



## FLOW CHART FOR MANAGEMENT OF HYPERCALCAEMIA OF MALIGNANCY

### FEBRUARY 2008

#### Main symptoms of Hypercalcaemia

Polyuria	Fatigue
Polydipsia	Confusion
Anorexia	Lethargy
Nausea/Vomiting	Seizures
Constipation	Arrhythmias
Abdominal pain	Coma

Corrected calcium is >2.60mmol/l

If corrected calcium 2.60-2.69mmol/l & patient asymptomatic, recheck & only treat if rising. Corrected calcium >4mmol/l is life-threatening & requires URGENT treatment.

Is patient known to have active malignancy?

If NO, check FBC, ESR, U&E, LFT, TFT, PTH, cortisol, vit D & myeloma screen, start IVI & seek advice from Endocrinologist

If CrCl <30ml/min (GFR<10), do not give bisphosphonate  
**SEEK ADVICE**

If YES, is this the first episode of hypercalcaemia?

Review need for any drugs which may affect renal blood flow e.g NSAIDs, diuretics, ACEI's, ARB's

If first episode of hypercalcaemia, give 1-3 litres of 0.9% saline IV, followed by pamidronate, dose according to corrected calcium

If 2<sup>nd</sup> or subsequent episode of hypercalcaemia, give 1-3 litres of 0.9% saline IV, followed by zoledronic acid 4mg IV in 100ml 0.9% saline

Corrected calcium (mmol/l)	Pamidronate dose
Up to 3.0	30mg
3.0 – 3.5	60mg
Above 3.5	90mg

If patient needs pamidronate to treat bone pain, give 90mg, irrespective of corrected calcium level

Recheck U&E & calcium after 5-7 days (sooner if need to monitor fluid replacement)

**DO NOT GIVE FURTHER BISPHOSPHONATE UNTIL AT LEAST 5 DAYS AFTER PREVIOUS DOSE**  
- maximum effect not seen yet  
- risk of hypocalcaemia if further bisphosphonate given too soon

If calcium level still high, consider further dose of bisphosphonate (zoledronic acid 4mg IV) unless calcium level reducing & symptoms improving

Recheck calcium weekly  
If calcium levels high & 3 weeks or more since last dose of bisphosphonate, give zoledronic acid 4mg IV;  
if less than 3 weeks since last dose of bisphosphonate, **SEEK ADVICE**

#### FOR FURTHER INFORMATION

SEE MORE DETAILED GUIDELINES FOR MANAGEMENT OF HYPERCALCAEMIA ON INTRANET;  
IF IN DOUBT, SEEK ADVICE FROM PHARMACY, ENDOCRINOLOGIST OR PALLIATIVE CARE TEAM