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:


Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

CATIE provides information resources to help people living with HIV and/or hepatitis C who wish to manage their own health care in partnership with their care providers. Information accessed through or published or provided by CATIE, however, is not to be considered medical advice. We do not recommend or advocate particular treatments and we urge users to consult as broad a range of sources as possible. We strongly urge users to consult with a qualified medical practitioner prior to undertaking any decision, use or action of a medical nature.

CATIE endeavours to provide the most up-to-date and accurate information at the time of publication. However, information changes and users are encouraged to ensure they have the most current information. Users relying solely on this information do so entirely at their own risk. Neither CATIE nor any of its partners or funders, nor any of their employees, directors, officers or volunteers may be held liable for damages of any kind that may result from the use or misuse of any such information. Any opinions expressed herein or in any article or publication accessed or published or provided by CATIE may not reflect the policies or opinions of CATIE or any partners or funders.

Information on safer drug use is presented as a public health service to help people make healthier choices to reduce the spread of HIV, viral hepatitis and other infections. It is not intended to encourage or promote the use or possession of illegal drugs.

Permission to Reproduce

This document is copyrighted. It may be reprinted and distributed in its entirety for non-commercial purposes without prior permission, but permission must be obtained to edit its content. The following credit must appear on any reprint: This information was provided by CATIE (the Canadian AIDS Treatment Information Exchange). For more information, contact CATIE at 1.800.263.1638.

© CATIE

Production of this content has been made possible through a financial contribution from the Public Health Agency of Canada.