# POTASSIUM CHLORIDE

## ACTION and USES

Potassium is one of the main intracellular cations which is essential for many physiological processes such as nerve conduction, muscle contraction and carbohydrate metabolism. It is used to treat or prevent hypokalaemia.

## DOSAGE

2 - 3mmol/kg/day for maintenance but for severe or resistant hypokalaemia 6mmol/kg/day

IV or orally. Use oral route whenever possible.

## ADMINISTRATION

- Normally by continuous intravenous infusion
- If on intravenous fluids then maintenance potassium can be given in parenteral nutrition or by using stock bag of 10% glucose/0.18% sodium chloride/0.15% potassium chloride.
- If the clinical situation requires then a more rapid intermittent infusion can be given, although the rate must not exceed 0.5mmol/kg/hour and must be administered by medical staff.

## RECONSTITUTION

A ready made solution of potassium chloride 40mmol in glucose 5% 500ml (0.08mmol/ml) is available.

If glucose 10% is required, potassium chloride is available as a 15% solution containing 2mmol/ml of potassium in a 10ml ampoule. Reconstitution is not necessary but 15% solution MUST BE DILUTED before administration. There is a 7.5% oral preparation which contains 1mmol/ml.

**Potassium chloride 4mmol in 50ml (0.08mmol/ml) in glucose 10%**

Add 2ml of potassium chloride 15% plus 48ml of glucose 10% (final volume 50ml) and mix well.

See explanation of formula for calculation of infusion rate.

This solution is hypertonic and must be administered through a central line or diluted at a Y connector with a compatible fluid.

**Other compatible diluent.**

Glucose 20%

## INCOMPATIBILITIES

Phenytoin, diazepam.

## STORAGE

Opened ampoules must be discarded immediately after opening. Punctured pre made bags may stored in the refirgerator and siscarded 24 hours after first opening.  Bags are stored in the intravenous infusion cupboard.  Unopened ampoules may be stored in the IV drug cupboard. Oral solution is stored in the fridge - once opened it has an expiry of one month from the time of opening.

**MONITORING**

Undiluted potassium chloride is LETHAL. Ensure that solution has been well mixed. Monitor serum electrolytes and cardiac rate. Observe for vein irritation and thrombophlebitis.

**Explanation of formula**

Step 1
(a)    Daily dose (mmol/day) = weight (kg) x Dose (mmol/kg/day)

(b)    Daily dose (mmol/hr) = weight (kg) x Dose (mmol/kg/day) *divided by* 24

Step 2
The concentration of the solution to be prepared is 4mmol potassium chloride in 50ml or 0.08mmol/ml.

Step 3
Infusion rate (ml/hr)    =    daily dose (mmol/hr) *divided by* concentration (mmol/ml)

=    daily dose (mmol/hr) *divided by* 0.08 (mmol/ml)

**Example**

An infant weighs 2.6kg and is prescribed potassium chloride 3mmol/kg/day to calculate the infusion rate use the following steps:

Step 1    (a)    Daily dose (mmol/day)    =    3 (mmol/kg/day) x 2.6kg

=    7.8 mmol/day

(b)    Daily dose (mmol/hr)    =    7.8 (mmol/day) *divided by* 24(hr)

=    0.33 mmol/hr (rounded up)

Step 2 Concentration of prepared solution is 4mmol/50ml or 0.08mmol/ml

Step 3 Infusion rate (ml/hr)    =    0.33 (mmol/hr) *divided by* 0.08 (mmol/ml)

=    4.1 ml/hr (rounded down)