

# Osteonecrosis of the jaw



A strong partnership between clinicians and dentists is key in the prevention of osteonecrosis of the jaw (ONJ) in patients receiving antiresorptive agents. It is also essential that clinicians 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?

Signs and symptoms include exposed bone, paraesthesia in the region of the jaw/gum, loosening of teeth, fistulae, swelling, exudation, pain, soft tissue infection and halitosis.<sup>1,2</sup>

Over 90% of cases of ONJ are in patients receiving antiresorptive therapy (bisphosphonates and denosumab▼) for the prevention of skeletal-related events in patients with cancer and bone metastases, or for the treatment of giant cell tumour.<sup>3-6</sup> However, this complication is rare, even in the oncology setting, with phase 3 studies of denosumab and the bisphosphonate zoledronic acid suggesting an incidence of up to 2.3% when patients with solid tumours are treated for up to 2 years.<sup>7-9</sup> The incidence increases with duration of therapy; in an open-label extension of two phase 3 studies, patients with breast or prostate cancer received denosumab for up to 5 years, and the incidence of ONJ was 6.9%.<sup>a,10</sup>

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.<sup>11-14</sup>

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.<sup>12</sup>

<sup>a</sup>Incidence not adjusted for exposure. Comparable long-term data for zoledronic acid are not available.

## ONJ<sup>b</sup> is characterised by three main features<sup>15</sup>



An area of exposed jawbone



No healing for more than 8 weeks



No previous craniofacial irradiation

<sup>b</sup>ONJ related to antiresorptive therapy is sometimes referred to as 'medication-related ONJ' or 'MRONJ'.<sup>16</sup>

## Who is at risk of ONJ?

Patients receiving antiresorptive 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.<sup>6,12</sup>

Various other factors are associated with an increased risk of ONJ in patients receiving bone-protecting therapy.<sup>1-4,6,17</sup>

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?

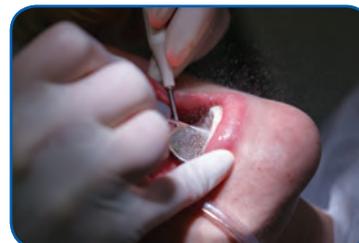
By examining patients thoroughly before they receive denosumab or bisphosphonates, clinicians can ensure that patients' oral health is optimal and that any necessary dental procedures are completed before patients receive bone-protecting therapy.

Before initiating bone-protecting therapy, physicians may need to refer patients to dentists for the following preventive measures:<sup>4,12</sup>

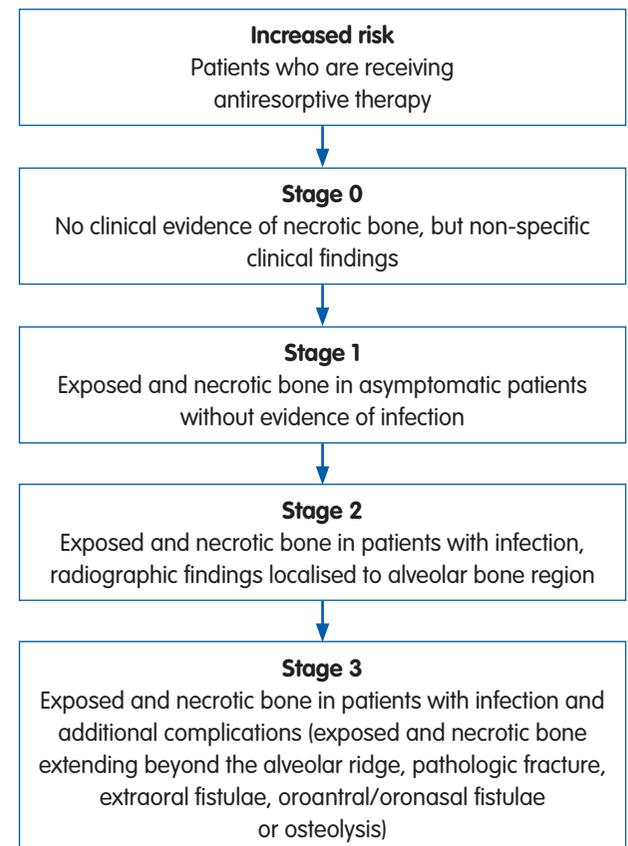
- Removing non-restorable teeth and completing required dental surgery
- Treating infections in the mouth region
- Checking prostheses to ensure good positioning and treating any pressure points that have arisen

**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.<sup>3,4</sup>



## ONJ stages<sup>12</sup>



## Managing ONJ

Identifying ONJ at an early stage means that the majority of patients can be managed conservatively using the following treatments.<sup>6,12</sup>

- 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.<sup>6,18,19</sup> For non-responsive ONJ lesions, surgery (debridement and/or resection) can be effective.<sup>6,20,21</sup>

There is a lack of data regarding discontinuation of antiresorptive therapy (a 'drug holiday').<sup>12</sup> 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.<sup>12,22</sup>

The management plan should be set up in close collaboration with the patient's dentist or hospital dental centre.<sup>3,4</sup>

## Key considerations

- Assess your patients' oral health before they start antiresorptive therapy: refer patients to their own dentist or to a hospital dental service (if available).
- Advise your patients to have regular dental check-ups during antiresorptive treatment.
- Assess your patients for additional risk factors.
- Provide patients with an alert card to take with them on their next visit to their dentist.

## Take-home messages

- ONJ can occur as a rare complication of antiresorptive 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](http://www.adee.org/adee-onj)

Amgen (Europe) GmbH  
Dammstrasse 23  
CH-6301 Zug  
Switzerland  
[www.amgen.com](http://www.amgen.com)

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