Bevacizumab (Avastin®)

Pronounced: BEV-a-SIZ-oo-mab

Classification: Monoclonal Antibody

About Bevacizumab (Avastin®)

Monoclonal antibodies are created in a lab to attach to the targets found on specific types of cancer cells. The antibody “calls” the immune system to attack the cell it is attached to, resulting in the immune system killing the cell. These antibodies can work in different ways, including stimulating the immune system to kill the cell, blocking cell growth or other functions necessary for cell growth.

Bevacizumab is a monoclonal antibody that binds to and inhibits the activity of vascular endothelial growth factor (VEGF). This prevents the VEGF from interacting with its receptor on endothelial cells (lining of blood vessel). This, in turn, inhibits the formation of new blood vessels, which slows down the growth of the particular tissue. In essence, it kills tumors by cutting off their blood supply.

How to Take Bevacizumab (Avastin®)

Bevacizumab is given by intravenous (IV, into a vein) infusion. The amount of time the infusion will take will depend on your treatment plan and if you tolerate the medication. Dosage depends on the person’s size and type of cancer being treated. How often you receive this medication and what other medications you receive will be determined by your care team.

Possible Side Effects of Bevacizumab (Avastin®)

There are a number of things you can do to manage the side effects of bevacizumab. 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:

High Blood Pressure

Patients receiving bevacizumab can develop high blood pressure (hypertension). Your blood pressure should be monitored at every clinic visit or every 2-3 weeks. If your blood pressure is elevated, you may be treated with a medication to reduce your pressure. If severe hypertension develops, bevacizumab should be discontinued immediately. Your blood pressure should continue to be monitored, even if bevacizumab is stopped. Signs of hypertension to report to your team include: blurry vision, nosebleed, headache and fatigue.

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.

Bleeding

Patients may experience minor bleeding, such as a nosebleed. Serious bleeding has also occurred in patients treated with this medication, including coughing up blood, bleeding into the stomach, vomiting blood, bleeding in the brain (stroke), and vaginal bleeding. People who have had serious bleeding should not take this medication. These events are uncommon, though if they occur, bevacizumab should be discontinued. While a nosebleed may not seem like much of a concern, you should notify your

healthcare team right away if you develop bleeding of any sort.

Less common, but important side effects can include:

- ***Wound Healing:*** This medication can lead to slower or incomplete wound healing, such as a surgical wound not healing or staying closed. Therefore, it is recommended that the medication be discontinued 4 weeks prior to any surgery. In addition, the medication should be held for 28 days after surgery and any surgical incision should be fully healed prior to starting or restarting the medication. If you have a surgical wound that has not healed or begins to have signs of infection (redness, swelling, warmth), report this to your healthcare team.
- ***Kidney Damage:*** Kidney damage can occur while receiving bevacizumab. Your healthcare team will monitor this by periodically checking the amount of protein in your urine. If the protein levels become elevated, you may require further urine tests to evaluate your kidney function. If your kidneys become damaged, you may need to stop receiving this medication
- ***Blood Clots, Stroke and Heart Attack:*** Bevacizumab can increase the risk of blood clots, stroke and heart attack. If you experience symptoms of these problems, you should contact your healthcare provider immediately or go to an emergency room. Symptoms can include: swelling, redness or pain in an extremity, chest pain or pressure, pain in your arm, back, neck or jaw, shortness of breath, numbness or weakness on one side of the body, trouble talking, confusion or mental status changes.
- ***Infusion Reactions:*** The infusion can cause a reaction that may lead to chills, fever, low blood pressure, nausea and vomiting. Reactions are most common during the first week of therapy, including the evening after the infusion. Let your nurse know if you are feeling any different during your infusion.
- ***Gastrointestinal Perforation:*** This medication can cause a tear in the intestinal wall, also called a gastrointestinal perforation. Signs of this can include: new or worsening pain in the abdomen, new abdominal swelling, chills, fever, constipation, nausea or vomiting. If you experience any of these, contact your healthcare provider immediately or go to the emergency room.
- ***Posterior Reversible Encephalopathy Syndrome (PRES):*** In rare cases, this medication has caused a neurological disorder called posterior reversible encephalopathy syndrome (PRES), also called reversible posterior leukoencephalopathy (RPLS). Symptoms of PRES/RPLS include headache, seizure, lethargy, confusion, blindness and other visual and neurological disturbances. Report any of these symptoms to your healthcare team immediately.
- ***Fistula:*** A possible, but rare, side effect is the development of a fistula, which is an abnormal passage between two body parts (for instance, a hole between the lung and esophagus).
- ***Congestive Heart Failure (CHF):*** Bevacizumab can cause or worsen pre-existing heart problems, including congestive heart failure. Notify your healthcare provider if you have sudden weight gain or swelling in the ankles or legs. If you develop chest pain or pressure, sweating, shortness of breath, nausea, dizziness or lightheadedness, call 911 or go to the nearest emergency room.

Sexual & Reproductive Concerns

This drug may affect your reproductive system, resulting in the menstrual cycle or sperm production becoming irregular or stopping permanently. Women may experience menopausal effects including hot flashes and vaginal dryness. In addition, the desire for sex may decrease during treatment. You may want to consider sperm banking or egg harvesting if you may wish to have a child in the future. Discuss these options with your oncology team.

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 at least 6 months after treatment, even if your menstrual cycle stops or you believe you are not producing sperm. You may want to consider sperm banking or egg harvesting if you may wish to have a child in the future. Discuss these options with your oncology team. You should not breastfeed while taking this medication and for 6 months after treatment.

Current Biosimilars

There are biosimilar versions of bevacizumab. A biosimilar is a medication that has been approved by the FDA because it is very similar to an FDA-approved medication (called a reference product, or the medication it is being compared to), and that

there are no meaningful differences between the biosimilar product and the reference product. These medications may be used interchangeably.

The biosimilar versions of this medication include bevacizumab-awwb (Mvasi) and bevacizumab-bvzr (Zirabev®).
