1. Order: Luminal (Phenobarbital) 100 mg po q 12h. The manufacturer recommends a maintenance dose of 3-5 mg/kg/day. The child’s weight is 30 kg. a) How mg/kg/day expressed to the 100ths place have been ordered for this patient?

b) What is the minimum and maximum safe dose range expressed in mg/dose as whole numbers?

c) Is this dose appropriate for this patient?

2. Order: Phenobarbital 15 mg po BID. Available: Phenobarbital 20mg/5mL oral suspension. Child’s weight 4.5 kg Recommended dose: 5-7 mg/kg/day. a) How mg/kg/day have been ordered for this patient expressed to the 100ths place?

b) What is the minimum and maximum mg/dose this patient may receive expressed to the 100ths place?

c) Is this dose appropriate for this patient?

3. A unit of blood was to infuse over a period of no more than 4 hours. It was started at 2300 hrs. At 0130, 150mL remain. Administration set: 15gtts/mL. At what rate (gtts/min) would you administer the blood to complete the transfusion within the allotted number of hours?

4. If you have to give 200 mL of NS over one hour and the infusion set delivers 15 gtts/mL, how many gtts/min will you have to set the solution set to deliver the NS in the correct time frame?
5. The patient has an order to give a total of 125 ml/hr of IV fluids. The patient has a Lidocaine drip infusing at 4mg/min. The drip is mixed as 4gm/250mL. At how many mL/hr should the maintenance fluid be running for a total IV fluid intake of 125 mL/hr?

6. The patient is to receive a blood transfusion of 4 units of packed Red Blood Cells. Each unit contains 250mL. You begin the first unit at 1200, and by 1800 the fourth unit should be completely infused. The administration set is 10gtts/mL. What is the drop rate?

Answers

1a. \[ \frac{mg}{kg/\text{day}} = \frac{100mg}{\text{dose}} \times \frac{2\text{dose}}{\text{day}} \times \frac{1}{30kg} \]

1b. \[ \frac{mg}{\text{dose}} = \frac{3mg}{kg/\text{day}} \times \frac{30kg}{1} \times \frac{1\text{day}}{2\text{dose}} \text{ to } \frac{mg}{\text{dose}} = \frac{5mg}{kg/\text{day}} \times \frac{30kg}{1} \times \frac{1\text{day}}{2\text{dose}} \]

1c. NO

2a. \[ \frac{mg}{kg/\text{day}} = \frac{15mg}{\text{dose}} \times \frac{2\text{dose}}{\text{day}} \times \frac{1}{4.5kg} \]

2b. \[ \frac{mg}{\text{dose}} = \frac{5mg}{kg/\text{day}} \times \frac{4.5kg}{1} \times \frac{1\text{day}}{2\text{dose}} \text{ to } \frac{mg}{\text{dose}} = \frac{7mg}{kg/\text{day}} \times \frac{4.5kg}{1} \times \frac{1\text{day}}{2\text{dose}} \]

2c. Yes

3. \[ \frac{\text{gtts}}{\text{min}} = \frac{15\text{gtts}}{\text{mL}} \times \frac{150\text{mL}}{1.5\text{hr}} \times \frac{1\text{hr}}{60\text{min}} \]

4. \[ \frac{\text{gtts}}{\text{min}} = \frac{15\text{gtts}}{\text{mL}} \times \frac{200\text{mL}}{1\text{hr}} \times \frac{1\text{hr}}{60\text{min}} \]

5. \[ \frac{110\text{mL}}{hr} \] is the correct answer.
Rationale: \[ 15 \frac{mL}{hr} = \frac{250mL}{4gm} \times \frac{1gm}{1000mg} \times \frac{4mg}{min} \times \frac{60 min}{1hr} \] is the rate for the lidocaine.

Since the total amount of fluid the patient can get is \( 125 \frac{mL}{hr} \), Subtract

\[ 125 \frac{mL}{hr} - 15 \frac{ml}{hr} = 110 \frac{ml}{hr} \]

6. \[ 28 \frac{gtts}{min} = \frac{10gtts}{mL} \times \frac{1000mL}{6hr} \times \frac{1hr}{60 min} \]