Bortezomib (Velcade®)

**Pronounced:** bor-TEZ-oh-mib

**Classification:** Proteasome Inhibitor

### About Bortezomib (Velcade®)

Bortezomib works by inhibiting the 26S proteasome. A proteasome is an enzyme that is responsible for breaking down proteins in all cells (healthy or cancerous). By blocking the action of proteasome, protein builds up in the cells and causes them to die, therefore preventing tumor growth.

### How to Take Bortezomib

Bortezomib can be given into a vein (IV, intravenous) or an injection under the skin (subcutaneous). The actual dose is based on your body size and the schedule is dependent on the type of cancer you have.

Certain medications and foods, including green tea, ketoconazole, rifampin, and St. John’s Wort, can interfere with blood levels of bortezomib. Make sure your provider is aware of all the medications, vitamins, and supplements you are taking.

Velcade may cause you to become fatigued, dizzy, pass out, or lower blood pressure when you move from a sitting down to a standing position. Contact your provider immediately, and do not drive or operate machinery if you experience any of these symptoms.

### Possible Side Effects

There are a number of things you can do to manage the side effects of bortezomib. 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 oncology care team 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 saltines, or ginger ale to lessen symptoms.

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

#### Diarrhea

Your oncology care team can recommend medications to relieve diarrhea. Also, try eating low-fiber, bland foods, such as white rice and boiled or baked chicken. Avoid raw fruits, vegetables, whole-grain breads, cereals, and seeds. Soluble fiber is found in some foods and absorbs fluid, which can help relieve diarrhea. Foods high in soluble fiber include applesauce, bananas (ripe), canned fruit, orange sections, boiled potatoes, white rice, products made with white flour, oatmeal, cream of rice, cream of wheat, and farina. Drink 8-10 glasses of non-alcoholic, un-caffeinated fluid a day to prevent dehydration.

#### Low White Blood Cell Count (Leukopenia or Neutropenia)

White blood cells (WBC) are important for fighting infection. While receiving treatment, your WBC count can drop, putting you at a higher risk of getting an infection. You should let your doctor or nurse know right away if you have a fever (temperature greater
than 100.4°F or 38°C), sore throat or cold, shortness of breath, cough, burning with urination, or a sore that doesn't heal.

**Tips to preventing infection:**

- **Washing hands**, both yours and your visitors, is the best way to prevent the spread of infection.
- Avoid large crowds and people who are sick (i.e.: those who have a cold, fever, or cough or live with someone with these symptoms).
- When working in your yard, wear protective clothing including long pants and gloves.
- Do not handle pet waste.
- Keep all cuts or scratches clean.
- Shower or bath daily and perform frequent mouth care.
- Do not cut cuticles or ingrown nails. You may wear nail polish, but not fake nails.
- Ask your oncology care team before scheduling dental appointments or procedures.
- Ask your oncology care team before you, or someone you live with has any vaccinations.

**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.

**Low Platelet Count (Thrombocytopenia)**

Platelets help your blood clot, so when the count is low you are at a higher risk of bleeding. Let your oncology care team know if you have any excess bruising or bleeding, including nose bleeds, bleeding gums or blood in your urine or stool. If the platelet count becomes too low, you may receive a transfusion of platelets.

- Do not use a razor (an electric razor is fine).
- Avoid contact sports and activities that can result in injury or bleeding.
- Do not take aspirin (salicylic acid), non-steroidal, anti-inflammatory medications (NSAIDs) such as Motrin/Advil (ibuprofen), Aleve (naproxen), Celebrex (celecoxib) etc. as these can all increase the risk of bleeding. Please consult with your healthcare team regarding the use of these agents and all over-the-counter medications/supplements while on therapy.
- Do not floss or use toothpicks and use a soft-bristle toothbrush to brush your teeth.

**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.

**Peripheral Neuropathy (Numbness or Tingling in the Hands and/or Feet)**

Peripheral neuropathy is a toxicity that affects the nerves. It causes numbness or a tingling feeling in the hands and/or feet, often in the pattern of a stocking or glove. This can get progressively worse with additional doses of the medication. In some people, the symptoms slowly resolve after the medication is stopped, but for some, it never goes away completely. You should let your oncology care team know if you experience numbness or tingling in the hands and/or feet, as they may need to adjust the doses of your medication.

**Rash**

Some patients may develop a rash, scaly skin, or red itchy bumps. Use an alcohol-free moisturizer on your skin and lips; avoid moisturizers with perfumes or scents. Your doctor or nurse can recommend a topical medication if itching is bothersome. If your skin does crack or bleed, be sure to keep the area clean to avoid infection. Be sure to notify your healthcare provider of any rash that develops, as this can be a reaction. They can give you more tips on caring for your skin.

**Muscle or Joint Pain/Aches and Headache**
Your care team can recommend medications and other strategies to help relieve pain.

**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.

**Decrease in Appetite**
Nutrition is an important part of your care. Cancer treatment can affect your appetite and, in some cases, the side effects of treatment can make eating difficult. Ask your nurse about nutritional counseling services at your treatment center to help with food choices.

- Try to eat five or six small meals or snacks throughout the day, instead of 3 larger meals.
- If you are not eating enough, nutritional supplements may help.
- You may experience a metallic taste or find that food has no taste at all. You may dislike foods or beverages that you liked before receiving cancer treatment. These symptoms can last for several months or longer after treatment ends.
- Avoid any food that you think smells or tastes bad. If red meat is a problem, eat chicken, turkey, eggs, dairy products, and fish without a strong smell. Sometimes cold food has less of an odor.
- Add extra flavor to meat or fish by marinating it in sweet juices, sweet and sour sauce, or dressings. Use seasonings like basil, oregano, or rosemary to add flavor. Bacon, ham, and onion can add flavor to vegetables.

**Less common, but important side effects can include:**

- **Virus Reactivation:** Cold sores and shingles reactivation has been reported with bortezomib; your healthcare team may prescribe you a medication to take to prevent those outbreaks from occurring.
- **Low Blood Pressure:** This medication can cause low blood pressure. Patients should have their blood pressure checked regularly during therapy. Be sure your oncology team knows if you take any medications for high blood pressure.
- **Lung Changes:** This medication may cause acute respiratory distress syndrome (ARDS) or acute diffuse pulmonary disease, including interstitial pneumonia and lung infiltration. Call your healthcare provider if you have shortness of breath, cough, wheezing, or difficulty breathing.
- **Heart Problems:** This medication can cause the development or worsening of, congestive heart failure, decreased left ventricular ejection fraction, and an abnormal heart rhythm called QT prolongation. Notify your healthcare provider if you develop swelling of the feet or ankles, shortness of breath, feel abnormal heartbeats, or if you feel dizzy or faint.
- **Posterior Reversible Encephalopathy Syndrome (PRES):** PRES is a rare, reversible neurological disorder that can occur with the use of bortezomib. Symptoms of PRES include seizure, high blood pressure, headache, confusion, fatigue, confusion, any changes in your vision, or difficulty walking or thinking. If you experience any of these symptoms, contact your care team or go to the emergency room immediately.
- **Tumor Lysis Syndrome:** If there is a large amount of tumor cells in your body prior to treatment, you are at risk for tumor lysis syndrome. This happens when the tumor cells die too quickly and their waste overwhelms the body. You may be given a medication (allopurinol) and IV fluids to help prevent this. If you experience nausea, vomiting, diarrhea, or become lethargic (drowsy, sluggish), notify your oncology team right away.
- **Liver Toxicity:** This medication can cause liver toxicity, which your oncology care team may monitor for using blood tests called liver function tests. Notify your healthcare provider if you notice yellowing of the skin or eyes, your urine appears dark or brown, or you have pain in your abdomen, as these can be signs of liver toxicity.
- **Diabetic Patients:** Diabetic patients who take oral hypoglycemic medications should closely monitor their blood sugar and may require adjustment of their diabetic medications.
- **Damage to Small Blood Vessels:** This medication can cause damage to small blood vessels called thrombotic microangiopathy (TMA), which can result in blood clots. Symptoms of TMA include fever, fatigue, bruising, swelling, confusion, vision loss, and seizures. Report any of these symptoms to your provider right away.

**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 and for 7 months after the end of treatment for women and for 4 months after the end of treatment for men. Even if your menstrual cycle stops or you believe you are not producing sperm, you could still be fertile and conceive. You should not breastfeed while receiving this medication or for 2 months after your last treatment.

OncoLink is designed for educational purposes only and is not engaged in rendering medical advice or professional services. The information provided through OncoLink should not be used for diagnosing or treating a health problem or a disease. It is not a substitute for professional care. If you have or suspect you may have a health problem or have questions or concerns about the medication that you have been prescribed, you should consult your health care provider.