CALCIUM

PRESENTATION:	Ampoules containing **calcium gluconate** 10% w/v: Equivalent to 2.2mmol of calcium per 10ml. [NB: slight variations can exist between different brands: 2.23mmol per 10ml or 2.25mmol per 10ml] **There is significantly more calcium in 10ml ampoules of calcium chloride (10mmols) when compared to calcium gluconate (2.23mmol).** Calcium chloride may cause massive tissue necrosis on extravasation. Calcium chloride ampoules will be available **only** for CVVHD with calcium citrate anti-coagulation. Please refer to CVVHD protocol.
INDICATION:	Correction of acute hypocalcaemia. **Emergency situations**: Cardiac arrest, hyperkalaemia, shock states, haemorrhage/massive transfusion, calcium channel blocker overdose. **Severe hyperkalaemia**: use 30ml of calcium gluconate 10% to achieve the recommended calcium dose of 6.8mmol, given over 10minutes.
REFERENCE RANGES:	Ionised Calcium: 1.18-1.30mmol/L NB: Lab calcium results are now corrected for albumin level as Adjusted Calcium. Ionised Calcium may be more relevant especially in liver disease/transplant or massive transfusion. Asymptomatic low calcium levels usually require no treatment, **rarely requires replaced if ionised calcium is >1mmol/L** – discuss with consultant.
DOSE AND ADMINISTRATION:	Peripheral or central administration (**preferred route via CVC**). **Infusion**: 4.5mmol of **calcium gluconate** 10% in 100ml glucose 5% or sodium chloride 0.9% over at least 30 minutes. For 4.5mmol: dilute 20mls of calcium gluconate 10% in 100ml glucose 5% or sodium chloride 0.9%. **Bolus:** In an emergency, undiluted 4.5mmol may be given over 10 minutes into a large vein. Doses may need to be repeated as required or followed by a continuous infusion.
STABILITY:	Physically and chemically stable for 24hours at room temperature.
ADDITIONAL INFORMATION:	For calcium channel blocker poisoning – follow TOXBASE advice. Undiluted Calcium gluconate may cause venous irritation and tissue damage in cases of extravasation.

References:
1) Calcium Gluconate Injection, Summary of Product Characteristics, Hameln Pharma Ltd, Last updated June 2023. Accessed 24th July 2023.

2) Calcium Gluconate, UKCPA Minimum Infusion Volumes, 4th Edition, December 2012. Accessed 24th July 2023.

3) Calcium Gluconate, Medusa monographs, Last updated May 2023. Accessed 24th July 2023.

4) Potential risk of underdosing with calcium gluconate in severe hyperkalaemia, National Patient Safety Alert 27/6/23 MHRA. Reference No.: NatPSA/2023/007/MHRA

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