensity or aggravated by movement or straining

ii. Late
1. Respiratory and vasomotor changes, increase in systolic pressure (wide pulse pressure), bradycardia, increased temperature, projectile vomiting, stupor or coma, neurologic posturing, Cheyne-Stokes breathing, and loss of pupil and gag reflex

b. Nursing interventions
i. Maintain a dark, quiet environment
ii. Encourage the patient to avoid sneezing, coughing, bending or anything to increase ICP
iii. Position HOB no less than 30 degrees
iv. Administer mannitol if indicated

2. Hemorrhagic stroke
a. Manifestations
i. Visual disturbances, dizziness, slurred speech, and weakened side or extremity

3. Thrombolytic therapy

    a. Complications
        i. Intracranial hemorrhage, systemic hemorrhage, immunologic complications, hypotension, and myocardial rupture
4. Bacterial meningitis
    a. Manifestations
        i. Excruciating, constant headache
        ii. Nuchal rigidity (stiff neck)
        iii. Photophobia
        iv. fever/chills
        v. n/v
        vi. Altered LOC - confusion, disorientation, lethargy, difficulty arousing, coma
        vii. Positive Kernig's sign - resistance and pain with extension of the client's leg from a flexed position
        viii. Positive Brudzinki's sign - flexion of the knees and hips occurring with deliberate flexion of the client's neck
        ix. Hyperactive DTRs
        x. Tachycardia
        xi. Seizures
        xii. Red macular rash
        xiii. Restlessness, irritability
        xiv. Behavioral changes

Week 10:

1. Prioritization of patients
    a. Airway, breathing, circulation
    b. Prioritize based on chief complaint and presentation
        i. Black - deceased/expectant
        ii. Red - immediate care needed
        iii. Yellow - care can be delayed
        iv. Green - minor care needed
2. Escharotomy
    a. Goals of this
        i. Release pressure in the underlying deep tissue and restore circulation
3. Fluid resuscitation
    a. Use Parkland Baxter formula to calculate
        i. 4 mL/kg/%TBSA = total fluid requirements for 1st 24 hours
            1. ½ total in 1st 8 hours
            2. ¼ total in 2nd 8 hours
            3. ¼ total in 3rd 8 hours

Week 11:

1. SIADH
    a. Pharmacologic and nursing interventions
        i. Nursing interventions

1. Restrict fluids to 500-1000 mL/day
2. Flush all enteral and gastric tubes with 0.9% NS
3. Monitor I/O; report decreased urine output
4. Monitor vital signs or increased BP, tachycardia, and hypothermia
5. Auscultate lung sounds to monitor for pulmonary edema
6. Monitor for decreased serum sodium/osmolarity and elevated urine sodium/osmolarity
7. Weigh the client daily
8. Report altered mental status
9. Reduce environmental stimuli and reposition the client as needed
10. Provide a safe environment for client with altered mental status
11. Maintain seizure precautions
12. Monitor for indications of HF which can occur from fluid overload

ii. Pharmacologic interventions
1. Vasopressin

2. Myxedema coma
   a. Nursing interventions/priorities
      i. Maintain airway patency
      ii. Initiate aspiration precautions
      iii. Administer IV fluids as prescribed
3. Hypoglycemia
   a. Treatment
      i. Instruct client who has hypoglycemia (70 or less) to take 15-20 g of a readily absorbable carb (4-6 oz. of juice/soda, glucose tablets, hard candy)
      ii. Repeat the administration of carb if not within normal limits and recheck glucose in 15 minutes
      iii. If the client is unconscious:
         1. Administer glucagon SQ or IM; repeat in 10 minutes if still unconscious
         2. Place the client in side-lying position
         3. In acute care, nurses should administer 50% dextrose in IV access if available
         4. Follow glucagon/small carb snack with meal high in carbs and protein
4. DKA
   a. Treatment
      i. Treat the underlying cause, correct hyperglycemia
      ii. Rehydration - initially 0.9% NS is administered at a rapid rate
      iii. Restoring electrolytes - monitor potassium and replace as needed
      iv. Reversing acidosis - insulin
   b. Nursing interventions
      i. Insulin administration

1. Insulin is usually infused intravenously at a low continuous rate (5u/hr)
2. Hourly blood glucose values must be measured
3. IV fluid solutions with higher concentrations of glucose such as NS are administered when blood glucose levels reach 250-300 to avoid too rapid a drop in blood glucose
4. Insulin must be infused continuously until SQ administration can be resumed; any interruption in administration may result in the re-accumulation of ketone bodies and worsening acidosis

5. HHS
    a. Pharmacologic treatment (remember there are 3 steps to this, you should know the order of them as well as what is used)
        i. Fluid replacement
        ii. Correction of electrolyte imbalance
        iii. Insulin administration

Week 12:

1. Pancreatitis
    a. Manifestations
        i. Expected findings
            1. Sudden onset of severe, boring pain (goes through the body); often “band-like”, n/v, and weight loss
        ii. Physical assessment findings
            1. Turner’s and Cullen’s signs
                a. Turner’s - bruising of the flanks
                b. Cullen’s - bruising around the umbilicus
            2. Generalized jaundice
            3. Absent or decreased bowel sounds
            4. Warm, moist skin
            5. Fruity breath
2. Hemodialysis
    a. Assessing fistulas (patent vs non-patent)
        i. A thrill/bruit should be heard when auscultating over the vascular access point - this indicates patency; therefore a lack of bruit indicates obstruction/occlusion
3. GI bleeds
    a. Priority assessment
        i. Monitor and compare baseline vitals to keep track of patient progress
4. Chronic kidney disease
    a. Manifestations including labs
        i. Signs and symptoms
            1. Anemia, hematuria, concentrated, dark urine, oliguria, edema, fatigue, and hypertension
        ii. Lab findings

1. UA - hematuria, proteinuria, and decreased specific gravity
2. Serum creatinine - gradual increase over months to years
3. BUN - gradual increase with elevated serum creatinine over months to years
4. Serum electrolytes - decreased sodium (dilutional) and calcium; increased potassium, phosphorus, and magnesium
5. CBC - decreased hemoglobin and hematocrit from anemia secondary to loss of erythropoietin in CKD