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 24 hours. 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).

<table>
<thead>
<tr>
<th>Baseline Creatinine Clearance</th>
<th>Zoledronic Acid Dose</th>
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<tbody>
<tr>
<td>&gt;60mls/min</td>
<td>4mg</td>
</tr>
<tr>
<td>50-59mls/min</td>
<td>3.5mg</td>
</tr>
<tr>
<td>40-49mls/min</td>
<td>3.3mg</td>
</tr>
<tr>
<td>30-39mls/min</td>
<td>3mg</td>
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</tbody>
</table>

If eGFR <30ml/min
Disodium pamidronate 90mg in 500ml sodium chloride 0.9% by IV infusion over 4.5 hours

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.