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bisphosphonates & osteonecrosis OF THE JAWS

OUR CURRENT PRACTICE FOR REMOVAL OF TEETH IN PATIENTS WHO ARE TAKING ORAL ALENDRONATE (FOSAMAX)

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Over the last three years there have been a number of papers linking the aminobisphosphonates with osteonecrosis of the jaw (ONJ).

While 95 per cent of these reports relate to high dose intravenous (IV) aminobisphosphonates (zoledronic acid [Zometa; Novartis Pharmaceuticals, East Hanover, NJ] and pamidronate [Aredia; Novartis Pharmaceuticals, East Hanover, NJ]) used in oncology patients, there have also been a few reports relating to the oral aminobisphosphonate, alendronate (Fosamax; Merck Co, West Point PA) (1,2,5,6,7). As a result of these reports, the manufacturer of zoledronic acid and pamidronate, Novartis, has issued guidelines for managing patients dentally (3). Included in these guidelines is the recommendation

- that teeth should be managed non-surgically if the patient has already started IV aminobisphosphonate therapy. This leaves the question unanswered as to how dental problems should be dealt with in patients taking low-dose oral bisphosphonates for osteoporosis.

- Alendronate has been prescribed for the last ten years for the very effective management of osteoporosis and Paget's Disease. Since this time, up to 150 possible cases of ONJ have been reported worldwide with over 20 million patient years' exposure. In New Zealand there are two unreported anecdotal cases of possible ONJ associated with 25,000 people currently taking the drug. The incidence for ONJ associated with alendronate is presently low and this should be kept in perspective. Following further

review of the situation, the clinicians of the Oral Health Unit at Greenlane Clinical Centre, have now agreed to proceed with caution to extract teeth for patients on alendronate while following the listed principles and practices.

This is our current practice based on the most contemporary information at this point in time. It is still too early to establish formal protocols and we are aware that other units are following different practices. It is also acknowledged that our practice will change on receipt of new information. While it is envisaged that general dentists may cautiously follow our current practice, consideration should be given to referral if additional risk factors are present or the extraction is likely to be difficult.

We proceed cautiously with extractions taking the following factors into consideration:

- Encourage regular dental checks. Practise preventive dentistry to reduce infection/pathology and the need for extractions.
- Document reason for extraction (written /radiographic).
- Give good balanced information about the risks and benefits of extraction and obtain informed consent.
- Before extraction, minimise local infection and plaque accumulation by prophylaxis and chlorhexidine mouth rinses.
- Remove teeth as atraumatically as possible.
- Remove grossly infected teeth as required. Peri-apical pathoses, sinus tracks, purulent periodontal pockets, severe periodontitis, active abscesses are risk indicators and may cause ONJ by themselves and should be dealt with appropriately (4). ONJ may already be present and extractions simply make it apparent.
- If multiple teeth need extraction: initially remove one tooth, wait two months to allow healing, if no problems then proceed cautiously with other extractions (4).
- Peri/post-extraction antibiotics for significant infection or other clinical indicator.
- Use post-extraction chlorhexidine mouthrinses until healed (4).
- Follow-up review to confirm healing, at one week and then one month and thereafter as required.
- Avoid immediate dentures if they are likely to cause trauma.
- Be prepared to modify your practice as

new evidence becomes available.

Additional risk factors for ONJ in patients taking alendronate include:

- The duration of therapy and the cumulative dose; the drug's long half-life (up to 12 years).
- The presence of medical co-morbidities; overall systemic health; diabetes mellitus; degree of immunosuppression; chemotherapeutic agents; corticosteroids.
- The presence of pre-existing dental disease; invasive dental procedures; denture trauma, prominent structures eg. tori, mylohyoid ridge.

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REFERENCES

1. Cheng A, Mavrokokki A, Carter G, Stein B, Fazzalari N, Wilson D and Goss A (2005). The dental implications of bisphosphonates and bone disease. *Aust Dent J*; 50 Suppl 2:S4-S13.
2. Farrugia MC, Summerlin D, Krowiak E, Huntley T, Freeman S, Borrowdale R, Tomich C. (2006) Osteonecrosis of the Mandible and Maxilla Associated with the use of New Generation Bisphosphonates. *The Laryngoscope* 116(1), 115-120.
3. Hay KD, Bishop PA (2006). Association of osteonecrosis of the jaws and bisphosphonate pharmacotherapy: Dental implications. *NZDJ* Vol. 102 (1) 4-10.
4. Hellstein JW and Marek CL (2006). Bisphosphonate Induced Osteochemonecrosis of the Jaws: An Once of Prevention May be Worth a Pound of Cure. *Spec Care Dentist*. 26 (1): 8-12.
5. Migliorati, C, Casiglia J, Epstein J, Jacobsen P, Seigel M, Woo S. (2005) Managing the care of patients with bisphosphonate- associated osteonecrosis. An American Academy of Oral Medicine position paper. *JADA* 136: 1658-1668.
6. Ruggiero SL, Mehrotra B, Rosenberg TJ, Engroff SL (2004). Osteonecrosis of the jaws associated with the use of bisphosphonates: a review of 63 cases. *J Oral Maxillofac Surg*. 62: 527-534.
7. Woo S, Hellstein J, Kalmar J. (2006) Systematic Review: Bisphosphonates and Osteonecrosis of the Jaws. *Ann Internal Med* 144(10) 753-761.