

Multiple Myeloma Treatment Introduction

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Treatment Options

Treatment options depend on how much the cancer has affected the general health of the person, kidney function, and various organ systems of the body. The goal of treatment for multiple myeloma is to control the disease for as long as possible, and to provide comfort for the person.

Many patients want to learn all they can about their disease and their treatment choices so that they can take an active part in decisions about their care. They are likely to have many questions and concerns about their treatment options. Most patients want to know how they will function during and after treatment and whether they will have to change their normal activities. The doctor is the best person to answer a patient's questions, such as what treatment choices are, how successful it is expected to be, and what the risks and side effects may be.



Types of Treatment

Treatment for multiple myeloma is systemic. Systemic treatments destroy or control cancer cells throughout the entire body. Chemotherapy is a systemic treatment, and is almost always used to treat people with multiple myeloma. Bone marrow transplants and stem cell transplants, also systemic treatments, may also be used to treat multiple myeloma. Sometimes, local treatments can also be used to relieve symptoms of the disease.

Local treatments, such as radiation therapy, control or kill the cancer cells in a certain area. Radiation is often given to people with multiple myeloma in order to control bone pain or to prevent fractures in bones weakened by the cancer.

Goals of Treatment

Different types of treatments have different goals. Below is a list of various treatments and their goals.

- **Chemotherapy.** The goal of chemotherapy is to control the cancer for as long as possible. Multiple myeloma is very sensitive to chemotherapy and is used to treat most patients. Chemotherapy can be given intravenously (through a vein) or by mouth.
- **Immunotherapy.** This treatment stimulates the immune system to fight multiple myeloma. The 2 main drugs used are Thalomid[®] (thalidomide) and Revlimid[®] (lenalidomide). They help keep multiple myeloma cells from reproducing within bone marrow.
- **Radiation therapy.** The goal of radiation in treating multiple myeloma is to relieve bone pain or prevent or treat a fracture in the area of the bone weakened by the cancer. Radiation therapy may be used in combination with chemotherapy.
- **Bone marrow transplants.** The goal of a bone marrow transplant is to kill as many of the cancer cells as possible by treating the body with very high doses of chemotherapy and radiation. Normally, the body would not be able to handle such high doses. Therefore, after a person is treated with these high doses, they need to be "rescued" with healthy, new bone

marrow. The new bone marrow can be the person's own bone marrow (called an autologous transplant) or can come from a donor (called an allogeneic transplant).

- **Stem cell transplants.** A newer form of therapy, called a peripheral stem cell transplant, is based on the same idea as a bone marrow transplant but uses cells that are collected from the donor's or the patient's own blood rather than from the bone marrow. The main difference is that while the bone marrow is collected from the hipbone, the stem cells are collected from the veins of the arm. These treatments are given in transplant centers that specialize in this form of treatment.
- **Watchful waiting.** The goal of watchful waiting is to monitor or check cancer that is growing very slowly and that is unlikely to do any harm for a long time, if ever. Rather, rather than immediately starting treatment. Sometimes the treatments for multiple myeloma can cause more harm than living with it. Your doctor may recommend watchful waiting if you don't have damage to your kidneys or bones and you have little or no anemia. You'll likely see your doctor about every 3 months for checkups. At that time, you'll have blood and urine tests and perhaps X-rays. These tests check to make sure the cancer is not starting to actively attack your body. If it is, you'll start active treatment.

Research is ongoing in the field of multiple myeloma. New medicines and treatments are tested in clinical trials. Before beginning treatment, a person should ask the doctor if there are any clinical trials they should consider.

Patients are often overwhelmed with the information they receive from their doctor. It is important that they take the time to gather as much information as possible.

Chemotherapy for Multiple Myeloma

Chemotherapy is the use of drugs to kill cancer cells. Chemotherapy for multiple myeloma usually includes a combination of drugs. The drugs may be given by mouth or by injection. Either way, chemotherapy is a systemic therapy because the drugs travel through the body in the bloodstream.



A patient will be treated for a period of time with chemotherapy, and then will have a period of rest. This is called a cycle of treatment. Usually, the periods of rest last three to four weeks. This cycle will continue throughout the treatment.

Most patients have chemotherapy in an outpatient part of the hospital, at the doctor's office, or at home. Depending on which drugs are given and the person's general health, the patient may have to stay in the hospital during treatment.

A newer combination of these 3 drugs is often the regimen of choice today.

- Oncovin[®] (vincristine)
- Decadron[®] (dexamethasone)
- Doxil[®] (doxorubicin)

Here's another popular drug combination,

- Oncovin[®] (vincristine)
- Adriamycin[®] (doxorubicin)
- Decadron[®] (dexamethasone)

These 2 drugs. have been combined to treat multiple myeloma since the 1960s. These drugs are usually given together and are taken in pill form.

- Alkeran[®], L-phenylalanine mustard, L-PAM, L-sarcolysin (melphalan)
- Apo-Prednisone, Deltasone, Orasone (prednisone)

The names of these drugs are usually abbreviated to their first letters. For example, MP is used when melphalan and prednisone are given in combination.

Sometimes a chemotherapy drug is combined with an immunotherapy drug to kill the cancer cells and keep the cancer from growing in the bone marrow. One such combination is the chemotherapy drug Velcade (bortezomib) and the immunotherapy drug Thalomid® (thalidomide). It has recently been shown that this combination can work when other treatments stop working. Velcade is also being tested in people newly diagnosed with multiple myeloma.

Immunotherapy for Multiple Myeloma

This type of treatment gets the immune system to more effectively attack the cancer cells.

Thalomid® (thalidomide) is an immunotherapy drug that works very well in people who do not respond well to other types of cancer treatment. It may be the first treatment used in people who are considering a stem cell transplant. In that case, it may be combined with the chemotherapy drug Decadron® (dexamethasone).

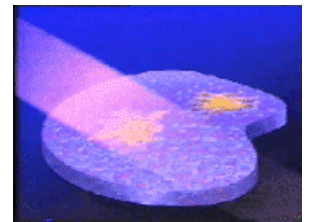
Thalomid works in many complex ways. It shuts off the blood supply to the myeloma cells. And it keeps myeloma cells from latching on to the bone marrow and growing. People usually take it in a capsule once a day, often at bedtime.

Doctors sometimes use Thalomid with the chemotherapy drug Velcade (bortezomib). It has recently been shown that this combination can work when other treatments stop working.

Revlimid® (lenalidomide) is a new immunotherapy drug that works similarly to Thalomid, but it may have fewer side effects. People take it as a pill, generally for 21 days, followed by a 7-day period of rest. It is being tested in clinical trials.

Radiation Therapy for Multiple Myeloma

Radiation therapy, also called radiotherapy, is another method of treating multiple myeloma. In radiation, x-rays are used to control the growth of cancer cells. Radiation therapy is a local treatment, meaning that it affects the cancer cells only in the treated area. Radiation therapy is generally given to treat symptoms of multiple myeloma, such as bone pain or for single plasmacytoma.



Bone Marrow Transplant

In a bone marrow transplant, the patient is treated with high doses of chemotherapy. The body would normally not be able to handle such high doses because the bone marrow and other cells would be destroyed. However, after the high dose treatments, the person is "rescued" with healthy new bone marrow. At times, radiation therapy, in which radiation is given to the entire body, is also used as part of the bone marrow transplant procedure.

There are two kinds of bone marrow transplants: allogeneic and autologous. In an allogeneic bone marrow transplant, the bone marrow from another person, called a donor, is used. Often, the donor is a close relative. Allogeneic transplantation is generally limited to persons less than 55 years of age. In an autologous bone marrow transplant, the person's own bone marrow cells are used. These cells are removed and preserved before the chemotherapy is given.

Patients who get this treatment stay in the hospital for a while. The bone marrow given to the patient after high-dose chemotherapy has to start making enough blood cells before the patient can go home. The period right after the transplant, until the bone marrow starts growing, is when the person is most at risk for complications, such as infection and bleeding. Patients work closely with their doctors and nurses during this time.



Stem Cell Transplant

To cut down on the time it takes for the new bone marrow to grow, doctors may use peripheral stem cells in transplants. These stem cells are already released into the blood, yet are still able to have the capacity to form blood cells. The collection of stem cells is done by passing the patient's or donor's blood through a special machine. Collecting cells in this way is easier and less painful than taking samples of bone marrow. Similar to bone-marrow transplants, stem cells can also come from a healthy donor (called allogeneic stem cells) or from the patients themselves (called autologous stem cells).

Supportive Treatments for Multiple Myeloma

Patients might also have supportive treatment in which the patient is treated for the symptoms of the disease.

The doctor may give the patient a back or neck brace to help relieve bone pain. The patient may be taught how to do exercises, which can help stop the bones from giving off calcium. Bisphosphonates are medications which can slow the bone damage caused by multiple myeloma. These drugs are mostly given through a vein to decrease the risk of bone complications like fractures and to lower abnormally high blood calcium levels. Data also suggest that bisphosphonates can also reduce the bone pain associated with the disease.

Patients may also have surgery if their bones are weak or break. In this surgery, the surgeon tries to repair and support the bones. Patients also must be careful to stay away from people with colds and sicknesses. If patients have an infection, the doctor will probably give them antibiotics, or drugs that fight infection.

If patients develop anemia, they may be given red blood cell transfusions through their vein or medication to boost their red blood cells.

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