IV Calculation Formulas

With orders for IV fluid administration, it is the nurse's responsibility to make sure the fluid will infuse at the prescribed rate. The drop factor is the number of drops in one mL of solution, and this will be printed on the IV tubing package. Macrodrip and microdrip refer to the diameter of the needle where the drop enters the drip chamber. The drop factor is needed in order to calculate the drops per minute. In general, a standard set is called a macrodrip, and it generally has a drip factor of 10, 12, 15, or 20 gtt/ml (drops per milliliter). Macrodrips are used for general adult IV administrations. A microdrip set is also called a minidrip, and it is 60 gtt/ml. Microdrips are usually used when more exact measurements are required, such as for pediatric patients or ICU patients. The calculation for flow rate is: total volume to infuse (in mL) x drop factor/ time in minutes = drops/minute (gtt/min). The calculation for infusion time is: total volume to infuse/milliliter per hour being infused = infusion time. The calculation for the number of milliliters per hour is: total volume in milliliters /time in hours = number of milliliters/hour.



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IV TUBING

Drop Factor
Drop Factory
The drop factor is the number of drops in one mL of solution, and this will be printed on the IV tubing package. Macrodrip and microdrip refer to the diameter of the needle where the drop enters the drip chamber. The drop factor is needed in order to calculate the drops per minute.

Macrodrip
Macaroni-drop
In general, a standard set is called a macrodrip, and it generally has a drip factor of 10, 12, 15, or 20 gtt/ml (drops per milliliter). Macrodrips are used for general adult IV administrations.

Microdrip
Microphone-drop
A microdrip set is also called a minidrip, and it is 60 gtt/ml. Microdrips are usually used when more exact measurements are required, such as for pediatric patients or ICU patients.

FLOW RATES

Total Volume to Infuse (mL) X Drop Factor/ Time in Minutes = Drops/Minute (gtt/min)
Total Volume-cup X Drop Factory / Minute-timer = Drops per Minute-timer
The formula for calculating the drops per minute (gtt/min) is the total volume to infuse (in mL),multiplied by the drop factor, divided by time in minutes, which equals the drops per minute (gtt/min).

INFUSION TIME

Total Volume to Infuse / mL per Hour Being Infused = Infusion Time
Total Volume-cup / Millionaire-liter-of-cola per Hourglass = In-fused-IV Clock
The formula for calculating the infusion time is the total volume to infuse divided by milliliters per hour being infused, which will give you the infusion time.

Number of mL/Hr

Total Volume in mL / Time in Hours = Number of mL per Hour
Total Volume-cup in Millionaire / Hourglass = # of Millionaire-liter-of-cola and Hourglass
The formula for calculating the number of milliliters per hour is the total volume in milliliters divided by the time (in hours), which will result in the number of milliliters per hour.

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