Practice Problem Set #7

Questions 1-6 deal with the following scenario: A 54 year old gentleman visiting the Seattle area while on a business trip from Canada became ill and presented to the ER of a local hospital with shaking chills, a fever of 102.8°F (oral) and a productive cough. A chest x-ray showed bilateral lower lobe infiltrates and the man was admitted to your service with a diagnosis of pneumonia.

1. When you go in to interview him, the patient tells you that the nurse told him that his temperature had dropped to 101.9°F after a dose of acetaminophen. He would like to know what this is in °C, since these are the units that make sense to him.

_____°C

2. The ER physician has ordered that the patient be given ceftizoxime 2g IV q8h. You notice, upon examining the patient's labs, that his serum creatinine is 2.6 mg/dL. Upon questioning, the patient tells you that his usual weight is 13 stone. A "stone" is a commonly-used weight unit in the Commonwealth countries. One stone equals 14 pounds. He says he is 188cm in height. Facts and Comparisons ® gives you the following information about ceftizoxime:

Ceftizoxime dosage in renal impairment	
CrCl (ml/min)	severe infections
50-79	750mg - 1.5g IV q8h
5-49	500mg - 1g IV q12h
0-4	500mg - 1g IV q48h

What is this patient's calculated creatinine clearance?

_____ml/min

Please check the dose. Would you recommend a change?

_____ no _____ yes, I recommend _____mg IV q_____h

3. The order is received in the pharmacy. Ceftizoxime is carried there as a 1g vial. The technician will need to dilute this vial with 10ml sterile water, resulting in a total volume of 10.7 ml. How much fluid will the technicians need to withdraw from the vial in order to make one of the doses that you have specified?

_____ ml

4.In addition to his increased serum creatinine, you note that this patient has a blood glucose of 230 mg/dL. You ask the patient about a history of diabetes and he tells you that he has been on insulin for about 15 years now. He checks his blood glucose daily at home, and has a target range of "4-6." He is alarmed at the 230 figure. You know that the Canadian blood glucose units are mmol/L. What is this patient's blood glucose in units that he will understand? (glucose MW: 180)

_____ mmol/L

5. The physician decides to place this patient on an insulin drip at 1.5 units/hr. Your "standard" insulin drip concentration is 50 units in 250ml NS, but the physician wants you to "double concentrate" the drip in order to limit the patient's daily fluids. How will you mix this drip and what infusion rate should the nurse set the pump to run at?

I will place _____ units of insulin in a (circle one): 50ml 100ml 250ml bag of NS.

The nurse should program the pump to run at: _____ ml/hr

6. The physician notes that the patient's potassium serum concentration is 7.2 mEq/L and that the patient is experiencing some EKG changes which make him want to treat the high potassium level. A common medication given to lower the potassium is sodium polystyrene sulfonate. The physican has selected a dose of 15g po QID and would like to know when to expect a potassium level of less than 6.0 mEq/L. You know that, as a general rule of thumb, 50g of this medication will decrease a serum potassium by 0.5-1 mEq/L, and that the onset of action of this drug is somewhere between 2 and 12 hours. What answer will you give this physician? *Note: you will need to use logic in order to solve this problem. Think about where you would expect the patient to be at 2-12 hours after each dose.*

It will take approximately _____ hours days (please circle one) for this patient's potassium to decrease below 6.0 mEq/L.

7. A 13-month-old child spent the better part of a weekend irritable and finally got to the point where he just cried and wanted to be cuddled. The worried mother called a friend who was a pediatrician who came over, looked in the ears, and diagnosed a very severe ear infection. He recommended starting out at the high end of the standard amoxicillin 30-50mg/kg/day dosing schedule. The next morning the child was taken to a nurse practitioner who confirmed the diagnosis and prescribed amoxicillin 250mg/5ml, 1/2 teaspoonful three times a day for 10 days. The child weighed 23.1 pounds. Does this dose agree with the pediatrician's recommended dose?

_____ yes

_____ no; The pediatrician would recommend a dose of _____ ml po TID x 10 days

8. A patient is prescribed:

ofloxacin 10mg/ml
5ml

sig: i gtt ou BID

You have ofloxacin 3mg/ml (standard preparation) on your shelf. You also have ofloxacin injection for IV 400mg/5ml of solution. How much of this concentrated solution will you add to your 3mg/ml preparation in order to make the final preparation specified in the prescription? (hint: assume you will withdraw the same amount of 3mg/ml fluid from the eyedropper that you will add as stock solution)

I will add _____ml of ofloxacin _____ mg/ml stock solution.

9. Some medications are dosed for patients according to their “ideal body weight” (IBW), but only if a patient’s actual body weight (ABW) is 25% or more above their IBW. The common equation used for calculating IBW is:

male: 50kg + (2.3kg)(each inch > 5 ft) = IBW in kg

female: 45kg + (2.3kg)(each inch > 5ft) = IBW in kg

Please calculate the ideal body weight, in pounds, for a 5'3" female who weighs 140 pounds.

_____ pounds

10. Gentamicin is a medication dosed based on IBW. The general recommendations for patients with good kidney function are:

1.5mg/kg IV q8h

If a patient is above 125% of their IBW, it is recommended that the weight be adjusted as follows:

[IBW + 0.4(ABW - IBW)] = adjusted body weight (all weight units are kilograms)

Please determine a suitable gentamicin dose for the patient in question 9.

_____ mg IV q8h