

# Managing the Care of Patients with Bisphosphonate-Associated Osteonecrosis

An American Academy of Oral Medicine Position Paper

**B**isphosphonates comprise a class of drugs that act primarily by inhibiting osteoclastic activity, thereby reducing bone remodeling and turnover. These drugs are administered orally or intravenously, vary in potency, and are commonly prescribed for the treatment of osteoporosis (e.g. post-menopausal women), certain cancers that give rise to metastatic skeletal lesions and resorptive defects (e.g. breast, lung, prostate and multiple myeloma), and Paget's disease of bone.

In 2003, articles began to appear in the medical and dental literature, describing a serious and previously unrecognized oral complication of cancer treatment: the exposure of necrotic maxillary and/or mandibular bone in patients receiving intravenous bisphosphonates (i.e. pamidronate – Aredia, zoledronate – Zometa). Perhaps more troubling, a small number of similar cases were subsequently reported in patients taking oral bisphosphonates (i.e. alendronate – Fosamax) for osteoporosis.

Thus far, all reported cases of bisphosphonate-associated osteonecrosis (BON) have involved the upper and lower jaws; hence, its importance to dentistry. The complication usually follows dental surgery, but often occurs spontaneously, and is resistant to all treatment modalities, including debridement, sequestrectomy, resection and hyperbaric oxygen therapy. Management is limited to controlling pain and progression of the condition, and at present, afflicted patients must resign themselves to living with some exposed bone. Therefore, the treatment strategy of paramount importance is prevention.

The advisory board to PEAK offers the following timely article on this topic: “Managing the Care of Patients with Bisphosphonate-Associated Osteonecrosis: An American Academy of Oral Medicine Position Paper” from the December

2005 issue of the *Journal of the American Dental Association*.

This article reviews the pathobiological mechanism of BON, its signs and symptoms, and the most current recommendations for managing patients receiving bisphosphonate drugs. Additionally, the article stresses the key role of the dentist in the prevention of BON, while ominously suggesting that there are many questions regarding the future implications for the large number of patients already taking oral bisphosphonates for osteoporosis.

Key points to consider:

- At present, all existing treatment modalities have failed to yield consistent resolution and healing of BON. Therefore, prevention of this complication is of paramount importance.
- A complete medical history should be taken of every patient, which should identify patients already taking or about to receive these drugs.
- Anecdotal evidence suggests that the incidence of BON is low during the first six months from the initiation of bisphosphonate therapy. Therefore, all patients about to receive these drugs, especially in intravenous form, should be seen by a dentist for a comprehensive examination before bisphosphonate therapy begins. The primary objective is to institute and complete dental therapy, including the elimination of all potential sites of infection, as well as the attainment of good oral and dental health, before the risk of developing BON increases.

- Close and ongoing communication between the dentist and the treating oncologist/physician is necessary. Moreover, patients receiving bisphosphonates should be provided with information about BON and made aware of the early signs of its development. Once active dental therapy is completed, patients should be scheduled for regular follow-up visits to monitor their oral health and reinforce appropriate hygiene habits.
- For patients already receiving bisphosphonates, extractions and other types of dental surgery should be avoided if at all possible. Furthermore, such patients are not suitable candidates for the placement of dental implants, due to the significant concerns about their ongoing viability.
- At present, it appears that the incidence of BON is low in patients taking oral bisphosphonates for osteoporosis. Over time, a more accurate estimate of the true incidence should become available.

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**Dr. Michael Gardner**  
Assistant to the Registrar, Dental  
phone: 416-934-5616  
toll-free: 1-800-565-4591  
e-mail: mgardner@rcdso.org