

FROM THE TOWER HEMATOLOGY ONCOLOGY STAFF:

In this booklet, you will find information that will help you to better understand chemotherapy and the treatment process. The oncology staff in our office will make every effort to lessen your concerns, to make you feel comfortable, and to answer any questions you may have regarding your treatment.

While we have attempted to address many of the questions and concerns of our patients there will undoubtedly be questions not addressed. Please use the space provided at the end of this booklet to write down any additional questions you may have for your doctor.

Please recognize that communication with your doctor, the oncology staff, and with family members will be very important throughout your treatment.

HOW IS CANCER TREATED?

There are four major cancer treatments: surgery, chemotherapy, radiation and immunotherapy. When deciding which treatment is best, the doctor considers the type of cancer, location of the cancer, and important medical facts. Surgery, chemotherapy, radiation and immunotherapy are all useful in controlling cancer. Sometime, one type of treatment is used alone; at other times, a combination is used.

WHAT IS CHEMOTHERAPY?

Chemotherapy is the treatment of a disease by drugs and medicines. Chemotherapy is a remarkable development of modern medicine, which prolongs or saves lives of the millions of cancer patients each year.

HOW IS CHEMOTHERAPY GIVEN?

Chemotherapy is given in several different ways. The three most common methods are: orally or by mouth, intravenously by infusion into a vein (IV) and intramuscularly by injection (IM). Your type of treatment will depend on the location of the cancer and what type of drugs the doctor chooses.

The drug travels through the bloodstream to the tumor to kill those cells that are growing out of control. Chemotherapy may not always cure the cancer, but in many cases it stops its growth and/or reduces its size. If you take the drug in pill form, its gets into the blood by being absorbed through the lining of your stomach. An IV or intravenous infusion sends the drug directly into the bloodstream, and an IM or intramuscular injection sends it to the bloodstream through the muscle.

When the chemotherapy is given intravenously (IV), some of the chemicals have a strong effect on your veins and can irritate the tissue. For this reason, your doctor or nurse may suggest the implantation of a central venous catheter, which may ease the administration of the drugs.

WHAT IS A CENTRAL LINE AND WHEN WOULD YOU NEED ONE?

A central line is a device that is inserted into a vein and can remain there for months or years. This allows easy access to your veins and prevents frequent needle sticks. You may need a central line if it is difficult to find a vein for your treatment or you are getting a continuous infusion of a medication or frequent treatments requiring a series of lab tests etc. There are many different kinds of central lines. If you are advised to get one, the options can be discussed further with your doctor or nurse.

WHEN YOU COME FOR TREATMENT...

Remember to wear comfortable clothing and something that makes it easy for the nurse to access your veins or central line if you have one. Bring something you enjoy to help pass the time such as books, tapes, music etc. Plan on having someone drive to and from your treatment until you know how it affects you, or you feel certain you can safely drive yourself.

The environment where you receive treatment is an open area and you may find yourself talking with other patients who are receiving treatment at the same time. Remember that your doctor prescribed your treatment for your individual set of circumstances and your disease.

Eat a light meal before your treatment, and bring a snack if you will be with us for several hours. Contrary to common belief patients seldom get sick during treatment.

It is recommended that for 24 hours after receiving chemotherapy that you flush the toilet twice when you go to the bathroom. This helps to effectively eliminate any chemotherapy drug excreted in the urine or stool.

HERBAL MEDICINES:

There are many medicines and vitamins available to you today. Some of them are very helpful and some of them may actually inhibit the effectiveness of your cancer treatment. It is very important that you check with your doctor or nurse before continuing with or starting any herbal remedies during your treatment.

THE IMPORTANCE OF BLOOD TESTS!

Blood tests are necessary throughout your treatment. Your blood count informs us about your overall condition and also about the effectiveness of the chemotherapy. The bone marrow is where your body makes white blood cells that fight infection, red blood cells that prevent anemia, and platelets that help to clot blood and promote healing. Bone marrow cells grow very rapidly in order to maintain adequate levels of blood cells in the body. As a result, these cells are especially sensitive to chemotherapy. At some time during treatment, blood cell counts may become abnormally low. This is temporary and occasionally may require treatment to be postponed until blood counts have recovered to acceptable levels.

BLOOD TESTS, continued:

White blood cells guard your body by fighting the germs that cause infection. The white blood cells are produced in the marrow of your large bones. Most chemotherapy affects the bone marrow and its ability to produce white blood cells. To help the bone marrow, chemotherapy is given in cycles so that new white blood cells can be produced to replace those that were destroyed during therapy. The neutrophils (also called granulocytes) are the portion of the white blood count that fights infection; this is recorded in the lab test as the ANC (absolute neutrophil count) or AGC (absolute granulocyte count). If your white count or ANC become too low, your doctor may need to postpone treatment for a period of time or give smaller doses of chemotherapy.

Therefore, it is very important for your doctor to monitor your white blood cell count. It is also necessary for your doctor to obtain information about your red blood cell count, as well as your platelets, which are discussed in the following pages. If your white blood cell count is low, you are at increased risk of infection, and the following is recommended:

- Avoid exposure to crowds and people who have a cold, flu or a contagious illness.
- Avoid enemas, suppositories, or vaginal tampons.
- Practice good personal and general hygiene by:
 - Routine mouth care
 - Washing hands before eating and after using the bathroom.
 - Using lotions if skin is dry to prevent breaks in skin.

Any of the following symptoms may be indicative of an infection and should be reported immediately:

- A progressive increase of fever and over 100.5°
- Chills
- Diarrhea for more than two (2) days
- A burning feeling when urinating
- Persistent cough

Red blood cells carry oxygen to the tissue in the body. If your red blood cell count is low, the body tissue does not get enough oxygen to do its work. This is called anemia. You may experience any of the following symptoms:

- Tiredness
- Dizziness
- Extreme weakness
- Chills
- Shortness of breath

It is important that you report these symptoms to your doctor or nurse. In some cases, it may be necessary to treat you to build up the red blood cell count.

BLOOD TESTS, continued:

Platelets help make your blood clot so that you do not bleed too much if you have a cut. If there are not enough platelets, bleeding may become abnormal and dangerous. Please report the following symptoms to your doctor or nurse:

- Spontaneous bleeding from gums, nose, sputum, blood in the urine or bowel movements
- Easy bruising or red dots in your upper or lower extremities

The following are some things you can do to reduce your risk of bleeding associated with a low platelet count:

- Avoid sharp objects
- Do not use any medication containing aspirin or NSAID's such as Advil.
- Prevent hand injuries or burns
- Wear protective gloves when gardening or cooking
- Use electric razor for shaving.

You may use the table included in the back of this book to record your blood counts. This will help you understand the period when your counts are low because of the chemotherapy. This period is referred to as the nadir.

ALLERGIC REACTIONS:

Some treatments can cause allergic reactions. It may be necessary to monitor your blood pressure, pulse, and temperature frequently during your first treatment with these medications. To prevent allergic reactions it may be necessary to give you medication that may make you very sleepy. These medications may affect your ability to drive or operate machines.

REACTIONS AND SIDE EFFECTS:

Some people, but not all, have reactions and side effects to the chemotherapy that may cause physical change and/or discomfort. Each chemotherapy medicine can produce different side effects in different people. How much each person reacts varies from treatment to treatment. It is important to keep in mind that there is no relationship between the side effects you may experience from to chemotherapy you are taking and its effectiveness. In other words, the ability of the drugs to destroy cancer cells is not measured by how many or how severe the side effects are.

Some patients are treated effectively without any side effects at all.

Always remember:

- Severe side effects are usually temporary
- Medicines are available to lessen the side effects

NAUSEA:

Some chemotherapy drugs cause nausea (upset stomach) that may result in vomiting. However, your doctor will prescribe an anti-nausea medicine via the vein prior to the administration of the chemotherapy, which will diminish the effect of the nausea.

Here are some ideas that may help to reduce nausea:

- Eat small amounts of food several times a day to keep the stomach from being too full
- Avoid fatty and fried foods
- Drink fluids one hour before or after your meals, and always drink slowly. Dry foods, such as toast and crackers, seem to help ease nausea, especially in the morning.
- Do not lie flat for at least (2) hours after eating. It may however, be helpful to rest after eating with your head raised somewhat.
- Drink plenty of fluids during the day to maintain your body at a good level of hydration. If nausea and vomiting becomes a problem, please call your nurse or doctor to obtain a prescription to help control it.

LOSS OF APETITE:

Eating properly is especially important for the person with cancer. A well-nourished body is better able to handle the stress of cancer and chemotherapy. Your appetite may change during treatment, but you can learn to control loss of appetite by changing your eating habits. This allows you to eat more and keep your strength. It is important for you, your family, and the nurse or doctor to work together to make eating as appealing as possible.

CHANGES IN TASTE:

Changes in taste may develop as a result of your treatment. Here are some suggestions that may help you to decrease the effect of it when you eat.

- Try to increase your protein intake by drinking whole milk (add powdered milk to it); adding eggs to salads, casseroles and sauces; and by snacking on cheese and crackers in between meals.
- Find foods high in protein that taste good to you. If meat is difficult to tolerate, use other sources, such as dairy products, peanut butter, and beans.
- Plan your meals so that you eat your largest meal when you are most hungry.
- Increase your calorie intake to help supply the energy needed to help protein build healthy cells.

LIQUID INTAKE AND CHEMOTHERAPY:

Some chemotherapy drugs affect the bladder or kidneys. It is very important that these drugs are flushed out of your body to keep your kidneys functioning properly; especially on days you are taking chemotherapy.

Try to drink at least 12 eight-ounce glasses of water, juices, tea, or broth on those days. Beverages with caffeine are not to be included in this quota. Vomiting and diarrhea deplete your body fluids. To replace these fluids and to prevent dehydration, you must drink lots of fluids.

Check with your doctor about drinking alcoholic beverages.

MOUTH SORES (Mucositis):

Mucositis is the medical term for mouth sores. Some drugs may cause sores and sore throat. Report these symptoms at once. The following suggestions will help to prevent or minimize the development of mouth sores and esophagitis (inflammation of the esophagus):

- A dental evaluation and correction of dental problems at least 14 days prior to initiation of therapy if your physician feels this is indicated
- Consistently follow an oral care regimen at least four times daily, especially within 30 minutes after eating and at bedtime
- Brush your teeth with fluoride-containing toothpaste or with a baking soda solution. A solution of lemon juice and glycerine should never be used as a cleaning agent; this solution promotes dryness and irritation of the mucous membranes
- Remove and thoroughly cleanse dentures, if present; store dentures in a fresh solution daily
- Rinse the mouth thoroughly with one of the following solutions during and after brushing, rather than with a commercial mouthwash containing alcohol, which may be irritating or drying to the oral mucosa
- Keep the lips moist with K-Y jelly or a lip balm of choice every 2 to 4 hours
- Maintain adequate hydration by drinking as much fluids as tolerated, aiming for 2 to 3 liters per day
- Minimize trauma to the mucous membranes; avoid the use of tobacco and alcohol
- Avoid foods that are too hot or too cold, spicy, or physically irritating
- Follow the oral care protocol during and after each course of chemotherapy
- Sucking ice chips during chemotherapy may also help

For a dry mouth:

- Rinse with saline solution every two hours
- Drink lots of fluids
- Carry water or other liquid with you everywhere
- Dip food into sauces and gravies
- Chew gum or suck sugarless mints/lozenges

For mild mouth sores:

- Increase the frequency of oral care by rinsing with one of the solutions suggested above between brushing, and once during the night
- Eat soft foods or drink liquid meals like Ensure, instant breakfast, etc.
- Usually cold foods or room temperature meals are less painful than hot, but be your judge. Generally, avoid spicy foods.
- Sometimes frozen goods can relieve pain: eat Popsicles, frozen grapes, water melon cubes, suck ice, or drink ice water.
- Avoid “tart” food like citrus and tomatoes. Carbonated drinks can also hurt.
- There are other suggestions that your nurse can offer which require a prescription. This is called MMX (Mylanta, Mycostatin , Xylocaine, 1:1:1) Swish and swallow 5 times a day. Do not eat for 30 minutes afterward.

DIARRHEA:

Diarrhea or loose bowel movements may result from some chemotherapy drugs. The suggestions below may relieve some of the discomfort:

- Avoid foods that cause gas or cramps
- Eat small amounts of food at regular intervals
- Avoid large amounts of high fiber foods.

HAIR LOSS:

Chemotherapy drugs sometimes cause the loss of hair. This may include scalp hair, beard, eyebrows, armpits, pubic hair, and hair from the legs. Hair loss is called alopecia. It may be very difficult for you to deal with the idea of hair loss, but hair almost always grows back after treatment is completed. You may start looking into all of the different kinds of wigs, scarves and hats available to cancer patients who experience hair loss. Although we do not promote or advertise for any institution, we can provide you with the name of several places that have a variety of devices to cover the scalp if hair loss is experienced with your treatment.

WHY DO SOME PEOPLE LOOSE THEIR HAIR AND OTHERS DO NOT?

Because chemotherapy works to attack the cells growing out of control, they do this by affecting the cells division process. There are several phases of the cell division process. Which phase is affected has to do with which cells in the body are affected the most. Therefore some chemotherapy may affect the hair follicles and some may not.

MENSTRUAL CYCLES:

Women who are still having menstrual cycles may experience irregular periods, or stop menstruating altogether, as long as the therapy is continued. Hot flashes and other symptoms of menopause may develop in women who stop menstruating while being treated.

Although pregnancy usually does not occur at this time, it is still possible.

Chemotherapy may damage an unborn child, so it is strongly recommended that women of childbearing age use birth control throughout treatment. You may want to discuss this with your doctor.

SPERM COUNT:

Chemotherapy may result in a decrease in sperm production and may even cause permanent sterility. As a result, you may want to discuss this potential problem with your physician prior to beginning your treatment. You may also want to explore the possibility of having sperm frozen to permit the option of future artificial insemination.

SEXUALITY:

The sexual relationship that you have with your partner may be influenced by the physical, emotional and social changes you may experience during your treatment. We will be glad to discuss these concerns with you.

FATIGUE:

While most people experience occasional tiredness, persons with cancer may experience more persistent fatigue that can interfere with their day-to-day activities. Although the fatigue may be a chronic symptom coping with it can be successfully managed. Fatigue can be caused by:

- Stress
- Effects of disease or treatment: drug side effects, discomfort, inadequate nutrition and hydration, lack or loss of sleep, diminished red blood cells

What can you do to cope with and manage fatigue?

- Communicate your feelings with the nurse
- Rely on your family and friends to help with errands, household chores etc.
- Drink plenty of fluids
- Eat balanced meals
- Plan for both rest and activities during the day
- It is okay to take naps during the day at times when you are usually more tired
- Try to exercise at your own pace; this helps to increase your stamina

TINGLING HANDS AND FEET:

Certain chemotherapy agents affect the ending portion of the nerves in the hands and feet. If you start feeling numbness and/or a tingling sensation, please make sure to notify your doctor or nurse. The chemotherapy dosage may have to be changed.

ANEMIA:

There are two methods available to correct anemia, blood transfusions and Erythropoietin. Blood transfusions have been used as therapy for severe anemia. Transfusions improve your blood's oxygen carrying ability and can make you feel stronger again. However, blood transfusions can increase red blood cells in the short term, but your marrow will not be prompted to make more red blood cells without help. Erythropoietin is a hormone that stimulates the growth of new red blood cells and helps to correct the problem of anemia secondary to chemotherapy. If you should require treatment with this, the dose and frequency will be ordered by your physician and administered by your nurse. Please do not hesitate to ask your nurse if you need additional information.

HOW LONG WILL THE TREATMENT LAST?

The amount of time depends on:

- The type and stage of cancer being treated
- The type of drugs used for your chemotherapy
- How long it takes your body to respond to the treatment
- What kind of side effects you have

WHEN TO CALL THE DOCTOR OR NURSE?

As your treatment progresses, you may experience a variety of side effects or symptoms that are either related to your chemo, or your diagnosis. When you phone us with a problem, our operator will triage your call. Emergency phone calls, that require immediate attention include:

- Chest pain
- Severe abdominal pain
- Progressive increase in temperature, higher than 100.5
- Seizure or collapse
- Sudden changes in mental status
- Shortness of breath
- Unable to move an extremity
- Choking
- Vomiting blood
- Swelling that is acute and rapid

A doctor or Nurse Practitioner will guide you. You will be advised to come in to our office or to go to the closest emergency room.

There are other symptoms that are less urgent in nature and can wait for a return call from our office. Please leave a message on the doctor's or Nurse Practitioner's voice mail. Your call will be returned within two hours. The important thing to remember is that you may want to leave a message only if it can wait. We also want to reassure you that every message is picked up and processed the same day.

PRESCRIPTIONS AND RENEWALS:

With the exception of certain narcotics, the Medical Assistants, with your physician, process the majority of prescriptions and renewals. Please allow 24 to 48 hours for prescriptions to be renewed. It is best to have the pharmacy call our office with the prescription request and then call you when it has been filled.

