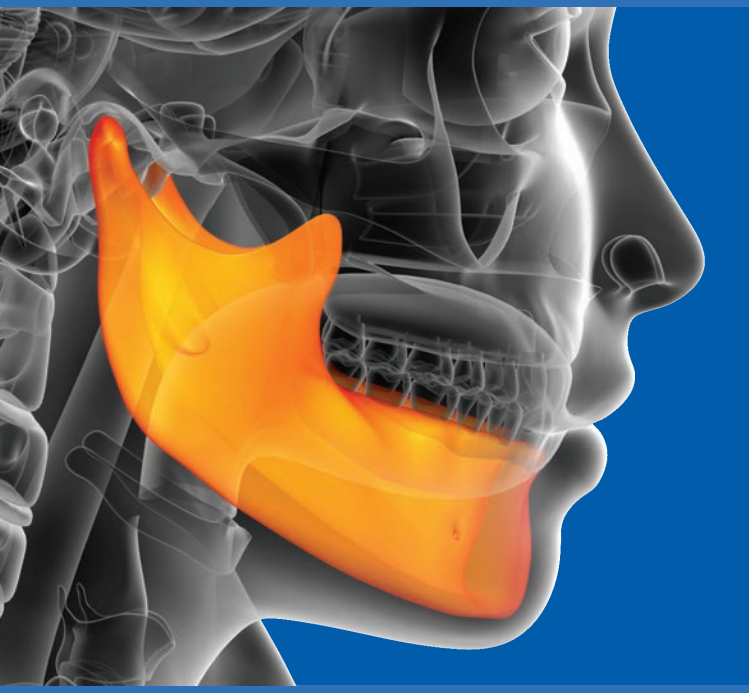
Community dentists and osteonecrosis of the jaw



By understanding the risk factors for osteonecrosis of the jaw (ONJ) and the steps that can be taken to avoid it, community dentists can play a key role in the prevention of this complication in patients receiving antiresorptive treatment. It is also essential that community dentists are aware of the signs and symptoms so that in the rare instances when ONJ occurs, diagnoses can be made promptly and patients can be treated effectively and conservatively.

What is ONJ?

ONJ is a rare bone complication that can be associated with use of the bone-protecting (antiresorptive) agents bisphosphonates and denosumab▼ for the prevention of skeletal-related events in patients with cancer and bone metastases, or treatment of giant cell tumour of the bone.[1–4]

Although ONJ can lead to considerable morbidity, there are many steps that can be taken to prevent the condition, in addition to effective management strategies.[4–8]

Accurate diagnosis is crucial because patients receiving antiresorptive agents may present with other common clinical conditions, which should not be mistaken for ONJ. Such conditions include: alveolar osteitis, caries, chronic sclerosing osteomyelitis, fibro-osseous lesions, gingivitis/periodontitis, sinusitis, periapical pathology and temporomandibular joint disorders.[6]

Identifying ONJ

ONJ may present with the following signs and symptoms.[9,10]

- Exposed bone
- Paraesthesia in the region of the jaw
- Loosening of teeth
- Fistulae
- Swelling
- Exudation
- Pain
- Soft tissue infection
- Halitosis

ONJ is characterised by three main features[11]

An area of exposed jawbone

No healing for more than 8 weeks

No previous craniofacial irradiation

Who is at risk of ONJ?

Patients receiving bone-protecting therapy for the prevention of skeletal-related events in patients with cancer and bone metastases are at increased risk. Bisphosphonates and denosumab are also used to treat osteoporosis, but at much lower doses; hence, the risk of ONJ in patients receiving treatment for osteoporosis is much lower.[4,6]

Various other factors are associated with an increased risk of ONJ in patients receiving bone-protecting therapy.[1,2,4,9,12]

The main risk factors include:

- Invasive dental treatments (e.g. tooth extraction, insertion of dental implants or prostheses, or surgery in the region of the mouth)
- Poor oral hygiene
- Cancer therapy (e.g. radiotherapy in the region of the head and neck, chemotherapy, corticosteroid therapy, or previous treatment with bisphosphonates or inhibitors of angiogenesis)
- Concomitant diseases (e.g. pre-existing dental diseases, anaemia, infections, diabetes mellitus, immunosuppression or renal failure)
- Smoking
- Old age

How can ONJ be prevented?

By examining patients thoroughly before treatment with denosumab or bisphosphonates, dentists can ensure that patients' oral health is optimal and that any necessary dental procedures are completed before patients receive bone-protecting therapy.

Before initiating bone-protecting therapy, dentists and patients should consider the following preventive measures:[2,6]

- Removing non-restorable teeth and completing dental surgery
- Treating infections in the mouth region
- Checking prostheses to ensure good positioning and treating any pressure points that have arisen

All restorative dental procedures should be completed before the start of treatment

To reduce the risk of ONJ further during treatment with bone-protecting therapy, all patients should be encouraged to maintain good oral hygiene, to have routine dental check-ups and to tell their dentist or doctor about any problems with their mouth or teeth, such as loose teeth, pain or swelling, non-healing of sores or discharge.[1,2]

ONJ stages[6]

Increased risk
Patients who are receiving bone-protecting therapy

Stage 0
No clinical evidence of necrotic bone, but non-specific clinical findings

Stage 1
Exposed and necrotic bone in asymptomatic patients without evidence of infection

Stage 2
Exposed and necrotic bone in patients with infection, radiographic findings localised to alveolar bone region

Stage 3
Exposed and necrotic bone in patients with infection and additional complications (exposed and necrotic bone extending beyond the alveolar ridge, pathologic fracture, extraoral fistulae, oroantral/oronasal fistulae or osteolysis)

Managing ONJ

Identifying ONJ at an early stage means that the majority of patients can be managed conservatively using the following treatments.[4,6]


Maintenance of optimal oral hygiene


Elimination of active dental and periodontal disease


Topical antibacterial mouth rinses


Systemic antibiotic therapy

This approach will resolve the majority of early-stage cases or provide long-term symptomatic relief.[4,13,14] For non-responsive ONJ lesions, surgery (debridement and/or resection) can be effective.[4,15,16]

There is a lack of data regarding discontinuation of antiresorptive therapy (a 'drug holiday').[6] If ONJ develops, the patient's oncologist may consider discontinuing the therapy until soft tissue closure is achieved; in such cases, the risk of skeletal-related events if therapy is stopped should also be assessed.[6,17] The management plan should be set up in close collaboration with the patient's physician.[1,2]

Key questions

- ☑ Has your patient had any recent changes in medication?
- ☑ Is your patient currently undergoing anti-cancer treatment?
- ☑ Does your patient have any additional risk factors for ONJ?

Take-home messages

- ONJ can occur as a rare complication of bone-protective therapy used for patients with cancer and bone metastases
- The risk of ONJ can be reduced by implementing preventive dental measures before starting treatment, maintaining good oral hygiene, ensuring periodic follow-up by dental professionals and avoiding elective invasive procedures during treatment
- Early diagnosis enables most cases of ONJ to be managed effectively and conservatively by an experienced and trained dental specialist

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▼This medicinal product is subject to additional monitoring. All suspected adverse reactions should be reported

This document was reviewed by an ADEE panel in July 2016.

For further information, please visit www.adee.org/adee-onj

Amgen (Europe) GmbH
Dammstrasse 23
CH-6301 Zug
Switzerland

www.amgen.com

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