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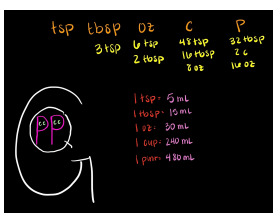
Med Math Practice

- gtt factor for pumps is always use 60 to determine the rate unless otherwise indicated in a question

- Concentration = amount of med per mL of fluid admin. IV
  - usually in mg/mL BUT can be in U, mcg, etc./mL

- Conversions!!!



- Dilution/Concentration
  - we need to know how much med is mixed in ONE mL of fluid (mg, U, mg PE

What we need to solve:
med reference and
med prescribed

Calculating concentration:
① ÷ the med by the fluid
② compare answer w/ the recommended concentration

- If there's too many mg/mL of fluid, contact pharmacist

① 350mg = med
25mL = fluid
= 350mg/25mL = 14mg/mL yes

② 13mg = med
10 mL = fluid
= 13mg/10mL = 1.3

Recommended Range
Consider:
- Age or age range of pt
- Dose
  - usually stated as "1 to 2 gm"
  - recommended dose for kids is usually based on the kids weight: "50 to 75 mg/kg"
- Frequency of dose
  - How often can the dose be admin.

③ Dose = 200 – 300 mg/kg/24 hrs in =ly ÷ doses q 4 - 6 hrs
pt weighs = 30 kg
6,000mg – 9000mg/24 =ly ÷ doses q 4 to 6 hr in 24 hr
6,000 ÷ 6 (4 dose) 9000 ÷ 6 (4 dose)
1000mg – 1500mg q 4 hr = B?

④ once a day dose*
pt = 20 kg, 5 y/o
D: 1,000mg q day
recommended dose = 50 – 75mg/kg of body weight in 24 hr as single dose or in =ly ÷ doses q 12 hr

DO NOT EXCEED total dose of 2 gm in 24 hrs

KHDbdum

- 50 x 20 = 1000 mg - 1 gm
- 75 x 20 = 1500 mg = 1.5 gm

yes, Dont overthink it!

⑤ BID

Pt. 20 kg, 6yo

prescribed: 700 mg BID = 1400

recommended = 60 - 76 mg/kg in 24 hr as single dose or = ½ ÷ doses q 12 hr

50 x 20 = 1000 mg

75 x 20 = 1500 mg

yes

6 40 mg/kg/24 hr — DO not exceed 2gm in 24hr

40 mg x 30 kg = 1200 mg - recommended equally divided

X 3 doses

- ~~400 mg q 8 hr = 1,200~~
- 200 mg q 4hr = 800
- 100 mg q 12 hr = 200
- 1,200 mg q 24 hr = 1,200 = not equally ÷

A = 200 mg q 4hr

1 gtt = 1 mL

gtt/min = mL/hr

IV drip = micro drip

$$\frac{\text{Vol to be infused} \times \text{gtt factor}}{\text{infusion time in min}} = \text{gtt/min}$$

★ micro drip = gtt/min = mL/Hr

⑦ $\frac{100\text{mL}}{1\text{hr}} \times \frac{20\text{mL}}{30\text{min}} \times \frac{1\text{gtt}}{1\text{mL}} = \frac{90000}{30} = 3{,}000\text{ gtt/hr}$

$\frac{60 \text{ml}}{1 \text{hr}} \times \frac{25 \text{mL}}{30 \text{min}} = \frac{1500}{30} = 50 \text{mL/Hr}$?

(8) 6.8kg

prescribed med = 275mg q 12 hr = 650 mg / 24hr

recommended = 80 - 90mg/kg/day ÷ q 12hr

620 - 685 = 24 mrs

200 - 292.6 = 12 mrs

Nurse will admin ~~275mL~~ of amoxicillin q12hr

(9) 15kg, 3 y/o

Admin 1.1g IV q12 hr

Dont exceed 2gm/24

~~60mg - 75mg/kg/24~~

~~0.750mg - 1,125mg/24hr~~

1.1 gram

~~25 mg - 27.5 mg / kg / 12 hr~~

0.325 mg - 412.5 mg / 12 hr

2.2 = exceeds

C

⑩ 116 kg

med: 640 mg, IVPB q 3 hr

label = 640 mg in 25 mL

$\frac{640}{25} = 25.6$ mL

A

r