

Frimley Park Hospital Acute Hypercalcaemia Guidelines

Originators:	Dr J Tringham, Consultant Endocrinologist Dr I Kurera Consultant Endocrinologist
Version:	2
Version Implementation Date:	June 2017, updated October 2022
Next Review Date:	October 2025
Ratified at:	Endocrine and Diabetes M+M May 2017 and October 2022.
Date of Frimley Health Area Prescribing Committee:	FHAPC Chair Approved June 2017
This guideline has been registered with the trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date	

Severity of hypercalcaemia

- <3.0 mmol/l: often asymptomatic and does not usually require urgent correction.
- 3.0-3.5 mmol/l: may be well tolerated if it has risen slowly, but may be symptomatic and prompt treatment is usually required.
- > 3.5 mmol/l: requires urgent correction due to risk of dysrhythmia and coma.

Indications for urgent treatment:

- Adjusted Calcium > 3.5mmol/L
- Clouding of consciousness or confusion
- Hypotension
- Severe abdominal pain
- Severe dehydration with pre-renal failure

Investigations

U+E, calcium, phosphate, PTH, Myeloma screen and Vitamin D

If PTH low then also measure: PSA, LDH, ESR, FBC, LFTs, TFTs and cortisol.

Treatment

Rehydration

- Aim around 4 litres of 0.9% sodium chloride in 24 hours
- Adjust requirements depending on degree of dehydration, JVP, urine output and cardiac function
- Insert urinary catheter if any doubt about urine output
- Loop diuretics rarely used and only if fluid overload develops; not effective for reducing serum calcium
- May need to consider dialysis if severe renal failure

If further treatment required after intravenous saline, consider iv bisphosphonates.

Either : **Zoledronic Acid** 4 mg over 15 minutes

Or: **Sodium Pamidronate** 60mg iv infusion

- Add to 500ml sodium chloride 0.9% and infuse over 4 hours
- Ensure PTH has been requested prior to administration
- Decrease dose to 30mg if eGFR < 30ml/min
- Increase dose to 90mg if myeloma or metastatic breast cancer

Calcium levels begin to fall 48 hours after infusion and usually reach the lowest level at 5 days. Repeat bisphosphonate doses not usually useful within 5 days.

Additional treatment options

- Corticosteroids (Prednisolone - 40mg daily): lymphoma, other granulomatous diseases or 25OHD poisoning. Usually effective in 2–4days
- Calcimimetics (Cinacalcet) and Calcitonin can be considered after discussion with the Endocrinologist.
- Acute Haemodialysis can be considered for resistant Hypercalcaemia.
- Parathyroidectomy (can be considered in primary hyperparathyroidism)

Calcium may not return to normal levels unless underlying disease is treated

Reference: Society for Endocrinology Endocrine Emergency Guidance: Emergency Management of acute hypercalcaemia in adult practice. www.endocrineconnections.org G9-G11. 2016