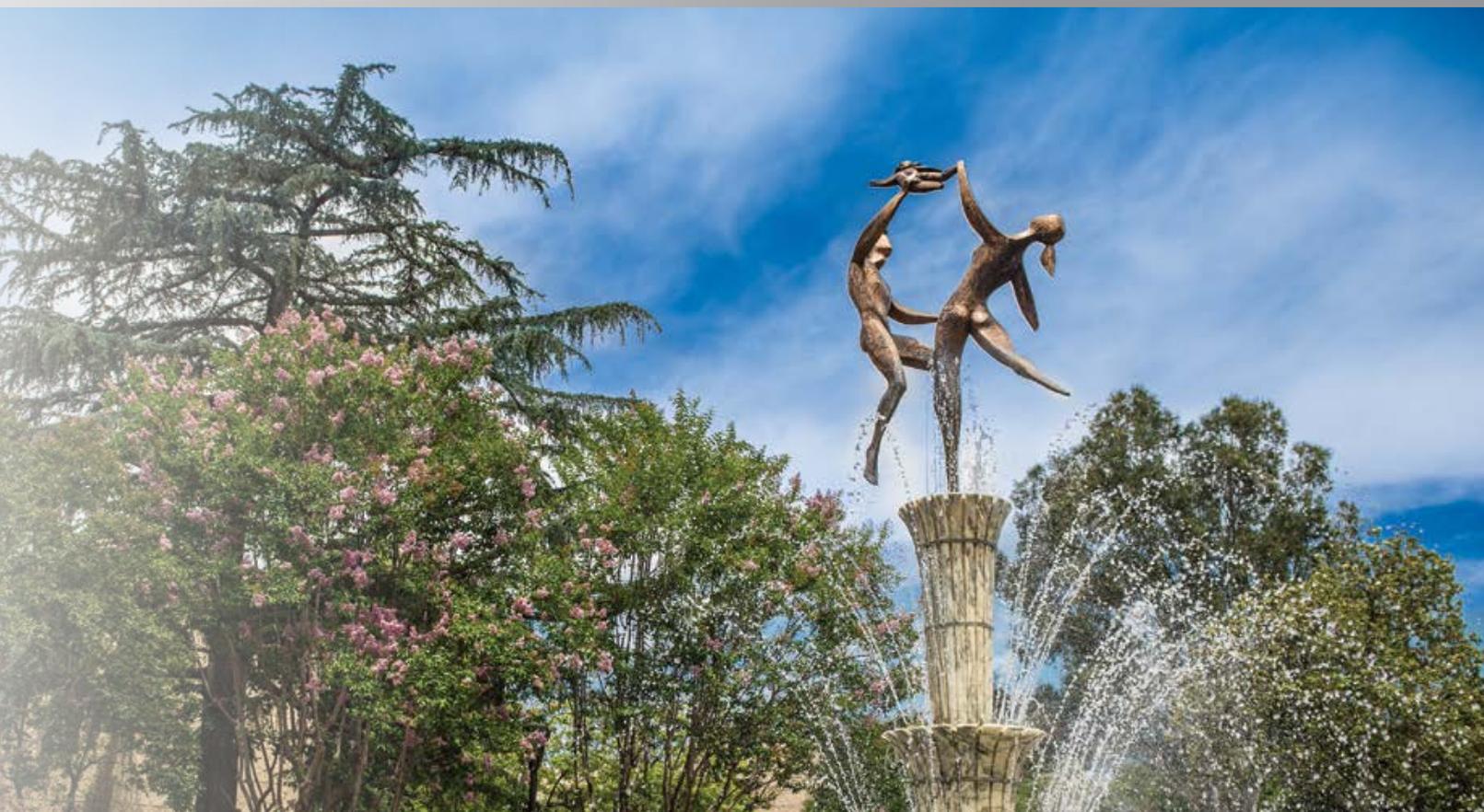


"The bottom line here is to use common sense and do whatever you need to do to protect yourself. You will have invested too much time and energy in overcoming your illness to take unnecessary chances that might introduce germs and disease."

— BMT Survivor

CHAPTER 8



Complications

Short-term Complications

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Chapter 8

Complications

Short-term Complications

Stem cell transplantation is an aggressive form of therapy. The degree of complications varies from patient to patient. The following are some of the short-term complications that may occur and some of the strategies the team at City of Hope will use to treat them.

Infections

While you are waiting for your new stem cells to engraft, your white blood count will be low thus increasing your risk of developing an infection. The nurses will check your vital signs frequently to see if you have a fever. If you do, blood samples will be drawn from your VAD (vascular access device) and peripheral to see if there are bacteria in your blood causing your fever. Infections can develop due to exposure to bacteria or due to growth of bacteria you already have in your body. If you develop a fever during the course of your transplant you will receive intravenous antibiotics to treat a possible infection.

Infections from the Environment

Infections can come from the air, food, water and from other people. You are at the greatest risk for infection when your white blood cell count is very low. As a result of this, your white blood cell count will be monitored very closely for a period of time before transplant and for several weeks after.

During this period of time, it is important to observe these guidelines:

1. Everyone entering your room **must wash their hands and wear a mask** to protect you from infection.
2. Fresh flowers, dried flower arrangements and live plants are not allowed in the hospital at any time. You may have silk flower arrangements, Mylar balloons, cards, posters, books and magazines.
3. You may wear your own clothes while in the hospital, however you must change into clean clothes every day after your shower. Hospital gowns are provided should you wish to wear one of these.

(Please refer to your *Inpatient Guide* for additional information regarding clothing and other items.)

Infections from Your Own Body

Infections can also come from your own body. We all have bacteria on our skin, in our mouth, stomach, intestinal tract, perineal area and genitals. This is normal and helps protect our bodies. However, when your immune system is suppressed, these bacteria may overgrow and cause infections. In order to protect yourself from these infections, there are certain things that you should do, such as:

Skin

- Bathe or shower once a day. Bathing helps keep bacteria from growing on your skin. Pay special attention to areas that become moist (under your arms, between your legs and under your breasts). Rinse off the soap thoroughly, as soap can be drying.
- Apply lotion or oil to help prevent dry skin. Make sure that the lotion or oil does not contain perfume or alcohol.
- Wear fresh clothes after each shower.
- Do not shave unless you have an electric razor.
- Your VAD dressing will be covered while you shower in order to keep it dry. If your VAD dressing gets wet, notify the nurse in order to have the dressing changed.

Mouth: To soothe your mouth and keep it clean, you will need to care for it in a special way.

What to Do:

- Rinse your mouth four times a day with 15 milliliters (mL) of an oral care product such as Biotene mouthwash.
- If your doctor has given you permission, use a toothette with toothpaste to swab your gums and clean your teeth.
- For patients who have used dental floss before, floss teeth with dental tape at least once daily as long as platelet count is greater than 50,000 mcL and bleeding does not occur. Patients who do not floss on a regular basis should not floss while myelosuppressed.
- Measure five mL (one teaspoon) of antifungal solution. Swish thoroughly in your mouth and swallow. Do this every four hours when awake.
- If you are unable to swallow your medicine, tell your nurse.

Perianal care: Chemotherapy and radiation therapy can make the anal area very sensitive. To prevent skin breakdown and infection:

- Clean thoroughly after each bowel movement, especially if you have diarrhea.
- Report any changes like diarrhea, bloody stool, pain or irritation to your nurse.

Blood Product Transfusion

After you have received conditioning chemotherapy and/or radiation therapy, your bone marrow will not be functioning well enough to develop blood cells until your new stem cells have engrafted. As a result, many transplant patients will receive blood and blood product transfusions to keep their blood counts up until their new stem cells begin producing the healthy blood cells they need.

Blood products (e.g., platelets, red blood cells, etc.) can be obtained from available supplies in the City of Hope blood bank, all of which come from unpaid, voluntary donors. They can also be provided by relatives or friends designated by you (using the directed donation process). All blood donations are tested to determine that there are no infectious diseases in the product.

Your doctor and nurse coordinator will be available to answer any questions you may have about blood products and how they are used in your treatment.

Kidney and Liver Problems

Over the course of your transplant you will be taking a number of medications, most of which are metabolized (broken down) and excreted through your kidneys or liver. As a result of this, there will be a great deal of demand on these organs. If your kidneys or liver get “overworked,” complications may arise. There are blood tests to closely monitor your kidney and liver function. If such complications arise, the doses of medication will be adjusted as necessary.

Another potential problem that may develop in the liver is veno-occlusive disease, or VOD. Another name for this is sinusoidal obstructive syndrome, or SOS. As a result of chemotherapy and radiation therapy, deposits of fibrous material may form in the small veins of the liver. This causes obstruction and back up of blood flow from the liver. You will be given medication to prevent this from occurring.

Graft Failure

If the new stem cells do not function adequately and the blood cell counts do not rise, this is considered a graft failure. This may be due to a viral illness, damage to the new bone marrow or for other unknown reasons. There are medications that may assist to stimulate graft function.

****There are short and long-term complications that are unique to allogeneic recipients. Please refer to Chapter 9 for more information on graft-versus-host disease.**

Long-term Complications

Long-term complications can be caused by high-dose chemotherapy, radiation therapy, chronic GVHD (in allogeneic transplants) or problems resulting from the original disease. Some of the long-term side effects include:

Gonadal Dysfunction

Sterility is a potential side effect of chemotherapy and irradiation. Most transplant recipients will be sterile as a result of the combined high-dose chemotherapy and/or radiation therapy administered before transplantation and will be unable to have children.

Female patients need to be examined regularly by a gynecologist. Physical changes you may experience are decreased or absent menstrual periods, decreased vaginal secretions and changes in ovarian function that result in decreased hormone (estrogen) levels.

Please discuss fertility concerns and reproductive options with your doctor as soon as possible before you begin your treatment.

Cataracts

Patients who have received total body irradiation may experience cataract formation between one to five years after transplant.

It is very important to notify your doctor if you notice any visual changes. Regular eye exams by an ophthalmologist are important so you can be monitored for cataracts.

Pulmonary Complications

Long-term survivors of transplantation may experience changes in their lung function as a result of high-dose chemo, radiation and/or chronic graft-versus-host disease.

Infections

Herpes simplex and herpes zoster are common viral infections that occur after you have undergone a transplant. Herpes simplex usually appears as sores on the lips or in the mouth.

Herpes zoster or shingles is related to the chicken pox virus and usually appears as a group of small blisters on the legs, face or back. There may be itching, pain and fever with the virus. If you are exposed to anyone with chicken pox or shingles, call your doctor *immediately*. Active herpes zoster infection may occur in transplant patients during the first two years. Treatment should be started as soon as the infection is identified.

A more serious viral infection, interstitial pneumonia, is a major cause of illness and death. About half of these pneumonias are caused by cytomegalovirus infections (CMV). A medication called gancyclovir is the drug used to treat CMV pneumonia.

Bleeding

Platelets are the cells in your blood that help form clots and control bleeding. Platelets are one of the last of the blood cells to return to a normal level after your transplant. It might take weeks to months for your new bone marrow to make enough platelets so you no longer

require platelet transfusions. After discharge, you may receive a transfusion in the outpatient department.

Signs of a low platelet count may include:

- Excessive bruising
- Petechiae (pinpoint red spots on the skin)
- Bleeding gums
- Nosebleeds
- Blood in your stool (may be red or black)
- Blood in your urine

If you notice any of these signs, contact your doctor right away.

Secondary Malignancy

The risk of another type of cancer resulting from the irradiation and chemotherapy that accompany transplantation has been documented in a small number of patients. If you have concerns or would like more information, please speak with your doctor or nurse.

Relapse

Relapse may occur any time following the transplant. Maintaining follow-up checkups with your transplant team is an important part of monitoring your new marrow.