



Kent and Medway Cancer Collaborative

Guidance Document

Bisphosphonate guidelines incorporating prescribing in renal impairment

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Before treatment

1) Renal, liver and bone profile **MUST** be reviewed at baseline and prior to the administration of **EACH** dose of bisphosphonate

2) Normal reference ranges

Trust	Corrected calcium mmol/l	Serum creatinine umol/l	Urea mmol/l	Phosphate mmol/l	Magnesium mmol/l
MTW	2.2 -2.6	44-80	2.5 - 7	0.8 - 1.45	0.7 - 1.07
Medway	2.0-2.6	36-107	1.8-7.5	0.81-1.45	0.7-0.91
East Kent	2.2-2.6	49-90	2.5-7.8	0.8-1.5	0.7-1.0
Dartford & Gravesham	2.1-2.6	62-124	2.5-7.8	0.81-1.45	0.7-1.0

Guidelines for Dental Procedures and patients presenting with ear symptoms, or thigh, hip or groin pain

- A dental examination with appropriate preventive dentistry and an individual benefit-risk assessment is recommended prior to treatment with bisphosphonates
- Patients should be encouraged to have regular dental check-ups whilst on treatment
- If patients require **invasive** dental procedures (ie: dental extraction, surgical dental extraction or root planing /deep scaling) then the patient is required, where possible, to stop treatment 8 weeks prior, and recommence treatment when there is mucosal healing as assessed by a dental professional (there is no need to wait 8 weeks post procedure if full mucosalisation has occurred). NB Dental fillings (drilling), normal hygiene appointments, the provision of dentures and routine root canal therapy are not invasive dental procedures and therefore there is no indication to stop bisphosphonate therapy for these.
- Patients who develop osteonecrosis of the jaw should be referred to a maxillofacial surgeon.
- Caution is advised when zoledronic acid is administered with anti-angiogenic drugs (eg bevacizumab, sunitinib, pazopanib), as an increase in the incidence of ONJ has been observed in patients treated concomitantly with these medicinal products
- The possibility of osteonecrosis of the external auditory canal should be considered in patients receiving bisphosphonates who present with ear symptoms including chronic ear infections.
- During bisphosphonate treatment patients should be advised to report any thigh, hip or groin pain and any patient presenting with such symptoms should be evaluated for an incomplete femur fracture.

At start of treatment

3) Prescribe initial bisphosphonate dose based on baseline creatinine clearance

Baseline creatinine clearance (ml/min)	Zoledronic Acid dose	Pamidronate dose	Oral Ibandronate Dose / frequency
>60	4.0mg	90mg	50mg / daily
50 - 60	3.5mg	90mg	50mg / daily
40 - 49	3.3mg	90mg	50mg on alternate days
30 - 39	3.0mg	90mg	50mg on alternate days
< 30	Not recommended per SPC- consider Ibandronic Acid	Discuss with consultant. Reduce rate of administration to 20mg/hr in impaired renal function. (90mg / 270 mins)	50mg / weekly

During treatment

4) Following initiation of therapy, review serum creatinine (SrCr) prior to each dose.

- Modify the dose of bisphosphonate as follows:

Zoledronic acid¹

Baseline serum creatinine	WITHHOLD TREATMENT IF CREATININE INCREASES BY	INFORM CONSULTANT IF CREATININE INCREASES BY
<124µmol/L	44µmol/L	44µmol/L
≥124µmol/L	88µmol/L	44µmol/L

- Following a dose delay, repeat bloods after 4 weeks and recommence when SrCr is below or within + 10% of baseline¹
- Above table is only for use with Zoledronic Acid. If Pamidronate is used discuss any significant rise in serum creatinine with consultant.

Management of hypocalcaemia

Patients with corrected serum calcium below 2.2mmol/l should be discussed with the consultant, to consider extra calcium supplementation.

Cycle number	1	2	3	4	5	6	7	8
Date								
Serum Creatinine (SrCr) umol/l								
Creatinine Clearance (CrCL) ml/min								
Corrected Calcium mmol/l								
Phosphate IU/l								
Magnesium mmol/l								

Notes: For calculation of creatinine clearance refer to the KOC intranet Cockcroft Gault calculator.

References 1. Zometa® Zoledronic Acid (accessed online 01/05/2018) Summary of Product Characteristics 2. Pamidronate (accessed online 01/05/2018) Summary of Product Characteristics 3. ZICE Protocol (Zoledronate versus ibandronate Comparative Evaluation) (07/2007) 4. Bondronat® Ibandronate Oral (accessed online 01/05/2018) Summary of Product Characteristics.

Document Administration

Document Title	Bisphosphonate guidelines incorporating prescribing in renal impairment
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Revision History			
Date of revision	New Version Number	Nature of Revision	Confirmation of Accuracy by
May 2018	1.3	Updated SPC information & transferred into new KMCC format. Additional information re. dental procedure at the advice of Nic Goodger	KMCC Chemo group – circulated via email May 18
June 2018	2	Published following consultation with KMCC Chemotherapy Groups (circulated via email)	