Benefits of bone drugs appear to outweigh risks

A group of drugs called bisphosphonates are commonly used in the treatment of the following conditions:

- thinning bones —osteopenia or osteoporosis
- bone cancer
- bone-cancer related complications such as fractures or excessive calcium in the blood

These drugs have been available for several decades in high-income countries but only in 2003 did reports of a disturbing side effect appear—decaying jawbones or osteonecrosis of the jaw (ONJ).

Most published reports of ONJ have occurred in people who have received bisphosphonates because they also had cancer. This point is important to note because doses of these drugs used in people with cancer are about 12 times greater than the doses used to treat osteoporosis in people without cancer.

ONJ appears to occur after several years of therapy with bisphosphonates. In many cases, it appears to be triggered after dental trauma. This could take the form of dental surgery, including tooth extractions or irritation from poorly fitted dentures.

Researchers are still trying to understand why ONJ occurs. One theory is as follows: Bisphosphonates accumulate in bone. Removal of teeth or other dental surgery can release large concentrations of these drugs to the surrounding mucosal tissue of the mouth. These tissues are sensitive to bisphosphonates and are weakened when exposed to these medications. Indeed, lab research suggests that bisphosphonates can damage the tissues of the mouth. So, after dental surgery in people taking these medications, the damaged mucosal tissue is slow to heal. This allows bacteria in saliva direct access to the jawbone, which then can become infected, inflamed and die.

This theory seems reasonable and may explain why bone death and destruction associated with the use of bisphosphonates has not been reported in other parts of the skeleton such as the hips, ribs and spine. Based on this theory, the other parts of the body that may be sensitive to soft tissue damage associated with bisphosphonates include the nasal sinuses and inner ear. So far, one case of osteonecrosis of the inner ear canal has been reported in a person who used bisphosphonates. However, this man had been battling bone cancer for many years and had received chemotherapy for several years.

Putting it in perspective

ONJ appears to occur most commonly in people with bone cancer who use bisphosphonates. This group of people has a much higher than average exposure to bisphosphonates.

No cases of ONJ have been reported in 60,000 people who have participated in randomized clinical trials of bisphosphonates for at least two years.

No cases of ONJ have been reported in HIV positive people who have been using bisphosphonates.

Some HIV positive people appear to be at increased risk for thinning bones and may be prescribed bisphosphonates.

The benefits of using bisphosphonates to prevent fractures appear to outweigh the risks of ONJ development in HIV negative people. The risk of developing ONJ may be as high as 1 in 60,000 people, or perhaps lower, depending on the region where the calculation was done.

In high-income countries, it may be useful for everyone to get a dental exam at least once a year to assess oral health and detect any problems so that they can be treated before they become serious.
REFERENCES:


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