Talking with Patients

Bisphosphonates and Oral Health

André V. Ritter, DDS, MS
Ricardo Padilla, DDS*

WHAT ARE THEY?

Bisphosphonates are drugs used for the prevention and treatment of bone diseases such as osteoporosis, Paget's disease, metastasis of cancers, and hypercalcemia. They work in a relatively complex way by interfering with cells that form and break down bone. Bisphosphonates remain attached to the bone for a long time after they are taken, and decrease significantly the bone's ability to remodel and heal after injuries.[1] There are many types of bisphosphonates available, including nitrogenous, nonnitrogenous, intravenous, and oral presentations. Examples of bisphosphonates on the market include Actonel (risedronate), Procter & Gamble Pharmaceuticals, Cincinnati, OH, USA; Aredia (pamidronate), Novartis Novartis Pharmaceuticals Corp., East Hanover, NJ, USA; Boniva (ibandronate), Roche Therapeutics, Inc., Nutley, NJ, USA; Didronel (etidronate), Procter & Gamble Pharmaceuticals; Fosamax (alendronate), Merck & Co., Inc., Whitehouse Station, NJ, USA; Skelid (tiludronate); Sanofi Pharmaceuticals, New York, NY, USA; and Zometa (zoledronate), Novartis Novartis Pharmaceuticals Corp.[2]

HOW DO THEY AFFECT YOUR ORAL HEALTH?

It has been recently reported that the long-term use of bisphosphonates is associated with an oral condition called osteonecrosis of the jaws. In patients affected with bisphosphonates-related osteonecrosis of the jaws, or BRONJ, the jawbone's ability to respond to otherwise routine procedures, such as tooth extractions and oral surgery, is impaired. In extreme cases, a part of the jawbone dies and can be exposed in the mouth. Some patients experience severe pain, drainage of pus, bone fractures, and even systemic signs and symptoms of infection, such as fever and lymphadenopathy. BRONJ is more likely to develop in the presence of bacteria, when high doses of bisphosphonates are used for a long time, and when nitrogenous and intravenous forms of the drug are used.[3]

PREVENTION AND TREATMENT

For patients who are taking or have taken bisphosphonates, limiting the area of bone exposure during tooth extractions and oral surgeries is critical to prevent BRONJ. Patients who will start taking bisphosphonates should undergo a thorough dental examination to prepare the mouth to be in optimal health before bisphosphonates exposure. If the condition develops, available treatments include topical antimicrobial rinses, systemic antibiotics, pain control, and, sometimes, surgery to remove fragments of dead bone with active infection that do not respond to antibiotics.[4] Discontinuing bisphosphonate use in patients with established BRONJ is of controversial benefit because of the documented long-lasting effects of the drug on the bone. A blood test that measures bone turnover, called C-terminal telopeptide, is currently being studied as a potential test to determine the patient's risk to develop BRONJ.

SUMMARY AND CONCLUSIONS

Bisphosphonates are drugs used to treat bone disorders but are associated with a potentially serious side effect called BRONJ. Although the prevalence of the condition is low overall, the risk increases substantially for patients who use or have used intravenous bisphosphonates on a long-term basis. It is of utmost

*Clinical assistant professor, graduate program director, Department of Diagnostic Sciences and General Dentistry, University of North Carolina at Chapel Hill School of Dentistry, Chapel Hill, NC

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DOI 10.1111/j.1708-8240.2008.00152.x

Figure 1. Example of bisphosphonate-related osteonecrosis of the jaw over a palatal torus.

importance to inform your dentist if you are taking or have taken bisphosphonates. The dental team should work closely with the patient's physician to develop a strategy to prevent BRONJ while under bisphosphonate therapy.

If you suspect you may have this condition, contact your dentist as soon as possible for a complete evaluation. Figure 1 illustrates an example of bisphosphonate-related osteonecrosis of the jaw over a palatal torus.

DISCLOSURE

The authors do not have any financial interest in the manufacturers whose materials are discussed in this article.

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