Dosage calculation Practice

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#1. The IVPB you are to administer contains 350mg of ceftriaxone mixed in 25mL of NS. The recommended range is 10mg - 40mg/mL. Does the Dilution fall under the recommended range?

$\frac{350mg}{25mL} = 14mg/mL$

The dilution falls in the range

#2. Medication: Ranitidine 18mg what is the concentration of this medication?
Mixed in: 10mL NS

$\frac{18mg}{10mL} =$ 1.8mg/mL

#3. The pediatric dose for piperacillin sodium is 200mg - 300mg/kg/24hrs in equally divided doses every 4-6 hrs. The patient weighs 30kg. Which of the following is within the recommended range?

6,000mg - 9,000mg

200mg x 30kg = 6,000mg

300mg x 30kg = 9,000mg

2,000 x 6 (q4hrs) = 12,000 X

1,200 x 6 (q4hrs) = 7,200 ✓

~~1450 x 6 = 8,400~~

1450 x 4 = 5,800 X

6000 x 4 = 24,000 X

#4. Calculation based on once a day dose.

Patient: 20kg, 5y.o.

Prescribed medication: 1,000mg of ceftriaxone daily

recommended dose: 50 to 75mg/kg of body weight in 24hrs as a single dose or in equally divided doses q 12hrs. Do not exceed a total dose of 2gm in 24 hrs.

50 x 20 = 1000

75 x 20 = 1500

1,000mg - 1500mg

The Prescribed medication is in the recommended range

#5. Calculation based on BID dose

Patient: 20kg, 5yo.

Prescribed medication: 700mg of ceftriaxone, BID

recommended dose: 50-75mg/kg

1000 - 1500mg = range

700mg x 2 = 1400mg

The prescribed medication is in the recommended range

#6. Which of the following is a recommended dose for a 30 kg child? The medication is vancomycin (Vancocin).

Recommended dose for pediatric patient: 40mg/kg/24 hrs equally divided & given every 6, 8, or 12 hrs. do not exceed 2 gm in 24 hrs.

40 x 30 = 1200 mg/24 hrs **B. 400mg every 8 hrs**

1200 ÷ 4 (q 6 hrs) = 300mg

1200 ÷ 3 = 400 ~~mg~~ mg/8 hrs

1200 ÷ 2 = 600mg/12 hrs

#7. What is the recommended rate of administration for a 25mL IVPB to be given over 30 minutes?

~~Im~~ $\frac{25mL \times 60gtt/mL}{30 \text{ minutes}}$ = **50 mL/hr**

#8. (Additional problems)

Patient: 6.5kg, toddler, diagnosis of acute otitis media

Prescribed medication: administer 275mg amoxicillin (Amoxil) every 12 hrs

recommended dose: Acute otitis media: 80-90 mg/kg/day divided every 12 hrs

Concentration of suspension: Amoxicillin suspension 250mg/5mL

The recommended range is 260 to 292.5 mg every 12 hours

The nurse will administer 5.5mL of amoxicillin every 12 hours.

80mg x 6.5 = 520/2 = 260

90 x 6.5 = 585/2 = 292.5

520 ~~585~~/day/12 hrs

250 mg/5mL = ~~50mg/5ml~~ 50mg/mL

275mg/50mg/mL = 5.5mL

#9.

Patient: 15kg, 3.yo.

Prescribed medication: Administer 1.1 gm of Ceftriaxone, IV q12 hrs

recommended dose: 50mg - ~~20m~~ 75mg/kg of body weight/24hr as a single dose or equally divided doses q12 hrs. Do not exceed a total dose of 2gm/24hrs.

The nurse would:

contact the primary care provider regarding the dose exceeding the recommended range.

1.1 gms x 2 = 2.2 gms/24 hrs

(Additional problems)

#10.

Patient: 16 kg child

Prescribed medication: 640mg meropenem (merrem), IVPB q8hrs

Label on IVPB: meropenem 640mg in 25mL NS

recommended dose: 40mg/kg q8hrs

Dilution/concentration: 2.5-50mg/mL

rate of administration: intermittent infusion may be given over 15-30min by IV pump

640mg / 25mL = 25.6 mg/mL

40mg x 16 = 640mg

$\frac{25mL \times 60gtt}{15min} = 100mL/hr$

$\frac{25mL \times 60gtts}{30min} = 50mL/hr$

A. administer the medication at 50mL/hr

#11.

Prescribed medication: Gentamycin sulfate 10mg mixed in 50mL NS every 8 hrs

Rate of administration: administer each dose over a minimum of 20 min or a maximum of 30 min

~~10mg/50mL~~ $\frac{50mL \times 60gtt}{20\ min} = 150\ mL/hr$ $\frac{50mL \times 60gtt}{30min} = 100mL/hr$

150mL/hr - 100mL/hr

C. 100 mL/hr