OXYTOCIN CALCULATION WITH RATIO/PROPORTION

Ratio/Proportion Calculation method for oxytocin administration:

- Mix 10 units of oxytocin in 1000 mL NS.

- Start infusion at 4 milliunits/min.

- Increase by 1 to 2 milliunits/min every 15 minutes until uterine contractions are 2 to 3 minutes apart.

- Do not exceed 40 milliunits/min.

- Adjust primary IV of D_5W to deliver a total volume of 100 mL of fluid per hour.

Note: Calculations in this module, use only the ratio and proportion method. Refer to **Module 6: Methods of Calculation** to review alternate calculation methods.

In this example, you know that there are 10 units of oxytocin in 1000 mL of NS. To find the concentration of the solution (number of units/milliunits in one milliliter):

First, set up your ratio and proportion formula:

10 units : 1000 mL : : X units : 1 mL

Next, solve for "X":

1000 X = 10

X = 0.01 units/mL = 10 milliunits/mL

The concentration of the solution is 10 milliunits/mL.

Now let's move to Step 2, calculating the starting infusion rate of the titrated medication. Remember, electronic infusion devices deliver IV solutions in milliliters per hour. The following example uses the same medication order as the example for Step 1.

Example:

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- Adjust the primary IV of D_5W to deliver a total volume of 100 mL of fluid per hour.

The concentration of solution you calculated in Step 1 was 10 milliunits/mL. Based on this concentration of solution and the ordered infusion rate of 4 milliunits/min, use the following formula to find the starting infusion rate (milliliters per hour):

$$\frac{Concentration/minute}{concentration\ of\ solution} = volume/mL/min \times 60\ min/hr = volume/hr$$

$$\frac{4\text{ milliunits/min}}{10\text{ milliunits/mL}} = 0.4\text{ mL/min} \times 60\text{ min/hr} = 24\text{ mL/hr}$$

The starting infusion rate is 24 mL/hr.