

Chemotherapy for Breast Cancer - General

Introduction

Breast cancer is a common condition that affects one out of every 11 women. Your doctor has recommended chemotherapy for your breast cancer. Chemotherapy includes powerful drugs that kill or control the growth of cancer cells.

This reference summary will help you understand better the benefits and risks of chemotherapy.

Cancer and Its Causes

The body is made up of very small cells. Normal cells in the body grow and die in a controlled way. Cancer occurs when cells keep dividing and growing without the normal control. Cancer cells may also spread to different parts of the body through blood vessels and lymph channels. Cancer treatments are used to kill or control these abnormally growing cells.



Cancers in the body are given names, depending on where the cancer originates. Cancer that begins in the lung will always be called a lung cancer, even if it has spread to another place such as the liver, bone, or brain. The cause of a cancer in a patient cannot usually be specifically determined. Each cell contains hereditary or genetic materials called chromosomes. This genetic material controls the growth of the cell.

Cancer always arises due to changes that occur in this genetic material. When the genetic material in a cell becomes abnormal, it loses its ability to control the growth of the cell. These sudden changes in genetic material can occur for a variety of reasons. They may be inherited from parents. Changes in genetic materials may also occur due to exposure to specific infections, drugs, tobacco, or other factors.

Breast Cancer

Breast cancer occurs in women after puberty and becomes more common as women age. Breast cancer may also occur in men. However, this is rare.

Hormones are chemicals in the body that help regulate body functions. For instance, the hormone estrogen helps control menstrual periods in women. Breast cancer is sometimes influenced by hormones. Some patients take medicine that gives them additional hormones. These hormonal medications may also affect breast cancer. For this reason, your doctor will want to know information about your menstrual periods and any hormone medications you may have taken.

Early forms of breast cancers do not spread to other parts of the body. These early forms have been found more frequently in the last several years because of the use of breast x-rays, also known as mammograms.



Mammogram

Stages of Cancer

Once the cancer is found, it is important to determine how much the cancer has grown. It is also important to determine if the cancer has spread to other parts of the body. These two pieces of information help your doctor determine the “stage of the cancer”. This stage is used to determine the treatment that will be recommended.

Your breast cancer was carefully analyzed by a pathologist. The pathologist is a doctor who examines a sample of your cancer under the microscope and performs special tests to help determine whether treatment with hormonal medication is recommended. Your doctor will tell you in what stage your cancer is in.

Treatment after Surgery

Surgery helps remove lumps of cancer. However, it may not be possible to remove or kill every cancer cell. Cells are very small. One million cells can be the size of a ballpoint on the end of a pen. One million cancer cells would also easily fit within the eye of a common sewing needle.

Even with the most advanced equipment, cancer cells that cannot be seen or felt may be left behind after surgery. For this reason, your doctor may recommend additional treatments after



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surgery. These are known as adjuvant treatments. Adjuvant treatments may include further surgery. Adjuvant treatments also include radiation therapy.

In addition, adjuvant treatments include drug therapies. Drug therapies may include:

- Hormones,
- Chemotherapy,
- Biologic therapy.

These additional treatments reduce the risk that the cancer may recur. However, they do not guarantee it. For this reason, your doctor will want to continue to follow you in the months and years ahead; even after the adjuvant treatments have ended. If the cancer should recur, additional treatment may be used.

Chemotherapy

Your doctor has recommended chemotherapy for your breast cancer. Chemotherapy includes powerful drugs that kill or control the growth of cancer cells. The chemotherapy that your doctor recommends for you is very specific to your type of cancer.

Cancer patients have different experiences with chemotherapy. Therefore, it is hard to compare what effects the chemotherapy may have on you. Chemotherapy may have different effects on different patients. Following chemotherapy, your doctor will make appointments to follow up with you regularly.



Treatment

Your doctor has chosen a combination of Adriamycin[®], Cytoxan[®], and Tamoxifen to reduce the chances of breast cancer recurrence. Adriamycin and Cytoxan are given intravenously. This will involve having a needle inserted into a vein, usually in the arm. The liquid chemotherapy will flow into your body through this needle over several minutes. This treatment will be given one time every three weeks for a total of four treatments.

The following sections will review the risks of chemotherapy in general and the side effects of drugs your doctor recommended for you.

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Risks and Side Effects of Chemotherapy

The side effects from chemotherapy are usually not life threatening, but can be temporarily uncomfortable. Most of the side effects will last only a matter of hours. There may be rare effects that could persist in the body for many years. However, serious long-term consequences are relatively unusual.



Women who are having periods may have their periods become irregular or stop during or after chemotherapy.

An early menopause may occur. Sometimes, however, the periods may begin again during or after chemotherapy. It is very important that women discuss the need for birth control with their doctors.

Chemotherapy may also cause some damage in the chromosomes in both men and women. Your doctor recommends that you do not have children for a period of months or years during and after chemotherapy.

Adriamycin

Adriamycin is a chemotherapy drug. Its generic name is doxorubicin. Adriamycin is given intravenously. Adriamycin can cause a number of side effects and usually results in patients losing their hair several weeks after the chemotherapy has begun. The hair eventually will grow back, but will do so slowly, and may not be as full as it was initially.



Adriamycin can lower the number of white blood cells in the body. White blood cells help fight infections. This low white blood cell count may begin several days after the drug is administered and may persist for several days.

Because the number of white blood cells is lower, the body's ability to fight infections is reduced. That is why patients should notify their doctors if any signs of infection occur.

Signs of infection include:

- Fever,
- Chills,
- Earache,

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- Headache,
- Cough,
- Burning in the urine,
- General symptoms of sudden illness.

Serious infections can be life threatening. That is why you should immediately inform your doctor if you notice any signs of infections. Except for the possible infections, other side effects of Adriamycin are rarely life threatening.



Your doctor will draw blood for laboratory testing to measure your white blood cell count during your treatments. This will assist your doctor in monitoring for possible infections and in determining the appropriate drug strength.

Adriamycin can also cause weakness, fatigue, and occasionally can make your mouth sore. If your mouth or throat does become extremely sore, you should contact your doctor. Rinsing with a glass of water with a teaspoon of salt will often help. Adriamycin can produce damage to the heart muscle if given in very high doses or given over a long period of time. Your doctor may wish to perform tests on the heart before and/or after treatment with Adriamycin.

Adriamycin is colored red and may cause your urine to briefly turn red several hours after the drug has been given. This is of concern only if the discoloration of the urine persists for more than 24 hours after the drug is given.

Cytoxan

Cytoxan is a chemotherapy drug. It is also called cyclophosphamide. Cytoxan can be given either by injection through the vein or in pill form. Your doctor will determine the type of Cytoxan that is best for your cancer. Cytoxan can also lower the number of white blood cells in the body. White blood cells help fight infections. This low count of white blood cells may begin several days after the drug is administered and persist for several days.

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In the body, Cytoxan can produce chemicals that irritate the bladder. For this reason, it is important for you to drink extra fluids and empty your bladder more frequently for 24 hours after receiving this drug. This will help prevent bladder irritation. Any blood in the urine should be promptly reported to your doctor.

Cytoxan can also cause weakness, fatigue, mouth sores, and diarrhea. If your mouth or throat does become extremely sore, you should contact your doctor. Rinsing with a glass of water with a teaspoon of salt will often help.

Tamoxifen

Tamoxifen is a form of hormone treatment. It is also called Nolvadex®. Tamoxifen is given in pill form. Its side effects are usually mild. The most common effect is sudden feelings of sweats, flushing or warmth often called hot flashes. These episodes may occur as often as several times a day but usually occur less often over a period of months or years.



Tamoxifen will often, but not always, stop the function of the ovaries and may stop a woman's menstrual periods. You should use some method of birth control while taking Tamoxifen even if the periods have stopped. Tamoxifen could sometimes upset

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stomach the first few days it is taken. This usually goes away even if the medication is continued.

Women who take Tamoxifen have a slightly higher risk of blood clots. This risk is similar to the risk taken by women on birth control pills or estrogen hormones after their menopause. There are slightly higher risks of cancer of the uterus in women who are taking or have taken Tamoxifen. However, this risk is rare. It is still important that women have regular pelvic exams and pap smears unless they have had the uterus removed. Tamoxifen seems to also increase the risk of strokes.

Recent studies have shown that some medications, especially some antidepressants, may decrease the effectiveness of Tamoxifen. Check with your doctor to make sure you are not taking any medication that will make Tamoxifen less effective.



Summary

Special treatment is needed to kill cancer cells that cannot be seen or removed by surgery. Chemotherapy is the usage of powerful drugs to kill cancer cells remaining in the body or to limit their growth. Chemotherapy as well as other adjuvant treatments reduce the risk that the cancer may ever come back, but they do not guarantee a cure.

The chemotherapy that your doctor recommends for you is specific to your type of cancer.

Chemotherapy drugs have some side effects and risks. Knowing about them will help you detect and treat them early if they happen.



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