

CALCIUM GLUCONATE

ACTIONS AND USES

Calcium increases myocardial contractility and ventricular excitability. It is used to correct low cardiac output and in the management of neonatal hypocalcaemia or tetany.

DOSAGE

- Neonatal tetany - 0.2ml/kg of a 10% solution IV.
- Hypocalcaemia
 - IV - 0.5mmol/kg/24hr.
1mmol = 4.55ml of calcium gluconate 10% injection.
 - ORAL - 0.25mmol/kg every six hours.
Refer to Neonatal Enteral Nutritional Supplements Guidelines.
Use oral route whenever possible

ADMINISTRATION

- Low cardiac output and neonatal tetany - by slow IV injection over 3 minutes by medical staff.
- Hypocalcaemia - by continuous infusion over 24hrs.

RECONSTITUTION

- Calcium gluconate is available as a 10% solution containing 0.22mmol/ml in a 10ml ampoule
- Reconstitution is not necessary but it should be diluted before administration by infusion.
- Oral preparation of calcium mixture 0.2mmol/ml in a 50ml bottle can be obtained from Pharmacy.
- If the oral solution is not available calcium gluconate 10% injection may be given orally.

Calcium gluconate 1mmol in 48ml (0.02mmol/ml)

Add 4.6ml of calcium gluconate 10% to 43.4ml of glucose 10% and shake well to mix
At this concentration, to give 0.5mmol/kg/24hrs the **rate = 1ml/kg/hr**, i.e. 1 x body wt/hr

Calcium gluconate 2mmol in 48ml (0.04mmol/ml) **Double Strength**

Add 9.1ml of calcium gluconate 10% to 38.9ml glucose 10% and shake well to mix
At this concentration, to give 0.5mmol/kg/24hrs the rate = **0.5ml/kg/hr**, i.e. 0.5 x Body wt/hr

Other compatible diluents.

glucose 20%, Sodium chloride 0.9%

Incompatibilities

Do not mix or infuse with sodium bicarbonate, TPN or phosphates.

STORAGE

- Opened ampoules should be discarded immediately after opening
- Do not store diluted solutions.
- Unopened ampoules are stored in the IV drug cupboard
- Diluted Calcium Sandoz syrup 0.2mmol/ml is stored in the fridge and has an expiry of one week.

MONITORING

- Monitor serum electrolytes and heart rate.
- Too rapid administration can cause bradycardia and cardiac arrest.
- Observe for vein irritation and thrombophlebitis.
- Extravasation can result in skin necrosis and calcium deposits.
- Give with caution if patient is on digoxin as it can predispose digoxin toxicity.
- Hypomagnesaemia should be corrected if present.
- Assess gastric tolerance when given orally and allow a minimum of 3 hours between administration of oral phosphate