

HYPERCALCAEMIA IN MALIGNANCY GUIDELINES

KEY POINTS

- Tumour induced hypercalcaemia usually indicates widespread disease and a poor prognosis.
- Occurs most frequently in patients with myeloma, lung, breast, squamous cell and renal cancers.
- Always check a serum corrected calcium for patients with unexplained vomiting, thirst, polyuria or confusion, pain.
- Once hypercalcaemia has occurred, it may recur. Patients should be aware of symptoms and have serum **corrected calcium** monitored.
- For palliative patients it may be important to give bisphosphonates earlier in management pathway i.e. before all intravenous fluids have been administered – since cause of hypercalcaemia is known and rapid symptom control is key.

RECOGNITION

- Thirst, polyuria, polydipsia • Nausea, vomiting, constipation • Tiredness and lethargy, muscle weakness • Confusion, drowsiness, delirium and eventually coma • Worsening pain or pain responding poorly to treatment

Check calcium + urea & electrolytes, eGFR, albumin

MANAGEMENT (Corrected Calcium 2.6-4.0)

Corrected calcium = measured calcium + (40 - serum albumin) X 0.02

1. Admit to hospital/hospice unless it is agreed that this is inappropriate
2. Stop thiazide diuretics – may increase calcium levels
3. Consider stopping drugs that could exacerbate renal impairment e.g. NSAIDS, ACEI
4. Rehydrate with appropriate intravenous fluid, 1L over 4 to 6 hours. Aim for 1 to 3 litres in 24hours. Caution if comorbidities increase the risk of fluid overload.
4. Give IV bisphosphonate
5. Manage associated symptoms; laxatives for constipation, anti-emetics (metoclopramide/haloperidol) for nausea and vomiting

(If asymptomatic – consider outpatient management if CCa < 3mmol/L).

BISPHOSPHONATES

All Tumour Types

Zoledronic acid 4mg in 100ml sodium chloride 0.9% over 15 minutes. Reduce dose if eGFR <60ml/min (see below).

Baseline Creatinine Clearance	Zoledronic Acid Dose
>60mls/min	4mg
50-59mls/min	3.5mg
40-49mls/min	3.3mg
30-39mls/min	3mg

If eGFR <30ml/min

Disodium pamidronate 90mg in 500ml sodium chloride 0.9% by IV infusion over 4.5hours

MONITORING

- Monitor Calcium and renal function. Maintain good hydration. Recheck calcium after 3-5 days If Calcium remains high after 7 days– consider repeat bisphosphonate infusion – seek advice.
- A single bisphosphonate infusion will usually maintain normocalcaemia for about 3 weeks.
- **Infusions can be repeated every 3 to 4 weeks depending on serum calcium and disease state**
- There is no evidence that oral bisphosphonates prevent further episodes of hypercalcaemia.
- Resistant/refractory hypercalcaemia may be an end of life event. If so treat symptoms appropriately but IV Bisphosphonates **may not be appropriate for a dying patient.**