

Units and Conversion : Convert the following:

4g to mg

90mg to mcg

2mg to mcg

300mcg to mg

90mg to g

750 mls to L

2.4g to mg

1290grams to kg

Calculating doses:

Gentamicin 60mgs

(80mgs in 2 mls)

Gentamicin 140mgs

(80mgs/ 2 mls)

Benzyl Penicillin 400mg

(600mgs in 6 mls)

Cefotaxime 240mgs

(1000 mgs in 10mls)

Phenytoin 30 mgs

(250mgs in 5 mls)

Piperacillin/Tazobactam 980mg (4.5g in 20mls)

Calculate the volume
required to give the dose
for each medication.

Always refer to trust IV
guidelines for local dilu-
tion requirements

Dilution:

Vancomycin 250mg to 5mg/ml

Aciclovir 400mg to 5mg/ml

Gentamicin 760mg to a maximum of 10mg/ml

Erythromicin 240mg to 5mg/ml

Potassium Chloride 3mg to 0.05mg/ml

Calculate the following
dilutions required for safe
administration of the given
dose

Always refer to local guide-
lines for further diluting
medications

Maintenance fluids:

Maintenance requirements of a 4.2kg 2 month baby on full feeds

maintenance requirements in mls/hr of a boy weighing 18kgs

maintenance requirements in mls/hr of a girl weighing 36kgs

2/3 maintenance fluids in mls/hr of a girl weighing 23 kgs

Calculate the fluid
requirements for
each child.

Show your
calculations.

Infusion rates:

50mls over 20 minutes

250mls over 2 hours

90mls over 1 hour

200mls over 90 minutes

16mls over 15 minutes

Some medications require to be infused rather than given 'stat' (as a bolus). Calculate the rate for infusion to programme the infusion device.

Percentages:

How many grams of glucose are in 150mls of glucose 10% solution?

Explain why?

How many grams of sodium bicarbonate are in 200mls of 8.4% solution? Explain why?

You have been asked to give 20grams of Mannitol, you only have Mannitol 10% How much do you need to give?

Explain why?

You are giving 160mls of mannitol 10%, how many grams of mannitol is this?

Ratios:

Circle the stronger solution

adrenaline 1:10,000

adrenaline 1:1000

You have adrenaline 1:10,000 and you need to give 0.5mg how many mls will you give?

Which solution of adrenaline do you use for IM doses for anaphylaxis?

Which solution of adrenaline do you use for IV or IO in cardiac arrest?

Which solution of adrenaline do you use for nebulisation?

Which solution of adrenaline do you use for making up an adrenaline infusion?

Critical care calculations:

A child weighs 23kg and has a morphine infusion— 23mgs of morphine sulphate in a total of 50mls Calculate what dose is delivered in mcg/kg/hr if the infusion is running at 2mls/hr

A child weighs 32kg and has a morphine infusion— 32mgs Morphine Sulphate in a total of 50mls calculate what rate the infusion should run at to give 30 mcg/kg/hr

A child weighs 16kg and has an infusion of adrenaline—4mg in a total of 50mls (peripheral infusion) infusing at 5mls/hr, calculate the dose of adrenaline the child is receiving in mcg/kg/min

A child weighs 8kg and has an infusion of vecuronium—24mgs in 25mls total volume what rate would you need to run the infusion at to deliver 3mcg/kg/min for this patient?

A 5yr old child weighs 29kg and has an infusion of Aminophylline—500mg aminophylline in a total volume of 500mls calculate the rate of the infusion to deliver 1mg/kg/hr to the patient.

A child weighs 12 kg and has a midazolam infusion—50mg in a total volume of 50mls calculate the rate to run the infusion at in order to deliver 2 mcg/kg/min