

Bisphosphonates and Osteonecrosis of the Jaw

Bisphosphonate medications are widely used in the treatment of bone diseases including osteoporosis and Paget's disease and in some cancers. They are used in low oral and intravenous (IV) doses to treat osteoporosis and to prevent fractures. They are used in high IV doses in cancer to prevent complications when it spreads to bone. This class of drugs has been used for over 10 years.

Bisphosphonates reduce the risk of fractures (broken bones) by about 50%. As up to 30% of patients can die in the first 12 months after a hip fracture, bisphosphonates are likely to reduce the numbers of deaths associated with this and other fractures due to osteoporosis.

These benefits outweigh the risk of side effects of bisphosphonates, which are minimal. Osteonecrosis of the jaw (ONJ) is a very rare side effect of bisphosphonates. However, you should be aware of this rare but potentially serious association of bisphosphonate treatment and take appropriate measures to help prevent it.

What is osteonecrosis of the jaw?

Osteonecrosis means death of bone. Osteonecrosis of the jaw (ONJ) is defined as an area of exposed bone (not covered by gum) in the jaw region that does not heal within 8 weeks of identification. The exact cause of ONJ is currently unknown.

What is the risk of developing this complication?

The risk of developing bisphosphonate-associated ONJ ranges between 1/10,000 to 1/100,000 for patients taking oral or IV bisphosphonates for treatment of osteoporosis or Paget's disease. The risk is much higher, ranging between 1% and 10%, for patients with cancers on high IV doses.

What are the risk factors for bisphosphonate-associated ONJ?

- Use of high-dose IV bisphosphonates,
- Longer duration of treatment with bisphosphonates
- Glucocorticoid use (Prednisolone, Dexamethasone, etc.)
- Alcohol abuse and tobacco use
- People suffering from cancer
- Poor dental hygiene and those who undergo a dental procedure such as dental extraction
- Diabetes mellitus

What are the symptoms of ONJ?

- Severe jaw pain
- Numbness of the jaw
- Swelling and infection of the jaw region
- Loosening of teeth and exposed bone

These symptoms may occur spontaneously or more often, following tooth extraction.

What should I do to minimize the risk of ONJ?

- Inform your dentist that you are taking bisphosphonates, especially if you plan to have a dental procedure
- Maintain good oral hygiene, attend regular dental visits and report any oral problems to your dentist.
- If you are planning to take bisphosphonates for cancer, you should have a dental evaluation prior to starting the medication and then every 6 to 12 months or as directed by your dentist.
- Discuss possible side-effects with your GP

Can ONJ be treated?

There is no cure for ONJ to date. Stopping bisphosphonates may not alter the progression of the disease. You should therefore discuss with your doctor whether or not it is appropriate for you to cease bisphosphonates if this complication occurs.

What are the common bisphosphonates used in treatment of osteoporosis & cancer?

Alendronate (Fosamax, Fosamax plus, Alendro) and Risedronate (Actonel, Actonel Combi) are most often used for osteoporosis treatment as oral tablets given weekly or monthly. Zoledronic acid (Aclasta) is used for osteoporosis treatment as an annual intravenous (IV) dose. Pamidronate (Aredia, Pamisol) and Zoledronic Acid (Zometa) are given by IV doses in cancer.

However, the risk of developing ONJ from intravenous Aclasta given for osteoporosis treatment is far lower (~1/10,000) due to the lower frequency of dosing (an annual infusion for 3 years) compared with intravenous Zometa infused approximately once every 4-6 weeks), as well as a lower incidence of additional risk factors for ONJ (e.g. chemotherapy, cancer, and corticosteroids).

Note: Intravenous or IV means that a medication is injected directly into the vein

Important Points

1. The main risk group for ONJ are patients on IV doses who have CANCER - NOT patients on oral or IV doses for osteoporosis.
2. The overall benefits of oral bisphosphonates in preventing complications (including death) from minimal trauma fractures due to osteoporosis generally far outweigh the risk of developing ONJ.

www.osteoporosis.org.au

www.anzbms.org.au

Ref: Khosla S et al., 2007 ASBMR Task Force on Bisphosphonate-Associated ONJ. Journal of Bone and Mineral Research, 22 (10): 1479-89.

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