

“It is good to know that this chapter lays out what the patient can expect, with important milestones, in the transplant process.”

— BMT Survivor

CHAPTER 7



Getting Your Body Ready for Transplant (The Conditioning Regimen)

Chemotherapy

Radiation Therapy

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Getting Your Body Ready for Transplant

Before you can receive the new cells, your doctor will plan a “conditioning regimen” tailored to your specific illness, cell source and ability to tolerate treatment. This will include chemotherapy and (in some cases) radiation. It is most often given in the one-to-two week period immediately prior to receiving cells.

For some patients, this conditioning is aimed at completely wiping out your existing bone marrow and treating your disease, with the new cells needed to “regrow” your immune system, which includes white cells, red cells and platelets. For other patients (particularly those receiving cells from a donor, and whose age or other conditions make them unable to tolerate very high doses of chemotherapy or radiation), the conditioning is lower-intensity and only suppresses the patient’s own system enough to give the donor cells “room to grow.” Your physician will be able to discuss the regimen best suited to you.

Chemotherapy

Chemotherapy is a group of anticancer drugs that destroy the growth of cancer cells. Your doctor will choose the type of chemotherapy treatment that is best for you based upon your individual needs and condition.

Chemotherapy can be taken orally (in a pill form) or given intravenously (directly into a vein) and may also be combined with radiation therapy in your treatment regimen. Generally in the transplant setting, conditioning chemotherapy (combinations of various chemotherapy agents are used in very large doses) is used to destroy the growth of cancer cells and the immune system in order to prepare the recipient’s body to accept the stem cells.

Side Effects of Chemotherapy

Chemotherapy acts by destroying rapidly dividing cells. There are many types of rapidly dividing cells in the body such as hair, mucous membranes, bone marrow and cancer cells. The side effects of chemotherapy result from the actions of the drugs on these rapidly dividing cells. The side effects experienced by each patient may be specific to them and the doctors and nurses will ensure that appropriate actions are taken to minimize any discomfort you may experience.

Some of the common side effects you may experience include the following:

Nausea and Vomiting The doctor will prescribe medications that help control the nausea and vomiting.

Diarrhea There are medications your doctor will prescribe to decrease/relieve the diarrhea.

You may be given fluids through your IV to replace fluids lost from diarrhea.

Be sure to clean your anal area well after each bowel movement to help prevent skin breakdown, soreness and infection.
Any pain around the anal area should be reported to your nurse.

Loss of Appetite

Good nutrition is important during your transplant.
Your nutrition can be maintained intravenously by total parenteral nutrition (TPN), which is a high-calorie, high-protein solution, if you lose the desire to eat.

Hair Loss

You will experience the loss of scalp and body hair a week or two after chemotherapy. Some people cut their hair very short or shave their head to make the transition a little easier.

Losing hair from your head, face or body is not easy to accept and may take some emotional adjustment. At times you may feel angry or depressed about losing your hair. Such emotions are neither wrong nor unusual. You might feel better by talking about them.

If you would feel better with your head covered, scarves, caps, turbans and wigs are all good methods to use. We can refer you to our Positive Image CenterSM, where a specialist can help you with your personal needs.

Skin Reaction

There are a variety of skin reactions that may occur as a result of chemotherapy and/or radiation therapy.

If your skin becomes very dry, follow the directions of your health care team.

Several drugs can cause patches of darkened or coarse skin to appear. These may occur on your hands, face, elbows and creases of the skin.

Chemotherapy can also cause a type of reaction like a sunburn, where your skin becomes flushed (reddened) and tends to peel. The palms of your hands and soles of your feet may become especially tender. Your health care team may order cream or lotion to help keep these areas moist and to help with the discomfort to these areas.

Sore Mouth

Because mouth tissue is at risk for infection, good mouth care is important during your transplant. You will need to follow special mouth care hygiene while you are in the hospital:

- a. Brush teeth, at least two times per day, with an ultra-soft toothbrush. If an ultra-soft toothbrush is hard to use, try a toothette dipped in non-alcohol based chlorhexidine. Allow toothbrush to air-dry before storing. Replace brush weekly.
- b. 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.

- c. Rinse mouth at least four times daily with a bland rinse.
- d. Avoid mouth rinses with phenol, astringents, or alcohol.
- e. Avoid tobacco, alcohol, or irritating foods such as those that are acidic, hot, rough and/or spicy.
- f. Use water or waxed (non-petrolatum) based moisturizers to protect lips.
- g. Keep up fluid levels. You do not want to get dehydrated.

You may notice that your mouth may become red and tender and your gums may bleed or there may be white patches in your mouth. Be sure to tell your doctor and nurses if you notice any of these symptoms. There are medications available to help control mouth and throat pain if needed.

Fatigue

It is very common to feel weak and tired after chemotherapy.

Many of the transplant medications and low blood counts may contribute to this feeling.

Listen to your body and rest when you feel the need. With time, the fatigue will pass.

Maintaining daily activity while hospitalized helps to decrease fatigue.

What You Can Do For Side Effects

Remember, there are many simple things you can do to manage your chemo side effects.

- Read the “Barrier Cards.” Ask your nurse to get your own set of cards. These cards cover all of the chemo side effects and give you advice on what to do.
- Drink at least two to three quarts of fluid every 24 hours, unless you are instructed otherwise.
- To reduce nausea, take anti-nausea medications as prescribed and eat small, frequent meals. The goal is to maintain good nutrition.
- You may be at risk of infection so try to avoid crowds or people with colds or not feeling well, and report fever or any other signs of infection immediately to your health care provider.
- To reduce chance of infection, you and your family should wash your hands often.
- To help treat/prevent mouth sores, use a soft toothbrush and rinse three times a day with 1/2 to 1 teaspoon of baking soda and/or 1/2 to 1 teaspoon of salt mixed with 8 ounces of water. A commercial non-alcoholic mouthwash like Biotene® may also be helpful.
- Use an electric razor to minimize risk of cuts or bleeding.

- Avoid sun exposure. Wear SPF 15 (or higher) sunscreen and protective clothing.
- In general, drinking alcoholic beverages should be kept to a minimum or avoided completely. Discuss this with your doctor.
- Get plenty of rest. Let your medical team know if you have trouble sleeping.
- With your doctor's permission, get regular exercise but avoid contact sports or activities that could cause injury.
- If you experience any symptoms or side effects related to your treatment, be sure to discuss them with your health care team. They can prescribe medications and/or offer other suggestions that are effective in managing such problems.
- City of Hope's Nursing Call Center 626-471-7133 is staffed 24 hours a day to answer any non-emergency questions treatment or self-care.

Radiation Therapy

Radiation therapy may be used in combination with chemotherapy as part of the preparation for your stem cell transplant. Total body irradiation (TBI) therapy is radiation given to destroy any cancer cells that may be remaining and to suppress your immune system to prevent rejection of the new marrow graft (stem cells). Vital organs will be protected during this process. Treatments are not painful and you will not feel anything unusual while the machine is on.

Immediate side effects may include nausea, vomiting, decreased appetite, diarrhea and fatigue. The skin exposed to the radiation can become slightly reddened and warm, like a sunburn. Other side effects can include sores in your mouth and throat and decreased blood cell counts. Late side effects of radiation can include sterility, cataract formation and lung problems.

Total body irradiation is given in small radiation doses, two to three times a day, approximately four to six hours apart. Each morning before going to radiation, you will be given medications to decrease the risk of nausea and vomiting. City of Hope staff will go with you to the radiation department. You receive radiation treatment while you are standing. Each appointment takes roughly 30 minutes, although actual treatment time is about 10 minutes.

You are encouraged to bring relaxing music. The department will supply a music player so you can listen to music while you receive your treatment.