1. 1. The normal recommended daily dose of vitamin C is 60 to 100 mg for healthy adults, but nothing cures the virus which causes the common cold.
2. Echinacea is an herbal preparation thought to limit the severity of a cold and is sold in OTC preparations, but it does not have to be taken with vitamin C.
3. This dose is already too high, and water-soluble vitamins in excess of the body’s needs are excreted in the urine.
4. Megadoses can lead to crystals in the urine, and crystals can lead to the formation of renal calculi (stones) in the kidneys. Therefore, megadoses should not be taken because there is no therapeutic value.


2. 1. Vitamin K helps prevent clotting, and NSAIDs are recommended for inflammatory disorders and to relieve mild to moderate pain.
2. Vitamin E is an antioxidant and is useful in the treatment and prevention of coronary artery disease, and aspirin is an antiplatelet which prevents platelet aggregation.
3. Vitamin A is required for healthy eyes, gums, teeth and for fat metabolism. Anticoagulants are prescribed for clients with a high risk for clot formation.
4. Vitamin B complex is used for healthy function of the nervous system, cell repair, and formation of red blood cells; iron supplements are recommended for clients with iron-deficiency anemia.


3. 1. OTC decongestant medications used for the flu cause vasoconstriction of the blood vessels, which would increase the client’s hypertension and therefore should be avoided. The client should let the flu run its course.
2. OTC medications should not be taken by the client with essential hypertension.
3. The nurse should provide the information to the client about what medications to take and should not refer the client to the pharmacist.
4. It is too late for the flu vaccine because the client is already ill with the flu.


4. 1. The potassium level is not affected by the administration of steroids.
2. Culture and sensitivity reports should be monitored to determine if the proper antibiotic is being administered.
3. Steroids are excreted as glucocorticoids from the adrenal gland and are responsible for insulin resistance by the cells, which may cause hyperglycemia.
4. There is no reason why the nurse would question administering a steroid based on an arterial blood gas result.


5. 1. Cromolyn is used prophylactically to prevent exercise-induced asthma attacks. It is administered in routine daily doses to prevent asthma attacks.
2. Rinsing the mouth will help prevent the growth of bacteria secondary to medication left in the mouth.
3. Holding the breath for 10 seconds keeps the medication in the lungs.
4. This medication is used to stabilize the mast cells in the lungs. During an asthma attack, the mast cells are already unstable; therefore, this medication will not be effective in treating the acute asthma attack. This statement would require the nurse to reteach about the medication.

6. 1. Diarrhea may indicate the client may have a superinfection, but it is not the priority intervention at this time because the antibiotic would still be administered.
   2. The peak level is not drawn until one (1) hour after the medication has been infused.
   3. **The trough level must be drawn prior to administering this dose; therefore, it is the priority intervention.**
   4. The culture and sensitivity (C&S) has already been done because it is known the client has MRSA.


7. 1. At eight (8) hours postoperative the client should be on bedrest, and moving the client to a chair will not help the incisional pain and could cause hip dislocation.
   2. **Normal developmental changes in the organs of the elderly, especially the kidneys and liver, result in lower doses of pain medication needed to achieve therapeutic levels.**
   3. This is a neurological assessment, which is not pertinent to the extremity assessment.
   4. The urinary output would not affect the administration of pain medication.


8. 1. Iron dextran is administered for iron-deficiency anemia intravenously or intramuscularly, not subcutaneously.
   2. **Vitamin B₁₂ is administered for pernicious anemia because there is insufficient intrinsic factor produced by the rugae in the stomach to be able to absorb and use vitamin B₁₂ from food sources.**
   3. Folic acid is administered orally or intravenously for folic acid deficiency, which is usually associated with chronic alcoholism.
   4. Thiamine is administered intravenously in high doses to clients detoxifying from chronic alcoholism to prevent rebound nervous system dysfunction.


9. 1. **This medication stimulates the pancreas to secrete insulin. Therefore, the client is at risk for developing hypoglycemic reactions, especially during exercise.**
   2. This is an oral hypoglycemic medication.
   3. There are side effects to every medication; this medication can cause hypoglycemia.
   4. The medication stimulates the pancreas to produce more insulin, but it does not affect the muscles’ absorption of glucose.


10. **10 units.**

    The nurse should administer the dosage for the appropriate parameters.


11. 1. **This test monitors the client’s average blood glucose level over the previous three (3) months.**
   2. The evening meal would prevent hypoglycemia for regular insulin administered at 1630.
   3. The before-meal (a.c.) blood glucose level done at 1630 would not be affected by the insulin administered after that time.


12. 1. The nurse would not question administering insulin to a client about to eat.
   2. The client who is one (1) day postoperative would be receiving a prophylactic antibiotic.
   3. **Glucophage must be held 24 to 48 hours prior to receiving contrast media (dye) because Glucophage, along with the contrast dye, can damage kidney function.**
   4. The client with peptic ulcer disease would be ordered a proton pump inhibitor to help decrease gastric acid production.

   **Content – Pharmacology:** Category of Health Alteration – Drug Administration: Integrated
13. 1. This insulin is scheduled for bedtime.
2. The charge nurse should double-check the dosage against the MAR to make sure the client is receiving the correct dose; this insulin does not peak and works for 24 hours.
3. There is not a medication error at this time.
4. The HCP would only need to be notified if a serious medication error has occurred.

14. 1. These are signs/symptoms of hypothyroidism, which indicates not enough medication.
2. These indicate not enough medication is being administered.
3. Irritability and tachycardia are signs/symptoms of hyperthyroidism, which indicates the client is receiving too much medication.
4. Normothermia indicates a normal temperature, which does not indicate hypothyroidism or hyperthyroidism, and constipation is a sign of hypothyroidism.

15. 1. The therapeutic heparin level is 1.5 to 2 times the control, which is 58 to 78; therefore, a PTT of 72 is within the therapeutic range so the nurse should continue to monitor the infusion. PT/INR are used to monitor the oral anticoagulant warfarin (Coumadin).
2. Protamine sulfate is the antidote for heparin toxicity, but the client is in the therapeutic range.
3. There is no need for the laboratory to reconfirm the results.
4. The nurse would not need to assess for bleeding because the results are within the therapeutic range.

16. 1. A STAT potassium level would be needed for problems with digoxin or a diuretic, not for bleeding.
2. The nurse needs more information before requesting an admission into the hospital.
3. Valium IVP does not help bleeding.
4. Ecchymotic areas are secondary to bleeding. The nurse should order an INR to rule out warfarin (Coumadin) toxicity.

17. 1. The medication must be taken first thing in the morning before breakfast on an empty stomach; no food, juice, or coffee should be consumed for at least 30 minutes.
2. Remaining in the upright position minimizes the risk of esophagitis; the drug should be taken with eight (8) ounces of water.
3. The tablet should be swallowed, not chewed, and should not be allowed to dissolve until it is the stomach.
4. There is no monthly hormone level to determine the effectiveness of this medication; it is determined by a bone density test.

18. 1. A daily digoxin dose is not priority medication.
2. This potassium level is very low, and the nurse should not administer the loop diuretic.
3. The mucosal barrier must be administered on an empty stomach; therefore, it should be administered first.
4. An IVP medication is not priority over problems with digoxin or a diuretic, not for bleeding.

19. 1. Attempting to prevent CHF is the rationale for administering ACE inhibitors to clients diagnosed with MIs. This medication is administered
for a variety of medical diagnoses, such as heart failure and stroke, and to help prevent diabetic nephropathy.

2. ACE inhibitors are prescribed to help decrease blood pressure, but the stem states the client has had an MI, not essential hypertension.

3. Cardiac glycosides such as digoxin, not ACE inhibitors, increase the contractility of the heart.

4. Antilipidemics, not ACE inhibitors, help decrease the development of atherosclerosis.


20. 1. ACE inhibitors may increase potassium levels. The client should avoid potassium salt substitutes and supplements; therefore, the nurse would not question the fact the client is not receiving potassium supplements.

2. An adverse effect of ACE inhibitors is the possibility of a persistent irritating cough, which might precipitate the HCP's changing the client's medication.

3. This blood pressure indicates the medication is effective.

4. A urinary output of 30 mL/hr indicates the kidneys are functioning properly.


21. 1. The apical heart rate is assessed prior to administering the dose, but it does not indicate the medication is effective.

2. Anorexia and nausea are signs of digoxin toxicity and do not indicate if the medication is effective.

3. Digoxin has no effect on the client's blood pressure.

4. **Digoxin is administered for heart failure and dysrhythmias. Clear lung sounds indicate the heart failure is being controlled by the medication.**


22. 1. Abrupt discontinuation of baclofen is associated with hallucinations, paranoia, and seizures.

2. This medication causes constipation and urinary retention.

3. The client should not be allowed to drive at all when taking this medication because it causes drowsiness, and the spasticity of MS makes driving dangerous for the client.

4. White blood cell levels do not need to be monitored because the drug does not cause bone marrow suppression.


23. 1. **If the apical heart rate is less than 60, the nurse should question administering this medication.**

2. The client's potassium level, not the sodium level, should be monitored.

3. **The client should be taught to monitor the radial pulse at home and not to take the medication if the pulse is less than 60 because this medication will further decrease the heart rate.**

4. The digoxin level should be between 0.8 and 2 ng/mL to be therapeutic.

5. The client with digoxin toxicity would complain of anorexia, nausea, and yellow haze; buffalo hump and moon face would be assessed for the client taking prednisone, a glucocorticoid.


24. 1. The respiratory rate and pulse rate would not affect the administration of this medication.

2. The apical heart rate (AP) of 59 would cause the nurse to question administering this medication because beta blockers decrease the sympathetic stimulation to the heart, thereby deceasing the heart rate.

3. These vital signs would not warrant the nurse questioning administering an antibiotic.

4. The blood pressure is higher than 90/60; therefore, the nurse would not question administering the calcium channel blocker.

25. 1. Epogen stimulates the client’s own bone marrow to produce red blood cells; therefore, this is not a violation of the client’s religious beliefs about blood products.
2. There is no reason for the client to have problems receiving this medication because of religious beliefs, so the client does not need to talk to the minister.
3. This medication does not violate the Jehovah Witnesses’ beliefs concerning receiving blood products; therefore, the nurse should administer the medication via the correct route.
4. This is not an invasive procedure or investigational medication and thus informed consent is not needed.


26. 1. Because the client is NPO as a result of the admitting diagnosis, the client needs alternative antianxiety medication to prevent withdrawal symptoms, but this is not the first intervention.
2. The client will be NPO as a result of the diverticulitis, and Xanax is administered orally; therefore, another route of medication administration is needed, but this is not the first intervention.
3. This is correct information, but it is not the priority intervention.
4. Xanax has a greater dependence problem than all the other benzodiazepines; therefore, the nurse must assess for withdrawal symptoms first. Then the nurse can implement the other interventions. The client needs to be withdrawn slowly from the benzodiazepines, but assessment is priority.


27. 1. This is the outer canthus, and medications are not administered to this area.
2. The correct placement of ophthalmic drops is to administer the medication in the lower conjunctival sac.
3. This is the sclera, and the correct placement of eyedrops is in the lower conjunctival sac.
4. This is the inner canthus, where pressure can be applied gently after instilling eyedrops to help prevent the systemic absorption of ophthalmic medications.


28. 1. This potassium level is within normal limits; therefore, the nurse would administer the medication.
2. This indicates the medication is effective and the nurse should not question administering the medication.
3. This indicates the client is dehydrated and the nurse should discuss this with the HCP prior to administering another dose, which could increase the dehydration and could cause renal failure.
4. This indicates the medication is effective. Daily weight changes reflect fluid gain and loss.


29. 1. The nurse should investigate any herbs a client is taking, especially if the client has a condition which requires long-term medication, such as antirejection medication.
2. The nurse should remain nonjudgmental but must intervene if the alternative treatment poses a risk to the client.
3. The client may need to be referred for psychological counseling, but it is not the first action the nurse should take.
4. St. John’s wort decreases the effects of many medications, including oral contraceptives, antiretrovirals, and transplant immunosuppressant drugs. Rejection of the client’s kidney could occur if the client continues to use St. John’s wort.


30. 1. This is the rationale for H-2 antagonists and proton pump inhibitors.
2. Antacids neutralize gastric acidity.
3. This is the rationale for mucosal barrier agents.
4. Prostaglandin is responsible for production of gastric acid. Antacids do not interfere with prostaglandin production. 


31. 1. The client’s temperature would not affect the administration of this medication.
2. ACE inhibitors sometimes cause the client to develop a cough which requires discontinuing the medication, but this is a calcium channel blocker.
3. This blood pressure reading indicates the client’s medication is effective.
4. **This indicates orthostatic hypotension, and the nurse should assess the client’s BP before administering the medication.**

**Content – Pharmacology: Category of Health Alteration – Drug Administration: Integrated Nursing Process – Assessment: Client Needs – Safe Effective Care Environment, Management of Care: Cognitive Level – Analysis.**

32. 1. An unlabeled use for quinine is the prophylaxis and treatment of nocturnal leg cramps which are associated with arthritis, diabetes, varicose veins, and arteriosclerosis.
2. A muscle relaxant is prescribed for muscle spasms, and leg cramps are not always the result of muscle spasms.
3. The question is addressing the relief of leg cramps, and sleeping pills will not help leg cramps.
4. The client does not need an opioid analgesic because it may cause addiction; this type of medication is given for acute pain for a short period. Prolonged use of Ddarwin compounds also predisposes the client to renal cell carcinoma.

**Content – Pharmacology: Category of Health Alteration – Drug Administration: Integrated Nursing Process – Assessment: Client Needs – Safe Effective Care Environment, Management of Care: Cognitive Level – Analysis.**

33. 1. The nurse should always assess for allergies, but especially when administering antibiotics, which are notorious for allergic reactions.
2. If specimens are not obtained for C&S prior to administering the first dose of antibiotic, the results will be skewed.
3. **One (1) of the five (5) rights is to administer the medication to the “right client.” Checking the armband on the client with the MAR and medication is a way to ensure this.**

4. **The 2005 Joint Commission standards require two forms of identification prior to administering medications. The client’s armband and medical record number provide one form of identifying information, and the client’s birthday is the second form of identification in most health-care facilities. This is a nationwide emphasis to help prevent medication errors.**

5. The stem does not state it is an aminoglycoside antibiotic, and it is the initial dose, which means there is no medication in the system even if it were an aminoglycoside antibiotic.


34. 1. This medication is prescribed for clients with an overactive bladder.
2. There is no contraindication for a client with type 2 diabetes receiving this medication.
3. **These drugs cause mydriasis, which increases the intraocular pressure, which could lead to blindness. Glaucoma is caused by increased intraocular pressure.**

4. There is no contraindication for a client with peripheral vascular disease receiving this medication.


35. 1. The nurse should use nonsterile gloves to apply ointment but should first wash his or her hands.
2. The client’s leg should be cleansed prior to administering a new application of ointment, but it is not the first intervention.
3. The nurse should always check the client’s armband, but it is not the first intervention when the nurse enters the room.
4. **Hand washing is the first intervention which must be done when the nurse enters the client’s room before any contact with the client; it is also the last intervention the nurse does after caring for the client and leaving the room.**

Cognitive Level

Physiological Integrity, Reduction of Risk Potential: Alteration


1. The ST segment becoming more depressed indicates a worsening of the oxygenation of the myocardial tissue.

2. Reperfusion dysrhythmias indicate the ischemic heart tissue is receiving oxygen and is viable heart tissue.

3. The creatine kinase CK-MB isoenzyme elevates when there is necrotic heart tissue and does not indicate if thrombolytic therapy is successful.

4. D-dimer is used to diagnose pulmonary embolus.


36. 1. Adenosine is ordered for supraventricular tachycardia.

2. Epinephrine is administered during a code to vasoconstrict the periphery and shunt the blood to the central circulating system.

3. Atropine is used for asystole or symptomatic sinus bradycardia.

4. Lidocaine is the drug of choice for ventricular irritability. It suppresses ventricular ectopy.


37. 1. The blood pressure must be continuously monitored more often, at least every 10 to 15 minutes.

2. The peripheral pulses should be monitored more frequently than every shift, but dopamine has no direct effect on the peripheral pulses.

3. The client’s urine output should be monitored because low-dose dopamine is administered to maintain renal perfusion; higher doses can cause vasoconstriction of the renal arteries.

4. Dopamine is not inactivated when exposed to light.


38. 1. The ST segment becoming more depressed indicates a worsening of the oxygenation of the myocardial tissue.

2. Reperfusion dysrhythmias indicate the ischemic heart tissue is receiving oxygen and is viable heart tissue.

3. The creatine kinase CK-MB isoenzyme elevates when there is necrotic heart tissue and does not indicate if thrombolytic therapy is successful.

4. D-dimer is used to diagnose pulmonary embolus.


39. 1. Tinnitus, ringing in the ears, is a sign of aspirin toxicity and needs to be reported to the HCP; the aspirin should be stopped immediately.

2. Diarrhea is a complication of many medications but not with aspirin.

3. Tetany is muscle twitching secondary to hypocalcemia.

4. Aspirin does not cause paresthesia, which is numbness or tingling.


40. 1. Loop diuretics cause loss of potassium in the urine output; therefore, the client should be receiving potassium supplements. Hypokalemia can lead to life-threatening cardiac dysrhythmias.

2. A cardiac glycoside, digoxin, is administered for congestive heart failure, but it is not necessary when administering a loop diuretic.

3. An ACE inhibitor is not prescribed along with a loop diuretic. It may be ordered for congestive heart failure.

4. A potassium cation, Kayexalate, is ordered to remove potassium through the bowel for clients with hyperkalemia.


41. 1. Interferon is administered to treat hepatitis and some cancers, but it does not stimulate the bone marrow.

2. Neupogen is a granulocyte-stimulating factor which stimulates the bone marrow to produce white blood cells (WBCs), which this client needs because the normal WBC count is 4.5 to 11.0 (× 10^3)/mm³.

3. Neumega stimulates the production of platelets, but the client’s platelet count of 160 is normal [100 to 400 (× 10^3)/mm³].

4. Procrit stimulates the production of red blood cells and hemoglobin, but a hemoglobin of 12.2 is normal for a woman (11.5 to 15.5 g/dL).


42. 1. This medication must be taken for life because the client has to have received some
type of transplant or have severe rheumatoid arthritis for it to be prescribed.

2. Exposure to hepatitis does not have anything to do with receiving this medication.

3. **Imuran is not a drug of choice for treating pneumonia; therefore, the nurse must find out why the client is taking it (either for a renal transplant or for severe rheumatoid arthritis).**

4. Imuran does not affect the antigen–antibody reaction.

**Content – Pharmacology: Category of Health**


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45. 1. The pituitary gland is not directly affected by the steroid and is not why the medication must be gradually tapered.

2. Steroids do not affect the pancreas’s production of insulin.

3. **When the client is receiving exogenous steroids, the adrenal glands stop producing cortisol, and if the medication is not tapered, the client can have a severe hypotensive crisis, known as adrenal gland insufficiency or addisonian crisis.**

4. The adrenal gland, not the thyroid gland, produces cortisol.

**Content – Pharmacology: Category of Health**


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46. 1. This medication is taken up to one (1) year, and the public health department will pay for the medications and make sure the client complies because it is a public health risk.

2. The client is in isolation until three (3) consecutive early-morning sputum cultures are negative, which is usually in about two (2) to four (4) weeks.

3. Pork products do not interact with these medications.

4. The client’s urine and all body fluids may turn orange from the rifampin.

**Content – Pharmacology: Category of Health**


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47. 1. This medication should be administered intradermally with the needle barely inserted under the skin so a wheal (bubble) forms after the injection.

2. The nurse would not administer another narcotic, which is what caused the need for Narcan in the first place.

3. Oxygen will not help reverse respiratory depression secondary to a narcotic overdose.

4. **Narcan is administered when the client has received too much of a narcotic. Narcan has a short half-life of about 30 minutes and the client will be at risk for respiratory depression for several hours; therefore, the nurse should assess the client frequently.**

**Content – Pharmacology: Category of Health**


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