

Practice Problem Set #2

1. Amphotericin B, an antifungal antibiotic, is infused intravenously. Dosing of the medication traditionally occurs in the following manner:

day 1, the patient receives 0.25mg/kg

day 2, 0.5mg/kg

day 3, 0.75mg/kg

1mg/kg daily thereafter.

Kidney damage is most likely to occur in patients who receive a total amphotericin amount of greater than 2gm.

Please calculate how many days a patient weighing 160lbs can receive amphotericin B using the regimen outlined above, before becoming at risk for kidney toxicity.

_____ days

2. A physician writes the following order for a hospitalized patient:

“Acetaminophen suppository 650mg prn oral temperature $>101^{\circ}\text{F}$ ”

A nurse measures the patient’s temperature and finds it to be 38°C . What is the patient’s temperature in $^{\circ}\text{F}$? What should the nurse do?

_____ $^{\circ}\text{F}$

_____ the nurse should give the suppository

_____ the nurse should not give the suppository

3. You are asked to mix a “pain cocktail” for a patient. The prescription reads as follows:

methadone 5mg/5ml

hydroxyzine 25mg/5ml

qs with cherry syrup to 240ml.

You decide to use the following products: methadone syrup, 10mg/5ml, and hydroxyzine capsules, 25mg. Please note how much methadone syrup you will use to compound this prescription, how many hydroxyzine capsules, and approximately how much cherry syrup you will add.

_____ ml methadone syrup, 10mg/5ml

_____ hydroxyzine 25mg capsules

_____ ml cherry syrup

4. A patient is receiving an asthma medication, albuterol, via a metered-dose inhaler (MDI), which delivers 90 mcg of drug per actuation of the inhaler. Approximately 10% of the dose actually reaches the lungs. If the patient uses a holding chamber (a special type of spacer), he/she can increase the total amount of drug delivered by an additional 10%. How much drug, then, will the patient receive in one puff (actuation) of the inhaler?

_____ mcg albuterol reaches lungs when holding chamber used

5. If the patient in question 4 nebulizes (aerosolizes) this drug, approximately 10% of the drug solution will remain in the nebulizer (and will therefore be unavailable for nebulization). Of that solution available for nebulization, the patient inhale only 10% of it. Assuming that 10% *of the amount that is nebulized* is absorbed, how many actuations (puffs) of an albuterol MDI inhaler would be needed to equal the dose delivered by one use of the nebulizer? The standard dose of albuterol used for nebulization is 2.5mg.

_____puffs albuterol MDI inhaler

6. A physician has ordered parenteral nutrition for a patient at 2L/day and wants the patient to receive 15mmol/L of phosphate and a daily dose of 60mEq of potassium. The vial of potassium phosphate contains 3mmol of phosphate and 4.4mEq of potassium per milliliter. The remainder of the potassium will be added as the chloride salt (potassium chloride stock solution contains 2mEq/ml). Please calculate how many milliliters of potassium to add to each liter of the IV solution as the chloride salt.

_____ml of potassium chloride

7. A 68 year-old, 160-pound male patient with a serum creatinine of 1.1mg/dL is to receive gentamicin intravenously. Normal dosing for gentamicin is 1.5-2mg/kg q8h. One method of adjusting the dosage of gentamicin in patients with renal insufficiency is the Dettli method, which adjusts the dosing interval (not the dose) in the following manner:

$$\frac{0.693}{(\text{CrCl} \times 0.0024) + 0.01} \times 3 = \text{dosing interval}$$

Calculate this patient's creatinine clearance and recommend a reasonable gentamicin regimen.

_____ml/min CrCl

I would recommend gentamicin _____mg IV q____h for this patient

8. Heparin is an anticoagulant (blood thinner) given intravenously to prevent thromboembolic events such as stroke and pulmonary embolism (blood clots in the lungs). Heparin comes premixed in a bag which contains 25,000 units in 500ml. If a standard infusion rate for a patient is 15 units/kg/hr, how many milliliters/hour will a 170 pound male receive? (round to the nearest whole milliliter)

_____ml/hr

9. The regimen of choice for treatment of *Pneumocystis carinii* pneumonia in AIDS patients is 15-20mg/kg/day of the trimethoprim component of trimethoprim/sulfamethoxazole (trade names: Bactrim, Septra). A physician has decided to treat a 150 pound patient with the double-strength oral dosage form, which contains 160mg trimethoprim and 800mg sulfamethoxazole per tablet. Given that the total amount administered is usually divided into three or four doses per day, recommend a dosing regimen to the physician for this patient.

I would recommend _____ trimethoprim/sulfamethoxazole DS tablets to be given _____ times a day.

10. A physician has ordered a patient to receive 1 and 1/4 grain of aspirin daily. How many mg of aspirin should be in the product that the patient takes?

_____mg