“Calculating Drip Rates”

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NREMTP
Micro & Macro Drip Sets

60 gtt/mL set
• 60 gtt/min = 1 cc

10 gtt/mL set
• 10 gtts/min = 1 cc

15 gtt/mL set
• 15 gtts/min = 1 cc
Fluid Volume Over Time

\[
\frac{\text{Volume} \times \text{Drip Factor}}{\text{Time in Minutes}} = \text{gtts/min}
\]

\[
\frac{500 \text{ cc} \times 10 \text{ gtt/mL}}{60 \text{ minutes}} = 83.3 \text{ gtts/min}
\]
Calculating mg/min

\[
\frac{\text{dose} \times \text{gtt factor}}{\text{Solution Concentration}} = \text{gtts/min}
\]

\[
\frac{2 \text{ mg} \times 60 \text{ gtt/mL}}{4 \text{ mg}} = 30 \text{ gtts/min}
\]

Using a 60 gtt set:
- 30 gtt/min = 30 cc/hr
Calculating mcg/kg/min

\[
\text{dose} \times \text{kg} \times 60 \text{ min} \over \text{solution concentration} = \text{cc/hr}
\]

\[
\frac{5 \text{ mcg/min} \times 75 \text{ kg} \times 60 \text{ min}}{1600 \text{ mcg/cc}} = 18.75 \text{ cc/hr}
\]

Using a 60 gtt set:
• 18.75 cc/hr = 18.75 gtts/min
Lidocaine Clock

• **Lidocaine is prepared by mixing:**
  - 2 Grams Lidocaine in 500 mL D5W
  - 1 Gram Lidocaine in 250 mL D5W

• **2000 mg / 500 mL = 4 mg/mL**

• **Using a 60 gtt set**
  - 60 gtts/min = 1 mL
  - 1 mL = 4 mg
Lidocaine Clock

4 mg

60

3 mg

45

15

2 mg

30

1 mg
Lidocaine Clock

• You are preparing to start a Lidocaine infusion on your patient. You would like to give the patient 2 mg/min. Using the clock method, how many cc/hr should you set your pump at?
Dopamine Clock

• Dopamine is prepared by mixing:
  – 800 mg Dopamine in 500 mL D5W
  – 400 mg Dopamine in 250 mL D5W

• $800 \text{ mg} / 500 \text{ mL} = 1.6 \text{ mg/mL}$

• Using a 60 gtt set
  – 60 gtts/min = 1 mL
  – 1 mL = 1600 mcg
Dopamine Clock

1600 mcg

1200 mcg

45

60

30

15

400 mcg

800 mcg
Dopamine Clock

• You are about to start a Dopamine drip on your patient. You would like to start this drip at 5 mcg/kg/min. Your patient weighs 100 kg. Using the clock method, how many cc/hr would you start your drip at?

5 mcg X 100 kg = 500 mcg/min
You are assuming care of a patient that is on a Dopamine drip currently running at 9 cc/hr. The patient’s weight is 84 kg. There is 400 mg of Dopamine in 250 mL of D5W. How many mcg/kg/min is this patient receiving?
Magic Number

• Works for any medication that is delivered in mcg/kg/min.

• Sol’n Concentration (mcg) divided by 60 divided by pt weight (kg) = Magic Number.

• Magic Number × cc/hr = mcg/kg/min
Magic Number

- **Sol’n Concentration**
  - \( \frac{400 \text{mg}}{250 \text{mL}} = 1.6 \text{ mg} \)
  - \( 1.6 \text{ mg} \times 1000 = 1600 \text{ mcg} \)

- \( \frac{1600 \text{ mcg}}{60 \text{ cc}} = 26.6 \)

- \( \frac{26.6}{84 \text{ kg}} = .31 \)

- \( .31 \times 9 \text{ cc/hr} = 2.84 \text{ mcg/kg/min} \)
ANY QUESTIONS?