

Guidance letter to all dental and medical practitioners regarding Bisphosphonate-Related OsteoNecrosis of the Jaws (BRONJ)

Evidence is emerging that patients taking **bisphosphonate** drugs (see listing in Appendix 1) are at risk of developing osteonecrosis of the jaws, sometimes occurring spontaneously, but more usually following dental extractions or oral bone surgery. Bisphosphonates are principally used in the treatment of osteoporosis, Paget's disease, multiple myeloma, bony metastatic lesions and hypercalcaemia of malignancy.

The incidence of BRONJ in patients taking oral bisphosphonates for osteoporosis has been estimated at 1 in 10,000 to 1 in 100,000. Patients taking high dose IV bisphosphonates for cancer are much more at risk (estimated at 1 in 10 to 1 in 100).

Other factors associated with increased risk include dental infection, denture trauma, steroid therapy, diabetes, coagulopathies, chemotherapy, radiotherapy and alcohol and tobacco misuse. The risk increases with the length of time patients have been taking the drugs, with 3 years seen as a threshold point for an increased likelihood of adverse effects.

The following guidelines are suggested, and are likely to be revised as further evidence is published or when a national guideline is produced.

**A. For all patients:**

Dental practitioners should ask about current or past use of bisphosphonates when taking a drug history.

**B. Prior to commencement of Bisphosphonate therapy:**

Prescribers should advise patients regarding the condition and the risk factors. A patient information leaflet entitled "Dental Health Advice for Haematology Patients receiving Bisphosphonate Therapy" is available on the NHS Tayside Intranet.

Patients should be asked to see their dental practitioner for assessment and treatment. If the patient is not registered, they should contact the NHS Linkline at Kings Cross on 01382 596982 for information (*NHS Tayside Only*).

All required dental treatment should be completed as soon as possible, prioritising extractions and any sub-gingival scaling. Treatment strategies and preventive advice should be designed to minimise the risk of extractions in the future. Poorly-fitting dentures should be replaced.

**C. During therapy:**

Patients need regular dental care and careful attention to oral hygiene and diet.

Avoid extractions if at all possible. With teeth which would normally be considered unrestorable, consider crown amputation leaving endodontically treated roots. Take care to avoid denture-related trauma, especially in relation to the mylohyoid ridge or bony tori.

**D. If extractions have to be done:**

If extractions can be planned ahead, consult with the prescriber of the bisphosphonate as to whether a drug “holiday” would be beneficial. This would normally only be considered for patients with established BRONJ where it is difficult to control symptoms, in high risk patients (those taking the IV drugs) or those who have had previous BRONJ who now require further dental extractions.

Fully advise patients of the risks, backed up with written information, and obtain their consent to proceed with extractions.

Extractions should be done in stages, allowing a 2-month disease-free follow-up period before proceeding to extractions in other areas of the mouth. Extractions would normally be done in primary care, but if difficulty is anticipated, referral to a specialist Oral Surgeon would be appropriate.

All patients to rinse with Chlorhexidine mouthwash twice daily during the week before extractions are done.

There is no evidence that pre- and post-operative antibiotics are effective in preventing BRONJ, although some experts have recommended their use based on a hierarchy of risk.

Immediately before the extractions, the area should be irrigated/wiped with chlorhexidine. Use atraumatic technique, and avoid raising flaps. Primary soft tissue closure should be achieved wherever possible.

Post-operatively patients should rinse with Chlorhexidine twice daily for 2 months, and should be reviewed regularly to monitor healing.

**E. The typical presenting features of BRONJ are:**

Delayed healing, pain, swelling, loosening of teeth, exposed bone, paraesthesia, purulent discharge via intra-or extra-oral sinus.

If any of these develops, early referral to an Oral Surgery or OMFS unit is advised.

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## Appendix 1

**Bisphosphonate drugs**

Drug name	Trade name(s)	Route of administration	Nitrogen containing
Alendronic acid	( <i>Fosamax</i> )	Oral	yes
Disodium Etidronate	( <i>Didronel</i> )	Oral	no
Disodium pamidronate	( <i>Aredia</i> )	IV	yes
Ibandronic acid	( <i>Bondronat, Bonviva</i> )	Oral/IV	yes
Risedronate sodium	( <i>Actonel</i> )	Oral	yes
Sodium Clodronate	( <i>Bonefos, Loron</i> )	Oral/IV	no
Tiludronic acid	( <i>Skelid</i> )	Oral	no
Zoledronic acid	( <i>Aclasta, Zometa</i> )	IV	yes

Nitrogen-containing preparations are more potent and are contained longer in bone