OncoLink
Abramson Cancer Center of the University of Pennsylvania

Docetaxel (Taxotere®)

Pronounced: DOE-se-TAX-el
Classification: Antineoplastic Agent

About Docetaxel

Docetaxel works by disrupting the microtubular network in cells, which is essential for cell division and other normal cellular functions. Docetaxel interferes with the function of microtubules, resulting in inactive microtubule bundles, causing cells to die.

How to Take Docetaxel

Docetaxel is given by intravenous (IV, into a vein) infusion, over an hour. The dosage and schedule is determined by the person's size and type of cancer. It can be given alone or with other drugs. You will be given a corticosteroid to take for 3 days prior to the infusion to prevent the severity of fluid retention and allergic reactions.

Possible Side Effects of Docetaxel

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

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), 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 doctor or nurse before scheduling dental appointments or procedures.
- Ask your doctor or nurse before you, or someone you live with, has any vaccinations.

For more suggestions, read the Neutropenia Tip Sheet.

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 doctor or nurse 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. Read the anemia tip sheet for more information.

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 doctor or nurse know if you have any excess bruising or bleeding, including nosebleeds, bleeding gums or blood in your urine or stool. If your platelet count becomes too low, you may receive a transfusion of platelets.

- Do not use a razor to shave (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®, Aleve®, Advil®, etc. as these can all increase the risk of bleeding. Unless your healthcare team tells you otherwise, you may take acetaminophen (Tylenol).
- Do not floss or use toothpicks and use a soft-bristle toothbrush to brush your teeth.

Read the thrombocytopenia tip sheet for more information.

Flu-Like Symptoms

You may develop fever, chills, muscle aches, and fatigue. Your doctor or nurse can recommend a mild pain reliever, such as acetaminophen or ibuprofen, to relieve these symptoms. These symptoms may last several days after treatment.

Fluid Retention

Call your doctor or nurse if you do not urinate for more than 12 hours, experience shortness of breath, have an unexpected weight gain or your hands, feet or legs become swollen. Medications will be given before each treatment to decrease this side effect.

Mouth Ulcers (Sores)

Certain cancer treatments can cause sores or soreness in your mouth and/or throat. Notify your doctor or nurse if your mouth, tongue, inside of your cheek or throat

becomes white, ulcerated or painful. Performing regular mouth care can help prevent or manage mouth sores. If mouth sores become painful, your doctor or nurse can recommend a pain reliever.

- Brush with a soft-bristle toothbrush or cotton swab twice a day.
- Avoid mouthwashes that contain alcohol. A baking soda and/or salt warm water mouth rinse (2 level teaspoons of baking soda or 1 level teaspoon salt in an eight ounce glass of warm water) is recommended 4 times daily.
- If your mouth becomes dry, eat moist foods, drink plenty of fluids (6-8 glasses), and suck on sugarless hard candy.
- Avoid smoking and chewing tobacco, drinking alcoholic beverages and citrus juices.

Read the mouth ulcer tip sheet for more information.

Decrease in Appetite

Visit OncoLink's section on Nutrition for tips on dealing with this side effect. Ask your nurse about nutritional counseling services.

- 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 dislike foods or beverages that you liked before receiving chemotherapy. These symptoms can last up to several months.
- 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.
- Flavor meat or fish by marinating it in sweet juices, sweet and sour sauce or dressings. Use seasonings like basil, oregano or rosemary. Bacon, ham and onion can also add flavor to vegetables.

Nail and Skin Changes

Your fingernails/toenails may become dark, brittle or fall off. You may notice dry skin or changes in the color or tone of your skin. Your skin will be more sensitive to the sun, which can result in severe sunburn or rash. Sun sensitivity can last even after chemotherapy is completed. Avoid the sun between 10-2pm, when it is strongest. Wear sunscreen (at least SPF 15) everyday; wear sunglasses, a hat and long sleeves/pants to protect your skin. Keep your fingernails and toenails clean and dry. You may use nail polish, but do not wear fake nails. Notify your doctor or nurse if any nails fall off. For more suggestions, read the Nail and Skin Care Tip Sheet.

Loss or Thinning of Scalp and Body Hair (Alopecia)

Your hair may become thin, brittle, or may fall out. This typically begins two to three weeks after treatment starts. This hair loss can be all body hair, including pubic, underarm, legs/arms, eyelashes, and nose hairs. The use of scarves, wigs, hats and hairpieces may help. Hair generally starts to regrow soon after treatment is completed. Remember your hair helps keep you warm in cold weather, so a hat is particularly important in cold weather or to protect you from the sun. Read more on alopecia.

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

Peripheral neuropathy is a toxicity that affects the nerves. It causes a numbness or tingling feeling in the hands and feet, often in the pattern of a stocking or glove. This can get progressively worse with additional doses of the drug. In some people, the symptoms slowly resolve after the drug is stopped, but for some it never goes away completely. You should let your healthcare provider know if you experience numbness or tingling in the hands and feet, as they may need to change the doses of your medication. See OncoLink's section on peripheral neuropathy for tips on dealing with this side effect.

Nausea and/or Vomiting

Take anti-nausea medications as prescribed. If you continue to have nausea or vomiting, notify your doctor or nurse so they can help you manage this side effect. 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. Read the Nausea & Vomiting Tip Sheet for more suggestions.

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.

Other Side Effects

Other less common side effects that have been reported include: allergic-type reaction, blood pressure and heart changes, diarrhea, sexual/reproductive changes, and liver changes.

Carboplatin (Paraplatin®)

Pronounced: car-boe-PLATT-in
Classification: Platinum Coordination Complex

About Carboplatin

Carboplatin is a heavy metal compound that inhibits synthesis of RNA, DNA, and protein in cells. All of these compounds are vital for cells to divide and grow. By preventing them from dividing, the medication can stop the cancer from growing.

How to Take Carboplatin

Carboplatin is given by intravenous (IV, into a vein) injection. The schedule and dosage is based on the person's size and the cancer type being treated. It can be given alone or with other drugs.

Possible Side Effects of Carboplatin

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

Talk to your doctor or nurse about these recommendations. They can help you decide what will work best for you. These are some of the most common side effects:

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), sore throat or cold, shortness of breath, cough, burning with urination, or a sore that doesn't heal.

Tips to preventing infection:

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- 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 doctor or nurse before scheduling dental appointments or procedures.
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For more suggestions, read the Neutropenia Tip Sheet.

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- Do not use a razor to shave (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®, Aleve®, Advil®, etc. as these can all increase the risk of bleeding. Unless your healthcare team tells you otherwise, you may take acetaminophen (Tylenol).
- Do not floss or use toothpicks and use a soft-bristle toothbrush to brush your

teeth.

Read the thrombocytopenia tip sheet for more information.

Nausea and/or Vomiting

Take anti-nausea medications as prescribed. If you continue to have nausea or vomiting, notify your doctor or nurse so they can help you manage this side effect. 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. Read the Nausea & Vomiting Tip Sheet for more suggestions.

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.

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Kidney Changes

Your doctor may order blood tests to check your kidney function. Intravenous fluids are given with the chemotherapy to flush your kidneys and increase your urine output. Try to drink at least 6-8 glasses of uncaffienated fluids a day. Call your doctor or nurse if you do not urinate for more than 12 hours.

Hearing Loss

Carboplatin can affect your hearing. Call your doctor or nurse if you have ringing in your ears or if you notice a decrease in your hearing.

Mouth Ulcers (Sores)

Certain cancer treatments can cause sores or soreness in your mouth and/or throat. Notify your doctor or nurse if your mouth, tongue, inside of your cheek or throat becomes white, ulcerated or painful. Performing regular mouth care can help prevent or manage mouth sores. If mouth sores become painful, your doctor or nurse can recommend a pain reliever.

- Brush with a soft-bristle toothbrush or cotton swab twice a day.
- Avoid mouthwashes that contain alcohol. A baking soda and/or salt warm water mouth rinse (2 level teaspoons of baking soda or 1 level teaspoon salt in an eight ounce glass of warm water) is recommended 4 times daily.
- If your mouth becomes dry, eat moist foods, drink plenty of fluids (6-8 glasses), and suck on sugarless hard candy.

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Read the mouth ulcer tip sheet for more information.

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Liver changes

Your doctor may order some blood tests to check your liver function. Call your doctor or nurse immediately if you have abdominal pain, your urine becomes dark or if your skin or the whites of your eyes become jaundiced (yellow in color).

Bevacizumab (Avastin™)

Pronounced: BEV-a-SIZ-oo-mab
Classification: Monoclonal Antibody

About Bevacizumab

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

Bevacizumab is given by intravenous (into a vein) infusion. The treatment is delivered over 90 minutes for the first infusion. If that dose is well tolerated, the second infusion

can be administered over 60 minutes. If this is well tolerated, subsequent infusions can be given over 30 minutes. Dosage depends on the person and type of cancer being treated.

Bevacizumab is usually given at the same time as other chemotherapy medications. Therefore, this should be kept in mind as the side effects are reviewed.

Possible Side Effects of Bevacizumab

Bevacizumab has the potential to cause several serious side effects. There are some things you can do to manage the more common side effects of Bevacizumab. Talk to your doctor or nurse about these recommendations. They can help you decide what will work best for you.

Hemorrhage (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), nosebleeds 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.

Hypertension (High Blood Pressure)

Patients receiving bevacizumab can develop high blood pressure. Your blood pressure should be monitored at every clinic visit or every 2-3 weeks. If your blood pressure is elevated, you will be treated with a medication to reduce your pressure. If severe hypertension develops, bevacizumab should be discontinued immediately. In both cases, 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.

Gastrointestinal Perforation

Bevacizumab can result in a serious, sometimes fatal, problem called gastrointestinal perforation, which is the development of a hole in the stomach or small or large intestine. If you develop abdominal pain, nausea, vomiting, constipation or fever, you should notify your healthcare team immediately.

Poor Wound Healing

Bevacizumab can lead to slower or incomplete wound healing, such as a surgical wound not healing or staying closed. Therefore, it is recommended that bevacizumab not be given within at least 28 days before or after surgery. In addition, any surgical incision should be fully healed prior to starting bevacizumab. If you notice that your surgical wound 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.

Additional Rare, But Serious, Side Effects

Stroke or heart problems, including blood clots, heart attack and chest pain, can occur. Bevacizumab should be stopped if these occur. 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).

Diarrhea

Your oncology 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 that absorbs fluid and can help relieve diarrhea. Foods high in soluble fiber include: applesauce, bananas (ripe), canned fruit, orange and grapefruit sections, boiled potatoes, white rice and products made with white flour, oatmeal, cream of rice, cream of wheat, and farina. Drink 8-10 glasses on non-alcoholic, un-caffeinated fluid a day to prevent dehydration. ReadLow Fiber Diet for Diarrhea for more tips.

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For more suggestions, read the Neutropenia Tip Sheet.

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