Zoledronic Acid (Zometa®)

Pronounced: ZOE-le-DRON-ik AS-id

Classification: bisphosphonate

About Zoledronic Acid (Zometa®)

Zoledronic acid is a type of medication called a bisphosphonate, which is used to slow the destruction of bone caused by cancer cells. Cancer cells from some tumors (most commonly breast, prostate and lung cancers) can spread to the bone, which is called bone metastasis. Multiple myeloma is a type of cancer affecting plasma cells, which are found in the bone marrow, and thus directly involves bone. In both of these situations, the cancer cells cause breakdown or wearing away of normal bone. In turn, affected bones become more fragile; they may be painful and can even break due to the damage from the cancer cells.

How to Take Zoledronic Acid

Zoledronic acid is administered intravenously (IV, into a vein). Your dose, and how often you receive it, will be determined by your provider. Your healthcare provider may prescribe you calcium and vitamin D supplements to promote bone health.

You will have lab work done to monitor your electrolytes during treatment. Your creatinine level (indicator of your kidney function) will be monitored closely to determine if the medication is affecting your kidneys. If it is, the dose may be altered or the medication stopped completely.

Possible Side Effects of Zoledronic Acid

There are a number of things you can do to manage the side effects of zoledronic acid. Talk to your care team about these recommendations. They can help you decide what will work best for you. These are some of the most common or important side effects:

Nausea and/or Vomiting

Talk to your doctor or nurse so they can prescribe medications to help you manage nausea and vomiting. In addition, dietary changes may help. Avoid things that may worsen the symptoms, such as heavy or greasy/fatty, spicy or acidic foods (lemons, tomatoes, oranges). Try antacids, (e.g. milk of magnesia, calcium tablets such as Tums), saltines, or ginger ale to lessen symptoms.

Call your doctor or nurse if you are unable to keep fluids down for more than 12 hours or if you feel lightheaded or dizzy at any time.

Constipation

There are several things you can do to prevent or relieve constipation. Include fiber in your diet (fruits and vegetables), drink 8-10 glasses of non-alcoholic fluids a day, and keep active. A stool softener once or twice a day may prevent constipation. If you do not have a bowel movement for 2-3 days, you should contact your healthcare team for suggestions to relieve the constipation.

Low Red Blood Cell Count (Anemia)

Your red blood cells are responsible for carrying oxygen to the tissues in your body. When the red cell count is low, you may feel tired or weak. You should let your oncology care team know if you experience any shortness of breath, difficulty breathing or pain in your chest. If the count gets too low, you may receive a blood transfusion.
Bone, Joint and Muscle pain
Zoledronic acid can cause bone, joint and/or muscle pain that can be severe. This can occur from 1 day to several months after starting the medication. Report these symptoms to your provider, who can advise you on strategies to relieve the pain. Pain in the hip, thigh and groin can be caused by an atypical femur fracture. Notify your provider immediately of any new pain in this area.

Fatigue
Fatigue is very common during cancer treatment and is an overwhelming feeling of exhaustion that is not usually relieved by rest. While on cancer treatment, and for a period after, you may need to adjust your schedule to manage fatigue. Plan times to rest during the day and conserve energy for more important activities. Exercise can help combat fatigue; a simple daily walk with a friend can help. Talk to your healthcare team for helpful tips on dealing with this side effect.

Breathing Difficulties
Bronchoconstriction is the constriction of the lung airways caused by muscle tightening. Patients who are sensitive to aspirin may have bronchoconstriction related to zoledronic acid. Notify your provider of any trouble breathing, tightness in the chest or wheezing.

Less common but important side effects can include:

- **Osteonecrosis of the Jaw:** Osteonecrosis of the jaw (ONJ) is a rare side effect, however, it is important that you know about it and take steps to protect your dental health. The maxilla (upper jaw bone) and mandible (lower jaw bone) are normally covered by gum tissue. In the case of ONJ, this tissue disappears and the bone is exposed. Typical symptoms associated with ONJ are: pain, swelling or infection of the gums, loosening of the teeth, exposed bone (often at the site of a previous tooth extraction). Some patients may report numbness or tingling in the jaw or a "heavy" feeling jaw. ONJ may have no symptoms for weeks or months and may only be recognized by the presence of exposed bone. ONJ most often occurs soon after a dental procedure, though not always. Stop treatment with zoledronic acid at least 3 weeks prior to any dental procedures.
  - Prior to starting therapy, you should have a complete dental exam, cleaning, and removal of any teeth in poor health.
  - Dentures should be checked for proper fit.
  - Brush your teeth after meals and at bedtime with a soft brush. Floss gently once a day. If your gums bleed, talk with your healthcare team to see if you can continue to floss.
  - Check your teeth and gums in a mirror daily for any sores, swelling, loose teeth, pain or numbness, or other changes and report these to your dentist or oncology team immediately.

- **Acute Reaction:** The infusion can cause a reaction that occurs within 3 days of the infusion and may cause chills, fever and muscle aches. Prior to taking any medications, check with your healthcare provider as these can also be signs of infection. If you are able to take anti-inflammatory medications, such as ibuprofen (Motrin) and naproxen (Aleve), they may be helpful in treating these side effects. Reactions are most common during or shortly after the first infusion, but not after subsequent doses.

- **Kidney problems:** This medication can cause kidney problems, including an increased creatinine level, which your oncology care team may monitor for using blood tests. Notify your healthcare provider if you notice decreased urine output, blood in the urine, swelling in the ankles, or loss of appetite.

- **Hypocalcemia:** This medication can lower your calcium levels. Your healthcare team will monitor your calcium levels with blood tests. If you experience muscle cramps or confusion, contact your healthcare team.

Reproductive Concerns
Exposure of an unborn child to this medication could cause birth defects, so you should not become pregnant or father a child while on this medication. Effective birth control is necessary during treatment. Even if your menstrual cycle stops or you believe you are not producing sperm, you could still be fertile and conceive. You should consult with your healthcare team before breastfeeding while receiving this medication.