

calcium gluconate

1gram/10mL (0.22mmol/mL) injection elemental calcium

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Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

This is a High Risk Medication ⚠

An overdose can be rapidly fatal.

For information on oral calcium, see calcium carbonate

Dose and Indications

Doses should be expressed in millimole (mmol) of ELEMENTAL calcium. Each ampoule contains 0.22mmol/mL of elemental calcium equiv. to 100mg/mL of calcium GLUCONATE.

Correcting Acute Symptomatic Hypocalcaemia

Intravenous

0.22mmol/kg to 0.44mmol/kg elemental calcium as a single dose

Maintenance Treatment for Hypocalcaemia

Use oral treatment with calcium carbonate where possible as it is cheaper and more convenient

Intravenous

0.11 mmol/kg elemental calcium per dose, 4 times a day

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South Australian Maternal & Neonatal Clinical Network
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Exchange Transfusion**Intravenous**

0.11 to 0.22mmol/kg elemental calcium may be used if hypocalcaemia is documented

Severe Hyperkalaemia with electrocardiogram (ECG) changes**Intravenous**

0.11mmol/kg of calcium gluconate 10% per dose

These are initial doses only and should be adjusted according to calcium and phosphate levels.

Preparation and Administration**Intravenous**

The intravenous preparation is formulated as calcium gluconate (equivalent to 0.22mmol elemental calcium in 1mL).

Dilute 5mL of the 0.22mmol/mL elemental calcium solution with 5mL of compatible fluid (to a total of 10mL). The resulting solution contains 0.11mmol/mL.

Dose	0.11mmol	0.22mmol	0.33mmol	0.44mmol	0.55mmol	0.66mmol
Volume	1mL	2mL	3mL	4mL	5mL	6mL

Where possible infuse via a central line over an hour if circumstances allow.

For rapid administration, push dose at a rate of 0.23mmol/minute to reduce the risk of phlebitis/extravasation.

Avoid intra-arterial administration.

Compatible Fluids

Glucose 5%, glucose 10%, sodium chloride 0.9%

Adverse Effects**Infrequent**

Hypercalcaemia, alkalosis, hypophosphataemia

Rare

Renal calculi

Side effects specifically associated with intravenous administration include calcium deposition (extravasation), skin necrosis (extravasation), and irritation.

Vasodilation, bradycardia, hypotension and arrhythmias are related to rapid intravenous administration.

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Monitoring

- > Cardiac monitoring during administration. The electrocardiogram (ECG) should be monitored for evidence of hypercalcaemia, bradycardia and other arrhythmias (stop infusion if heart rate is less than 100 beats per minute).

Practice Points

- > Intramuscular magnesium sulphate may be preferable for the treatment of transient late neonatal hypocalcaemia
- > Calcium gluconate should not be added to Parenteral Nutrition Solution as it may cause precipitation of calcium phosphate, which may not be visible (refer to your pharmacy department for more information)
- > Do not mix with any other drugs. It will precipitate out of solution when mixed with many different medications
- > Improves ECG manifestations of hyperkalaemia without changing plasma potassium level.
- > Rapid intravenous injection may cause sinus bradycardia
- > Use with CAUTION in patients with renal or cardiac impairment
- > Not recommended to be given by intramuscular or subcutaneous routes as tissue necrosis may occur
- > Avoid extravasation by administering slowly into a central vein
- > Calcium gluconate interacts with a range of medications; please check with your local pharmacy department for specific advice

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	November 2012	current	Original version

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