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Practice question #1
The IVPB you are to administer contains 350 mg of ceftriaxone mixed in 25 mL of Normal Saline.

The recommended range is 10mg to 40 mg per mL.

Does the dilution fall in the recommended range? Yes

$\frac{350\ mg}{25\ mL}$ = 14 mg of ceftriaxone in each mL

Practice question #2
Medication: Ranitidine 18 mg
Mixed in: 10 mL normal saline

What is the concentration of this medication?

$\frac{18\ mg}{10\ mL}$ = 1.8 mg of Ranitidine in each mL

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

A. 2,000 mg every 4 hours
B. 1,200 mg every 4 hours
C. 1,450 mg every 6 hours
D. 6,000 mg every 6 hours

200 · 30 = 6000 mg / q4° → 1000 ; q6° → 1500
300 · 30 = 9000 mg q4° → 1500 ; q6 → 2250

Practice question #4
Calculation based on once-a-day dose.
Patient: 20 kg, 5-year-old

50 75
↓ ↓
Range = 1000 mg - 1500 mg

Prescribed Medication: 1,000 mg of ceftriaxone daily

Medication Reference
Recommended Dose: 50 to 75 mg/kg of body weight in 24 hours as a single dose or in equally divided doses every 12 hours. Do not exceed a total dose of 2 gm in 24 hours.

Is the prescribed medication in the recommended range? yes

Practice question #5
Calculation based on BID dose.
Patient: 20 kg, 5-year-old

~~50~~ 50 75
↓ ↓
Range → 1000 mg - 1500 mg

Prescribed Medication: 700 mg of ceftriaxone, BID.

Medication Reference
Recommended Dose: 50 to 75 mg/kg of body weight in 24 hours as a single dose or in equally divided doses every 12 hours. Do not exceed a total dose of 2 gm in 24 hours.

Is the prescribed medication in the recommended range? Yes

Practice question #6

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

Medication Reference

Recommended Dose for Pediatric Patient: 40 mg/kg/24 hours equally divided and given every 6, 8, or 12 hours. Do not exceed 2 gm in 24 hours.

40 · 30 = 1200 mg/24 hrs 2 gm → 2000 mg

A. 200 mg every 6 hours
B. 400 mg every 8 hours
C. 100 mg every 12 hours
D. 1,200 mg every 24 hours

Practice question #7

- What Is the Recommended Rate Of Administration For A 25 mL IVPB To Be Given Over 30 Minutes?

50 mL

- The IVPB Will Be Administered by IV Pump

$\frac{25\text{ mL}}{30\text{ min}} \times 60 = 50\text{ mL}$

Additional practice problems

1. **Patient:** A 6.5 kg, toddler, with the diagnosis of acute otitis media.

   Prescribed Medication: Administer 275 mg amoxicillin (Amoxil) every 12 hours

   Medication Reference
   Recommended Dose: Acute otitis media: 80 to 90 mg/kg/day divided every 12 hours

   80 → 520 — 90 → 585 mg
   260 — 292.5

   Concentration of Suspension: Amoxicillin suspension 250mg / 5 ml

   The recommended range is 260 mg to 292.5 mg every 12 hours.

   The nurse will administer 5.5 ml of amoxicillin every 12 hours

   $275\text{mg} \cdot \frac{5\text{ mL}}{250\text{ mg}} = \frac{1375}{250} = 5.5$

2. **Patient:** 15 kg, 3-year-old

   Prescribed Medication: Administer 1.1 grams of ceftriaxone (Rocephin), IV every 12 hours

   (2 gm = 2000 mg MAX/24 hrs)

   Medication Reference
   Recommended Dose: 50 to 75 mg/kg of body weight/24 hr as a single dose or in equally divided doses every 12 hours (25 to 27.5 mg/kg every 12 hours). Do not exceed a total dose of 2 gm/24 hours

   25 → 27.5
   Range: 375 — 412.5 mg

   The nurse would

   A. administer the medication.

   B. contact the primary care provider regarding a dose below the recommended range.

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

3. **Patient:** 16 kg child

Prescribed Medication: 640 mg meropenem (Merrem), IVPB every 8 hours

Label on IVPB: Meropenem 640 mg in 25 ml normal saline.

Medication Reference
Recommended Dose: 40 mg/kg every 8 hours
Dilution/Concentration: 2.5 to 50 mg/ml
Rate of Administration: Intermittent infusion may be given over 15 to 30 minutes by IV pump

Recommended Dose: 640 mg q8 hrs

Dilution: 25.6 ÷ 2.5 ; 25.6 ÷ 50

↓ ↓

64 - 1280

640 ÷ 25 -> 25.6

25.6 mg of Meropenem per mL

The prudent nurse will

A. administer the medication at 50 ml/hr.
B. administer the medication at 125 ml/hr.
C. contact the pharmacist regarding the concentration.
D. contact the primary care provider regarding the ordered dose.

4. Prescribed medication: Gentamycin sulfate 10 mg mixed in 50 mL normal saline every 8 hours.

Rate of Administration: Administer each dose over a minimum of 20 minutes or a maximum of 30 minutes.

The most appropriate rate for the nurse to set the IV pump is how many milliliters per hour?

A. 50

B. 75

C. 100

D. 160