



Bevacizumab

What names may be used for this medication?

Bevacizumab, Avastin, Mvasi; this is “novel therapeutic” in the anti-VEGF category

How and why is this medicine given?

Bevacizumab is given by an intravenous (IV) infusion (a slow drip through a needle into your port or through a vein in your arm or hand) to treat many different types of cancers. We use it most commonly in our office for the treatment of cervical and ovarian cancer, but it is actively being studied and appears to hold promise for other gynecologic cancers. It may be used by itself or combined with other chemotherapy drugs.

How does the medicine work?

Bevacizumab is an antibody that binds to VEGF (vascular endothelial growth factor). There are multiple different forms of VEGF in humans, and bevacizumab binds to all of them. This binding prevents VEGF from binding to its normal target site, which ultimately prevents blood vessel formation. This lack of new blood vessels prevents the cancer from getting appropriate nutrients, and thus the cancer dies. Since cancer cells tend to over express the VEGF molecules and target sites, bevacizumab tends to have most of its effect on tumors and not on normal tissues. However once VEGF molecules are bound up with bevacizumab, they cannot bind to

target sites on neither cancer cells nor good cells. This means that all cells are susceptible to the anti-VEGF properties of bevacizumab. The side effects you experience from bevacizumab are due to these circumstances, but fortunately your body's normal cells are better equipped to overcome this limitation of VEGF availability. The metabolism and clearance from your body of bevacizumab has not been well characterized.

How often is this medicine given?

Bevacizumab is typically given once every 3-4 weeks (every 21-28 days) for gynecologic cancers. The total number of treatments recommended will vary based on your clinical circumstances, but an initial plan will be outlined for you by your doctor. The infusions are given in the infusion center at the Cancer & Research Center (white building located across the parking lot from our office). Prior to each treatment, you will be seen in the office for an exam, and blood tests will be reviewed to be sure it is safe to administer your next treatment. Urine tests will also be periodically required. It is, of course, very important to keep all of your appointments for chemotherapy and lab testing.

What side effects does this medicine cause?

There are many possible side effects of all chemotherapy drugs, so the following is only inclusive of the most common or serious possibilities from bevacizumab. You will be asked to complete a symptom form at each visit in order for us to accurately assess the side effects that you may be experiencing. This form helps your doctor be sure that no adverse effects of treatment are overlooked, and it serves to help you recall which symptoms you may have experienced since your last treatment.

- ❖ Allergic reactions to bevacizumab can occur, but are uncommon. This typically presents during the initial few minutes of an infusion with a rash/hives, itching, lowered blood pressure, and occasional difficulty breathing. You will be given medications prior to your infusion to minimize the chance of this occurring.
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- ❖ Flu-like symptoms with headache, myalgias and arthralgias (aches and pains in the muscles and joints), and fatigue are sometimes experienced for a few days to a week following a bevacizumab infusion. Over the counter agents such as ibuprofen and acetaminophen typically provide adequate relief, but prescription pain medicine can be given if needed.
 - ❖ Generalized weakness (*asthenia*) is one of the most common side effects associated with bevacizumab. It is short-lived and typically mild.
 - ❖ Nausea and vomiting are uncommon and only mild when they occur. You will be given prescriptions for medications for nausea, and it is important that you take them as directed in order for them to be most effective. If you have questions, do not hesitate to call the office.
 - ❖ Nose bleeds may be seen more frequently while taking bevacizumab. Use gentle tissues, and if such occurs, pressure on the nose (pinch the bridge of nose between thumb and forefinger) and/or ice to the roof of your mouth may help stop the bleeding. If the bleeding does not stop with these measures in 15 minutes, you should report to your nearest emergency room.
 - ❖ Diarrhea is sometimes seen with bevacizumab, and may last for several days. Over the counter anti-diarrhea medications are usually adequate at controlling these symptoms.
 - ❖ Dry skin or peeling skin may be seen with bevacizumab. A rash may also develop, especially on the face.
 - ❖ *Mucositis* is sores/ulcers in the mouth that can cause pain and difficulty eating or swallowing. This is rare but can occur with bevacizumab. This can be minimized with good oral hygiene and a warm salt-water solution gargled after each meal. Prescription medication is also available if these steps are ineffective at resolving your symptoms.
 - ❖ Bevacizumab increases the risk of blood clots forming in arteries, which may lead to stroke or heart attack. Be sure your doctor is aware if you have ever had any problems with your heart or have a history of stroke or peripheral vascular disease.
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- ❖ Bevacizumab should not be given to patients who have had a surgical procedure within the past month as it can result in delayed healing, wound disruption, and bleeding. The safest time to perform surgery after stopping bevacizumab has not been determined, but we try to postpone any surgery for 4 weeks if the procedure is not an emergency. Keep this in mind when considering dental work or other minor procedures while receiving bevacizumab.
 - ❖ Bevacizumab has been associated with bowel perforation in some patients with ovarian cancer (<5% risk).
 - ❖ Kidney damage with excessive spillage of protein into the urine can be seen with bevacizumab. If this occurs, it may be necessary to stop the medication.
 - ❖ You may develop high blood pressure or have worsening of pre-existing high blood pressure while taking bevacizumab. If this is unable to be controlled, the bevacizumab will need to be discontinued.
 - ❖ Hair loss is not common with bevacizumab.
 - ❖ Bevacizumab may cause problems with fertility. You may develop menstrual irregularities while receiving bevacizumab, but these should return to normal after stopping treatment. Your doctor will discuss this in more detail if applicable to you.
 - ❖ If you are pregnant or become pregnant during therapy, you should notify your doctor immediately.

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