Health & Medicine

Are You Taking Fosamax or Actonel?

Michelle Cantwell, DMD

This is not meant to frighten you. Heaven knows none of us need an extra reason to be frightened these days.

But you may already be concerned – especially if you've read or heard any of the recent coverage in the national news media about a reported link between certain medications (bisphosphonates) and a medical condition known as osteonecrosis (literally, "bone death").

The reason for the widespread concern is that Fosamax and Actonel, which are commonly prescribed as a treatment for osteoporosis, are bisphosphonates. In fact, one faculty member at the University of Pennsylvania School of Dental Medicine says he received dozens of calls from concerned patients within days after National Public Radio broadcast a story on the subject.

In an effort to provide better care to my patients and become better informed myself, I consulted a specialist – Dr. Joseph Cillo, DMD. During a fellowship in Maxillofacial Tumor and Reconstructive Surgery at the University of Miami School of Medicine in Miami, Florida, Dr. Cillo conducted research in and had extensive experience in the management of patients with bisphosphonate-induced osteonecrosis of the jaw. In August, Dr. Cillo will be an Attending Oral and Maxillofacial Surgeon at Allegheny General Hospital in Pittsburgh, Pennsylvania.

Here's what I learned. First, there are two forms of bisphosphonates – one administered orally, the other intravenously. Fosamax and Actonel are the oral form. They are much less potent than Aredia and Zometa, which are used intravenously to stabilize metastatic cancer deposits in the bone or to treat the bone-resorption defects of multiple myeloma.

Second, the news stories were triggered by reports from the FDA Adverse Event Reports database, which identified a total of 139 cases of osteonecrosis as of May 24, 2004. Of these, more than 90% were associated with the IV bisphosphonates, either singly or in combination. An additional 8.6% were associated with Fosamax, and one case was associated with Actonel.

Clearly, there is much more reason for concern among patients who are taking the IV form. But all bisphosphonates – including the oral forms – have the same mechanism of action. And that means patients who are taking Fosamax or Actonel – and their dentists and physicians, as well – also need to be aware of the potential risks.

To understand what bisphosphonates do, it's important first to realize that living bone is constantly being "remodeled" – about 5-10% per year – by specialized cells known as osteoclasts and osteoblasts. The osteoclasts remove old bone tissue, and this triggers the osteoblasts to deposit new bone tissue (which is stronger and more flexible) in the spaces left by the osteoclasts. For women who are beyond their mid to late thirties – and especially in the years immediately following menopause – bone resorption by the osteoclasts begins to outpace new bone formation by the osteoblasts. This results in lower bone density and can lead to osteoporosis.

Bisphosphonates work by inhibiting the activity of the osteoclasts, to reduce the amount of bone tissue that's resorbed. In the case

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of the oral bisphosphonates, this may help prevent fractures in the hip, spine, and other skeletal regions. But it also interferes with the removal of diseased bone and with the development of the necessary structure, or "scaffolding," on which to lay down new bone.

In other words, inhibiting bone loss also inhibits the growth of healthy new bone. And this can be a particular problem for oral health. In fact, bisphosphonate-induced osteonecrosis occurs in the jaws more often than in any other area of the body. That's because teeth are constantly being used to chew food and that necessitates constant remodeling of the bone around the teeth. But bisphosphonate-treated bone is not able to remodel, and dead bone may form. Since the protective tissue surrounding the bone (the gums) is relatively thin, there is real risk that areas of dead bone may become exposed in the oral cavity. And exposure of dead bone requires a lifelong regimen of antimicrobial mouthwashes – and, in some cases, oral antibiotics – to prevent secondary infections.

The bottom line is that patients who are taking bisphosphonates are at greater risk for developing osteonecrosis of the jaw – especially associated with invasive procedures like extractions. For those taking the more potent IV bisphosphonates, that means extractions – and many other procedures, including orthodontics – are absolutely contraindicated, because the success of these procedures requires remodeling of the bone surrounding the affected teeth. To a lesser but still significant degree, it also raises concern for the oral health of women who are taking oral bisphosphonates to treat or prevent osteoporosis.Although the oral bisphosphonates are less potent, they also work by inhibiting resorption – which means they also interfere with the formation of new bone. So oral surgery for these patients may also be more risky. The current recommendation is that anyone who has taken oral bisphosphonates for three years or longer should discontinue taking them for three months prior to any oral surgery – and should not resume taking them until three months after the procedure.

And if you're considering taking Fosamax or Actonel or any other bisphosphonate – but haven't yet begun – you should first schedule a thorough oral exam by your dentist or oral surgeon. All necessary dental work and oral surgery – including the extraction of any partially impacted teeth – should be completed at least one month before you take your first dose.

So, although this is not meant to frighten you, it is meant to provide some additional information that you should consider – and discuss with your healthcare providers – if you're taking Fosamax or Actonel, or considering taking one of them as a treatment or preventive measure for osteoporosis.

Michelle Cantwell is originally from Kingston, Pennsylvania and resides in Mount Joy with her husband John and their three daughters. Dr. Cantwell attended the University of Pittsburgh, School of Dental Medicine for both her dental degree and her three year residency in prosthodontics. Upon graduation, Dr. Cantwell and her husband served the United States Navy in Norfolk, Virginia.

Dr. Cantwell's prosthodontic practice is located on Oregon Pike in Lancaster. Her practice utilizes the most contemporary dental technology, including laser dentistry and digital radiographs to minimize the patient's exposure to radiation. Incorporating laser dentistry allows many routine procedures to be performed with greater precision and less trauma to the surrounding area. Prosthodontics is one of nine dental specialties recognized by the American Dental Association. This specialty focuses on the management of the most complex dental restorations ranging from traumatic injury to genetic facial deficits as well as routine dentistry. Dental implants, crowns, bridges and full or partial dentures are just some of the procedures used by the Cantwell Dental Group to restore smiles.

Dr. Cantwell is a member of many local, regional and national organizations. These include the American Dental Association, the American Association of Women Dentists, and the American College of Prosthodontists.