Epirubicin (Ellence®, Pharmorubicin®)

**Pronounced:** EH-pih-ROO-bih-sin

**Classification:** Anthracycline

**About Epirubicin (Ellence®, Pharmorubicin®)**

Anthracyclines work by interrupting the copying of DNA, which is necessary for cancer cell growth. This causes the cancer cells to die, slowing or stopping tumor growth.

Epirubicin interferes with the replication of DNA and the synthesis of RNA in cancer cells. Without these essential compounds, cancer cells cannot grow and divide, making it easier for the body to kill them. The exact way epirubicin works is not fully understood.

**How to Take Epirubicin**

Epirubicin is given through intravenous (IV, into a vein) infusion or injection. It can be given alone or with other drugs. The dosage and schedule are determined by the person's size, type of cancer, and mode of administration.

Even when carefully and correctly administered by trained personnel, this drug may cause a feeling of burning and pain. There is a risk that this medication may leak out of the vein at the injection site, resulting in tissue damage that can be severe. If the area of injection becomes red, swollen, or painful at any time *during or after* the injection, notify your care team immediately. Do not apply anything to the site unless instructed by your care team.

Cimetidine (Tagamet) can interfere with the medication and should be avoided. Make sure your provider is aware of all the medications, vitamins and supplements you are taking.

This medication is red and your urine may appear orange or reddish in color for 1-2 days after the infusion. This is not blood. This is expected as the medication is cleared from your body. If the red urine continues past two days or if you have other urinary symptoms, such as frequency or painful urination, call your healthcare provider.

**Possible Side Effects of Epirubicin**

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

**Heart Problems**

In rare cases, the heart muscle can be damaged by this medication, causing heart failure and cardiomyopathy. This heart damage can occur during therapy or many months to years after treatment. The risk is highest at higher doses, in patients who receive other cardio-toxic medications, radiation to the chest area, and in children. There is a maximum lifetime dose that you can receive of this medication. Your doctor may order tests to check your heart function before you begin treatment or if any symptoms arise.

It is important that you report immediately to your healthcare provider any shortness of breath, cough, ankle swelling, chest pain, rapid or irregular heartbeats.

**Secondary Cancers**
A secondary cancer is one that develops as a result of cancer treatment for another cancer. This is quite rare, but you should be aware of the risk. In most cases, a secondary cancer related to chemotherapy is a blood cancer (leukemia, lymphoma). This can occur years after treatment. This is most often associated with repeated treatments or high doses. Your provider will monitor your labs closely. Consider having a complete blood count with differential checked annually by your healthcare provider if you received high risk therapies.

**Infection and Low White Blood Cell Count (Leukopenia or Neutropenia)**

This medication can cause life threatening infections, with or without a decrease in white blood cell counts. 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 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.

**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.

**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.

**Mouth Ulcers (Mucositis)**

Certain cancer treatments can cause sores or soreness in your mouth and/or throat. Notify your oncology care team 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 with warm water mouth rinse (2 level teaspoons of baking soda or 1 level teaspoon of 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.

**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 on non-alcoholic, un-caffeinated fluid a day to prevent dehydration.

**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.

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

- **Tumor Lysis Syndrome:** If there are 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. TLS can affect your kidney function. Your provider will monitor your kidney function with blood work. Notify your provider if you have little or no urine output.
- **Radiation Recall:** Radiation recall is when the administration of a medication causes a skin reaction that looks like a sunburn (redness, swelling, soreness, peeling skin) in areas where radiation was previously given. Notify your oncology team if you notice this side effect. Treatment can include topical steroid ointments and a delay in your next chemotherapy dose.
- **Blood Clots:** This medication can increase the risk of blood clots (DVT or PE). Symptoms can include: swelling, redness or pain in an extremity, or shortness of breath. If you experience symptoms of these problems, you should contact your healthcare provider immediately or go to an emergency room.

**Live Vaccines**

You, or anyone you live with, should avoid having live or live-attenuated vaccines while receiving this medication. These include herpes zoster (Zostavax) for shingles prevention, oral polio, measles, nasal flu vaccine (FluMist®), rotovirus and yellow fever vaccines.

**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.

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. For women, effective birth control is necessary during treatment and for 6 months after your last dose. For men, effective birth control is necessary during treatment and for 7 days after your last dose. Even if your menstrual cycle stops or you believe you are not producing sperm, you could still be fertile and conceive. 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 7 weeks after your last dose.