Osteoporosis and bisphosphonates

The administration of bisphosphonates, via an IV or orally, is an important distinction.

By David L. Hoexter, DMD, FACD, FICD

If used appropriately, bisphosphonates are a tremendous tool in treating osteoporosis. There is currently a great deal of confusing information over when and how to safely use them.

Clearing up the confusion is important because more than 50 million people in the United States are currently suffering from osteoporosis, and if they are not treated, they are at risk for osteoporotic fractures that seriously jeopardize their lives.

At present, bisphosphonates are the best tool to reduce bone loss and significantly reduce the chance of these fractures. It is estimated that 24 percent of patients with osteoporotic fractures not treated by bisphosphonates will die because of these fractures.

Recently, reports of osteonecrosis of the jaw (ONJ) associated with bisphosphonates have caused fear about using these medications. As it was once known, “We have nothing to fear but fear itself.”

Identifying the problem

Today we have acquired fear about using certain medication for osteoporosis. Namely, bisphosphonates and their relationship to osteonecrosis. Osteonecrosis is defined as the death of bone tissue due to an impaired blood supply. When the diagnosis of osteonecrosis is made, the cause is listed as definite causes and possible causes.

Definite causes includes: alcohol abuse, atherosclerosis, decum
pression sickness, Guacher’s disease, high doses of corticosteroids, radiotherapy, sickle cell disease and tumors. Possible causes include: blood clotting disorders, Cushing’s syndrome, diabetes mellitus, fatty liver, gout, lipid disturbances, pancreatic cancer, pancreatitis, smoking, systemic lupus and erythematosus.

Brittle bones and fractures are more prevalent as the population lives longer. It is estimated that 20 to 30 million people have concerns about their osteoporosis and are taking medications to cease or prevent their osteoporosis. The medications to aid osteoporosis are in general called bisphosphonates.

When clinical reports of associations of bisphosphonates to osteonecrosis were distorted, it started a reaction that caused people to associate all bisphosphonates and all levels of strengths and dosages in one grouping. It is as if one were to claim all antibiotics are the same and only one strength were to be used for all instances.

There is a benefit to being made aware by Marx and Ruggerio, and now drug makers are also aware of the possibility of ONJ and include this information in their listing of possible side effects for bisphosphonates.

However, the result of this information has also caused people to hesitate in their efforts to prevent or inhibit osteoporosis. Suddenly, lawyers have come to the fore who claim to specialize in representing patients using bisphosphonates who wish to instigate a lawsuit and actually advertise to acquire plaintiffs who have been harmed by using bisphosphonates. In addition, some physicians now hesitate to prescribe bisphosphonates for fear of legal consequences, leaving the patient to deteriorate further.

Oral surgeons at dental meetings are also showing more osteonecrotic lesions in their presentations. However, the causes of these necrotic lesions are not necessarily from bisphosphonates.

Clinical reports of osteonecrosis associated with bisphosphonates was brought to dentists’ awareness by oral surgeons (Marx and Ruggerio) some 30 years after the use of bisphosphonates were first released to the public and received FDA approval.

Oral bisphosphonates were first approved and released in 1970, and clinical reports of oral necrosis were published after 2003. The clinical reports independently provided proof of oral necrotic bone lesions resulting when treating patients in hospitals that were under some regime and hospitalized.

Only after oral surgical therapy, while in the hospital, these patients presented necrotic oral lesions and their sequela.

While I do appreciate the reporting of such information and now avoid having patients acquire further trauma, I found myself asking: “What were these patients doing in a hospital environment to begin with?” As reported, the patients were all hospitalized for cancer therapy and undergoing chemotherapy. Their resistance factors certainly may, under those circumstances, be altered.

The method of receiving bisphosphonates while being treated in a hospital was not, as most commonly accepted, orally, but rather intravenously.

Intravenous bisphosphonates have been used for Paget’s disease, hypercalcemia associated with malignancy and with anti-neoplastic bone lesions associated with breast cancer and multiple myeloma. The strength and dosages of the medication used with the IV was close to four times the recommended oral dosage.

There are, of course, protocols for treating hospitalized patients, and they were all followed. Yet, these reports are being interpolated to encompass all modes of bisphosphonates delivery systems. However, there are positive results from using oral bisphosphonates when administered at the proper dosage. Emphasis must be placed upon differentiating the reported results from all intravenous delivery of bisphosphonates as well as the recognition of different dosages.

In my practice, I have patients who are taking oral bisphosphonates. I treated them for periodontal disease with surgical intervention with positive results over the years.

The same goes for patients that continued taking their oral bisphosphonate medication when I placed implants and achieved successful results.

Dr. M. Jeffcoat reported a three-year study comparing patients taking oral bisphosphonates with non-medicated patients. Each group received the same number of implants inserted. The results were the same for each group:

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The millions of patients that have osteoporosis and need assistance are the ones that we are trying to aid, not deter. Let our profession encourage and inform patients of all the facts pertaining to bisphosphonates. Indeed, I have apprehensions of unknown possibilities for those taking various medications.

As such, in the case of oral bisphosphonates, what might be the accumulative effects of taking this medication for five or 10 years?

A recent report from University of Southern California showed a 96 percent success rate of people using oral bisphosphonates with osteoporosis. A new acronym for bisphosphonate-associated osteonecrosis, BON, has become popular in discussions.

It behooves us to share this knowledge with our patients. In particular, we must clearly note the difference in administration of bisphosphonates via an IV or orally when discussing the use and safety of these drugs.

So-called “drug holidays” are not the answer. There is no supporting data that stopping the use of bisphosphonate medication for a set amount of time reduces the risk of developing BON.

Perhaps standardizing a bone turnover marker test and getting a base line of bone metabolism, a DTX information gathering radiograph — definitely as the American Dental Association suggests with osteoporosis — and trying to avoid oral pathology by undergoing regular oral examinations by a dentist and increasing good oral hygienic techniques by using power toothbrushes or hand toothbrushes, and avoiding alcohol rinses would decrease risk.

Perhaps with knowledge and statistical studies we can help eliminate this fear.

About the author

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