Wiki Pages

Heading: **Drug Dose Calculation**

Solved Examples

(Refer and practice)

Module 1

Metric Conversion

1) 8 g = ? mg

   Sol. 8g X 1000mg
   _____
        1g

   Ans = 8000 mg

2) 8 g = ? mcg

   Sol. 8g X 1000mg X 1000mcg
   _____ _____
        1g   1mg

   Ans = 80,00,000 mcg

3) 2oz = ? ml

   Sol: 2oz X 2tbsp X 15ml
   _____ _____
        1oz   1 tbsp

   Ans = 30 ml

Module 2

Standard Method

O - ordered dose; A - available dose; V - volume

4) The physician has ordered 1,500mg of calcium carbonate tablet PO. Available form is 250mg/tab. How many tablets has to be given ?

   Sol:

$\underline{O} \times V$

A

$= \underline{1500 \text{ mg}} \times 1$ **Ans = 6 tablets**

250mg

5) The physician has ordered 500mg of drug. Available form is 0.25 g/tab. How will you administer?

Sol:

500mg x $\underline{1g}$ = 0.5mg   = $\underline{O}$ x V = $\underline{0.5 \text{ g}}$ x 1 **Ans = 2 tablets**

       1000mg   A   0.25g

6) The physician orders Injection Amikacin 5mg/Ib IM q 12 hour. Available form is 0.9g/2ml. How many ml has to be administered to a patient who weights 72.7 kg ?

Sol: 72.7 kg x $\underline{2.2 \text{ Ibs}}$ = 159.94 Ibs   =159.94 x 5 = 799.7 mg

              1kg

= 799.7 mg x $\underline{\quad 1g \quad}$ = 0.7997 g   = $\underline{O}$ x V = $\underline{0.7997g}$ x 2 = 1.777….

          1000mg   A   0.9g

Ans = 1.8 ml

Module 3

Intravenous drip calculation (drops/min)

7) The physician has ordered 1L of RL over 8 hours. The drop factor is 15 drops/ml. What will be the flow rate ?

Sol: $\underline{\text{Total vol. in ml}}$ x drop factor   = $\underline{1000\text{ml}}$ x 15 = 31.25 **Ans = 31 drops/min**

        Time in min   8 x 60

8) The physician has ordered 300ml of Ringer lactate (RL) over 6 hours. What will be the hourly rate ?

Sol: $\underline{\text{Total vol. in ml}}$ = $\underline{300 \text{ ml}}$ **Ans = 50 ml/hr**

       Number of hours   6 hours

9) The physician has ordered 2L of NS 1/2 over 48 hours. What will be the hourly rate ?

Sol: <u>Total vol. in ml</u>   = <u>2000ml</u>   = 41.66…. **Ans = 42 ml/hr**
       Number of hours   48 hours

10) The physician has ordered 1L of RL to infuse at 200ml/hr. Started at 8am when will the infusion complete?

     Sol: 1000ml x <u> 1 </u> = 5 hours = started at 8 am + 5 hours   **Ans = 13:00**
            200ml

Module 4

Unit based calculation

11) The consultant has ordered continuous heparin sodium by IV at 1000 units per hour. IV D5W 500ml with 20,000 units of heparin. How many ml/hr?

     Sol: <u>20,000 units</u> = 40 units/ ml = <u>1000 ml</u>   **Ans = 25 ml/hr**
           500ml   40 units

Module 5

Weight based calculation

12) The physician prescribed Dopamine drip at 10mcg/kg/min. The patients weight is 55kg. Dilution is 800mg /500ml. What will be the infusion rate?

     Sol: <u>O</u> x V
        A   = <u>10 mcg x 55 kg x 60</u>   x 500ml
                     800 mg
     <u>10 mcg x 55 kg x 60</u>   x 500ml = 20.62   **Ans = 21 ml/hr**
        8,00,000 mcg

Module 6

Ratio

13) How many ml of a 1:1000 solution of adrenaline is required to administer 0.5mg of adrenaline to a client with anaphylactic shock?

     Sol: 1 gm in 1000 ml

1 mg in 1000 ml $\underline{0.5 \times 1000}$

                                          1000

Therefore, 0.5 mg in 0.5 ml Ans = 0.5 ml

Percentage

14) The physician has ordered to administer 180mg of 2% drug. How much is to be given in ml?

    Sol: 1% is 1 gram in 100 ml solution

      $\underline{180 \text{ mg}}$ x 100 ml = $\underline{180 \text{ mg}}$ x 100 ml   **Ans** = 9 ml

      2 gram   2000mg