Zoledronic Acid (ZOE-le-dron-ik AS-id)

Brand Names: Zometa®, Reclast® (There may be other brand names for this medication.)

How is it Administered? Your medicine will be given intravenously, which means it will be given by injection into a vein, usually in your arm, wrist, hand or chest.

What is Zoledronic Acid Used For? This drug is used to treat high blood calcium levels (hypercalcemia) that sometimes occur in people that have cancer; osteoporosis; and bone damage caused by multiple myeloma or cancers that have spread to the bones. Zoledronic acid is used to treat bone disease. It will not slow or stop the spread of cancer.

How Does it Work? There are two kinds of bone cells – osteoblasts that create bone and osteoclasts that break down bone. The creation and destruction of bone is generally kept balanced, though we do tend to lose bone mass as we age.

Some cancers cause the osteoclasts to speed up their destruction of bone. In addition to bone weakness, which increases the risk of a fracture, this can also cause pain and excess calcium to be released into the bloodstream. Calcium can affect your heart rate, among other bodily functions.

Zoledronic acid is in a class of medications called bisphosphonates. It works by slowing bone breakdown by the osteoclasts, increasing bone density (thickness), and decreasing the amount of calcium released from the bones.

What Should I Tell My Doctor Before I Begin Receiving Zoledronic Acid? Tell your doctor if you:

- have ever had an allergic reaction zoledronate or similar medicines such as alendronate/Fosamax® or risedronate/Actonel®; mannitol; or aspirin
- are pregnant or breast feeding
- are taking oral steroids (methylprednisolone/Medrol®,

© 2010 Roswell Park Cancer Institute
• have ever had low calcium levels (in your blood)
• have taken zoledronic acid or other bisphosphonates in the past
• have ever had parathyroid or thyroid surgery or surgery to remove parts of your small intestine
• have anemia, problems with blood clotting; difficulties absorbing nutrients from food; problems with your mouth, teeth, or gums; an infection; asthma; or parathyroid, kidney, or liver disease
• have ever had heart failure/congestive heart failure

This drug may interact with other medications, increasing or decreasing their effectiveness or causing harmful side effects. Tell your doctor and pharmacist about any prescription or over-the-counter medications, vitamins, herbal or diet supplements that you are taking.

Osteonecrosis of the Jaw
Osteonecrosis (pronounced OSS-tee-oh-ne-KRO-sis) of the jaw is a rare condition that involves the loss, or breakdown, of the jaw bone. It can be a serious condition. Symptoms include:
• pain, swelling, infection, or poor healing of the gums
• loosening of teeth
• numbness or the feeling of heaviness in the jaw

Other possible risk factors for osteonecrosis include radiation therapy to the head or neck, chemotherapy, steroid therapy, anemia and other blood disorders, infection, history of poor dental health, gum disease or dental surgery, alcohol abuse, cigarette smoking, and poor nutrition.

Diagnosis is made by x-rays or tests for infection. Treatments may include antibiotics, oral rinses, and removable mouth appliances. Rarely, minor dental work may be necessary to remove injured tissue and reduce sharp edges of the bone. Once your cancer treatment has started, if you experience pain in your mouth, teeth, or jaw- or any other symptom of possible dental problems- tell both your oncologist and dentist immediately.

Cancer Treatment and Dental Health
Cancer treatments and medications can affect your teeth and gums and cause:
• inflammation of the mucous membranes in the mouth

© 2010 Roswell Park Cancer Institute
• infections and sores inside your mouth and/or gum disease
• loss of minerals from your teeth that can cause sensitivity
• taste changes, dry mouth, tooth decay (cavities), difficulty chewing, and/ or pain

Your dentist is an important part of your cancer treatment. You should schedule a dental exam and cleaning before treatment begins and periodically during the course of your treatment. It is especially important to practice good dental hygiene.
• Brush your teeth and tongue after every meal and at bedtime. Use a soft toothbrush and gentle stroke.
• Gently floss once a day to remove plaque. If your gums bleed or hurt, skip those teeth until bleeding stops.
• Rinse your mouth with water and avoid mouthwash containing alcohol

What Are Some Possible Side Effects I May Experience?
• Fever, usually mild and brief
• Stomach pain, nausea, vomiting, diarrhea and/or constipation
• Agitation, excessive worry, sleep problems, and/or depression
• White spots on your lips, tongue, or inside your mouth
• Swelling, redness, irritation, burning, or itching of the vagina and/or white vaginal discharge
• Redness/swelling in the place where you received your injection

How Can I Manage These Side Effects?
• Drink plenty of fluids – 2-3 quarts per day; preferably water, unless your doctor has told you to limit your fluid intake.
• Keep your bowels moving. Drink 2 to 3 quarts of fluid every 24 hours, unless your doctor told you to restrict your fluid intake. Your doctor may prescribe a stool softener, but talk to him or her before using any nonprescription laxative or enema product.
• Mouth care is very important. Rinse your mouth with a mixture of ½ tsp of baking soda in 8 oz of water after every meal and at bedtime. Brush your teeth and gums often with a soft toothbrush. (Soften it further by running it under warm water before brushing.)
• Avoid smoking, alcohol, and mouthwashes that contain alcohol.
• Ask your doctor about medication to help prevent or lessen nausea, vomiting, and/or diarrhea. Eat small, frequent meals.
• Let your doctor/nurse know if you feel anxious or have trouble sleeping.
When Should I Call the Doctor?

**Call your doctor immediately if you experience:**
- any sign of infection: fever of 100.5°F (38°C) or higher, chills, cough, sore throat, pain or burning upon urination; redness or tenderness along a vein, or at an IV site or wound of any kind
- any sign of an allergic reaction: itching or hives, swelling in your face or hands, swelling or tingling in your mouth or throat, chest tightness, trouble breathing, dizziness, or palpitations
- unusual bruising or bleeding: bleeding lasts more than 10-15 minutes or that causes dizziness; black or bloody stools; vomit that is bloody or that looks like coffee grounds; or blood in your urine or phlegm /mucus
- a decrease in how much or how often you urinate
- pain or slow healing in the mouth or jaw

**Call your doctor as soon as possible if you have:**
- nausea not relieved by prescribed medication or that prevents you from eating/drinking
- vomiting more than 3 times in 1 day
- no bowel movement for 3 days or if you feel uncomfortable
- white spots on your lips, tongue, or inside your mouth
- diarrhea of 5-6 stools in 1 day or diarrhea with weakness

What Else Should I Know

**Zoledronic Acid?**
- You may have flu-like symptoms during the first few days after your injection - fever, headache, and bone or muscle pain. These symptoms may last up to 3-14 days.
- Zoledronic acid may cause severe bone, muscle, or joint pain. You may begin to feel this pain within days, months, or years after you first receive zoledronic acid injection. Call your doctor right away if you experience severe pain at any time. Your doctor may stop the injections and your pain may go away.
- Use a reliable method of birth control to prevent pregnancy while receiving zoledronic acid. Call your doctor if you become pregnant while receiving zoledronic acid or if you plan to become pregnant at any time in the future because zoledronic acid may remain in your body for years after you stop receiving it.
- This drug may cause serious jaw problems, especially if you have dental treatment. See your dentist for treatment before starting this medication and talk to your doctor before having dental care. Be sure to brush your teeth and clean your mouth properly.
- Your doctor may prescribe/recommend a calcium supplement and a multivitamin containing vitamin D. Take your supplements every day as directed.
- If you have any other questions, please ask your doctor.

© 2010 Roswell Park Cancer Institute