Multiple Myeloma - Treatment

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Treatment Options

This section outlines treatments that are the standard of care (the best proven treatments available) for this specific type of cancer. When making treatment plan decisions, patients are also encouraged to consider clinical trials as an option. A clinical trial is a research study to test a new treatment to evaluate whether it is safe, effective, and possibly better than standard treatment. Your doctor can help you review all treatment options. For more information, see the Clinical Trials [2] and Current Research [3] sections.

Treatment overview

In cancer care, different types of doctors often work together to create a patient?s overall treatment plan that combines different types of treatments. This is called a multidisciplinary team [4].

The treatment of multiple myeloma depends on whether the patient is experiencing symptoms (see Staging [5]) and the patient?s overall health. In many cases, a team of doctors will work with the patient to determine the best treatment plan. The goals of treatment are to eliminate myeloma cells, control tumor growth, control pain, and allow patients to have an active life.

While there is no cure for multiple myeloma, the cancer can be managed successfully in many patients for years. Doctors help patients manage the symptoms of myeloma so patients can lead an active life.

Descriptions of the most common treatment options for multiple myeloma are listed below; they are divided into treatment options for people without symptoms (also called asymptomatic patients) and for people with symptoms. In addition, treatment options may depend on whether the patient is newly diagnosed with myeloma or is experiencing a recurrence of the disease. Learn more about making treatment decisions [6].

Active surveillance, for patients without symptoms

Patients with early-stage myeloma and no symptoms or MGUS may simply be closely monitored. This approach is called active surveillance or watchful waiting. If symptoms appear, then active treatment starts. Current research shows that starting active therapy for people with no symptoms does not result in longer survival as compared to those who have active surveillance. However, patients with asymptomatic myeloma may participate in clinical trials [2] designed to prevent the disease from turning into symptomatic myeloma.

Overview of treatment options, for patients with symptoms

Treatment for patients with symptomatic myeloma includes both treatment for the disease as well as supportive therapy to improve a patient?s quality of life (such as by relieving symptoms and maintaining good nutrition). Disease-directed treatment typically includes drug therapy, such as targeted therapy or chemotherapy, with or without steroids. Stem cell transplant may be an option. Other types of treatments, such as radiation therapy and surgery, are used in specific circumstances. Each type of treatment is described below.

Targeted therapies

Targeted therapy is a treatment that targets the cancer?s specific genes, proteins, or the tissue environment that contributes to cancer growth and survival. This type of treatment blocks the growth and spread of cancer cells while limiting damage to normal cells. Targeted therapy has proven in recent years to be quite successful in controlling myeloma, and researchers continue to investigate new and evolving drugs for this disease.

Thalidomide (Thalomid) and lenalidomide (Revlimid) are drugs that stop growth of myeloma cells in the bone marrow. They starve the cancer cells by blocking new blood vessel formation, a process called angiogenesis. These drugs strengthen the immune cells to attack the cancer cells.

Other targeted therapy drugs, bortezomib (Velcade) and carfilzomib (Kyprolis), are classified as proteasome inhibitors, targeting specific enzymes called proteasomes that digest proteins in the cells. As myeloma cells produce a lot of proteins in the form of antibodies, they are particularly vulnerable to this drug.

Thalidomide, lenalidomide, and bortezomib may be used to treat newly diagnosed patients, while lenalidomide, bortezomib, and carfilzomib are effective for treating recurrent myeloma Targeted therapies may also be used in combination with chemotherapy or steroid medications (see below), as certain combinations of drugs can sometimes have a better effect than a single drug. In fact, the combination of lenalidomide, bortezomib, and dexamethasone may be so effective that patients may be offered this combination instead of a stem cell/bone marrow transplant (see below).

However, the decision to undergo a stem cell/bone marrow transplant is complex and should be discussed carefully with your doctor.

Maintenance therapy is the ongoing use of a drug. Research has shown that maintenance therapy with lenalidomide extends patients? survival time and extends the time they live without active myeloma. However, it has to be used with caution. Find out more about maintenance therapy [7].

Recent studies show that not all tumors have the same targets. To find the most effective treatment, your doctor may run tests to identify the genes, proteins, and other factors in your tumor. As a result, doctors can better match each patient with the most effective treatment whenever possible. In addition, many research studies are taking place now to find out more about specific molecular targets and new treatments directed at them. Talk with your doctor about possible side effects for a specific medication and how they can be managed.

Learn more about targeted treatments [8].

Chemotherapy

Chemotherapy is the use of drugs to kill cancer cells, usually by stopping the cancer cells? ability to grow and divide. Systemic chemotherapy is delivered through the bloodstream to reach cancer cells throughout the body. Chemotherapy is given by a medical oncologist, a doctor who specializes in treating cancer with medication, or a hematologist, a doctor who specializes in treating blood disorders. A chemotherapy regimen (schedule) usually consists of a specific number of cycles given over a set period of time. A patient may receive one drug at a time or combinations of different drugs at the same time.

Chemotherapy that has been used successfully for the treatment of myeloma includes cyclophosphamide (Cytoxan, Neosar), doxorubicin (Adriamycin, Doxil), melphalan (Alkeran), etoposide (Toposar, VePesid), cisplatin (Platinol), and carmustine (BCNU).

Often, more than one drug is used at a time. It may also be recommended to combine chemotherapy with other types of treatment, including targeted therapies (see above) or steroids. For instance, the combination of melphalan, prednisone (a steroid, see below), and a targeted therapy called bortezomib is approved by the U.S. Food and Drug Administration (FDA) for the initial treatment of multiple myeloma because it increases survival when compared with melphalan and prednisone. A patient may also be given a combination of melphalan, prednisone, and either thalidomide or lenalidomide. Additional combinations of drugs are being evaluated in clinical trials.

The side effects of chemotherapy depend on the individual and the dose used, but they can include fatigue, risk of infection, nausea and vomiting, loss of appetite, and diarrhea. Other side effects include peripheral neuropathy [9] (tingling or numbness in feet or hands), blood clotting problems [10], and low blood counts [11]. These side effects usually go away once treatment is finished.

The length of chemotherapy treatment varies from patient to patient and is usually given until the myeloma is well controlled.

Learn more about chemotherapy [12] and preparing for treatment [13]. The medications used to treat cancer are continually being evaluated. Talking with your doctor is often the best way to learn about the medications prescribed for you, their purpose, and their potential side effects or interactions with other medications. Learn more about your prescriptions by using searchable drug databases [14].

Other drug therapy

Steroids, such as prednisone and dexamethasone (multiple brand names), may be given alone or at the same time as other drug therapy, such as targeted therapy or chemotherapy (see above).

In addition, most patients with myeloma receive monthly infusions of bisphosphonate therapy, which are drugs that help to prevent bone disease from myeloma. Learn more about bisphosphonate therapy [15].

Stem cell transplantation/bone marrow transplantation

A stem cell transplant is a medical procedure in which diseased bone marrow is replaced by highly specialized cells, called hematopoietic stem cells. Hematopoietic stem cells are found both in the bloodstream and in the bone marrow. Today, this procedure is more commonly called a stem cell transplant, rather than bone marrow transplant, because it is the blood stem cells that are typically being transplanted, not the actual bone marrow tissue.

Before recommending transplantation, doctors will talk with the patient about the risks of this treatment and consider several other factors, such as the type of cancer, results of any previous treatment, and the patient?s age and general health.

There are two types of stem cell transplantation depending on the source of the replacement blood stem cells: allogeneic (ALLO) and autologous (AUTO). For multiple myeloma, AUTO is more commonly used; ALLO is being studied in clinical trials.

In both types, the goal of transplantation is to destroy cancer cells in the marrow, blood, and other parts of the body and allow replacement blood stem cells to create healthy bone marrow. In most stem cell transplants, the patient is treated with high doses of chemotherapy and/or radiation therapy to destroy as many cancer cells as possible. Learn more about bone marrow and stem cell transplantation [16].

Radiation therapy

Radiation therapy is the use of high-energy x-rays or other particles to kill cancer cells. A doctor who specializes in giving radiation therapy to treat cancer is called a radiation oncologist. The most common type of radiation treatment is called external-beam radiation therapy, which is radiation given from a machine outside the body. A radiation therapy regimen (schedule) usually consists of a specific number of treatments given over a set

period of time.

Doctors may recommend radiation therapy for patients with bone pain when chemotherapy is not effective or in an attempt to control pain. However, the use of radiation therapy should be a careful decision. In many instances, pain (especially back pain) is due to structural damage to the bone. Radiation therapy will not help this type of pain and may compromise the bone marrow's response to future treatment.

Side effects of radiation therapy may include fatigue, mild skin reactions, upset stomach, and loose bowel movements. Most side effects go away soon after treatment is finished. Learn more about radiation therapy [17].

Surgery

Surgery is not a treatment option for multiple myeloma, but it may be used to relieve symptoms (see below).

Palliative/supportive care

Cancer and its treatment often cause side effects. In addition to treatment to slow, stop, or eliminate the cancer, an important part of cancer care is relieving a person?s symptoms and side effects. This approach is called palliative or supportive care, and it includes supporting the patient with his or her physical, emotional, and social needs.

For example, surgery may be used to relieve pressure from a plasmacytoma on the spine or other organs. More recently, procedures such as kyphoplasty (inflating and injecting bone cement into the vertebra [back bones]) and vertebroplasty (injecting bone cement to stabilize fractures in the spine) have been considered to relieve pain, restore lost height due to collapsing vertebra, and strengthen the spine.

Palliative care can help a person at any stage of illness. People often receive treatment for the cancer and treatment to ease side effects at the same time. In fact, patients who receive both often have less severe symptoms, better quality of life, and report they are more satisfied with treatment.

Before treatment begins, talk with your health care team about the possible side effects of your specific treatment plan and supportive care options. And during and after treatment, be sure to tell your doctor or another health care team member if you are experiencing a problem, so it is addressed as quickly as possible. Learn more about palliative care [18].

Recurrent or relapsed myeloma

A remission is when cancer cannot be detected in the body and there are no symptoms. This may also be called ?no evidence of disease? or NED.

A remission can be temporary or permanent. This uncertainty leads to many survivors feeling worried or anxious that the cancer will come back. While many remissions are permanent, it?s important to talk with your doctor about the possibility of the cancer returning. Understanding the risk of recurrence and the treatment options may help you feel more prepared if the cancer does return. Learn more about coping with the fear of recurrence [19].

If the cancer does return after the original treatment, it is called recurrent myeloma or relapsed myeloma. When this occurs, a cycle of testing will begin again to learn as much as possible about the recurrence. After testing is done, you and your doctor will talk about your treatment options. Often the treatment plan will include the therapies described above (such as targeted therapy and chemotherapy) but may be used in a different combination or given at a different pace. Your doctor may also suggest clinical trials that are studying new ways to treat recurrent myeloma.

People with relapsed myeloma often experience emotions such as disbelief or fear. Patients are encouraged to talk with their health care team about these feelings and ask about support services to help them cope. Learn more about dealing with cancer recurrence [20].

Refractory myeloma

Refractory myeloma occurs when cancer has recurred on more than one occasion and the disease no longer responds to treatment. Patients with this diagnosis are encouraged to talk with doctors who are experienced in treating this stage of cancer, because there can be different opinions about the best treatment plan. Learn more about seeking a second opinion [21] before starting treatment, so you are comfortable with the treatment plan chosen. This discussion may include clinical trials [22].

For people with refractory myeloma, supportive care to reduce symptoms and complications is important and may include:

- Erythropoietin [23], a red blood cell growth factor, may help patients with anemia.
- Antibiotics and intravenous immunoglobulins (a blood product given through an IV) may treat or prevent infections.
- Plasmapheresis is used to reduce the thickness of the blood and relieve the related symptoms. During this procedure, blood is taken from a vein and plasma (the liquid part of the blood) is removed from the body after it is separated from the red and white blood cells. The blood cells are then mixed with a plasma substitute, usually an albumin solution, and returned to the patient. This procedure is often done continuously using a blood cell separator.
- As mentioned above, bisphosphonates (drugs that increase bone density) help with bone pain and reduce the risk of fractures. These drugs also prevent high levels of calcium in the blood, which reduces the effects of having too much calcium circulating in the blood.
- Exercise is recommended to maintain bone strength and reduce the loss of calcium.
- Drinking an adequate amount of water and other healthy fluids can flush the kidneys and help them filter impurities from the blood.
- A balanced diet high in calories and protein helps prevent infection, as does getting plenty of rest and reducing stress.

For many patients, a diagnosis of refractory cancer can be very stressful and, at times, difficult to bear. Patients and their families are encouraged to talk about the way they are feeling with doctors, nurses, social workers, or other members of the health care team. It may also be helpful to talk with

other patients, including through a support group.

Find out more about common terms used during treatment [24].

If treatment fails

Recovery from cancer is not always possible. If treatment is not successful, the disease may be called advanced or terminal cancer.

This diagnosis is stressful, and this is difficult to discuss for many people. However, it is important to have open and honest conversations with your doctor and health care team to express your feelings, preferences, and concerns. The health care team is there to help, and many team members have special skills, experience, and knowledge to support patients and their families. Making sure a person is physically comfortable and free from pain is extremely important.

Palliative care given toward the end of a person?s life is called hospice care [25]. You and your family are encouraged to think about where you would be most comfortable: at home, in the hospital, or in a hospice environment. Nursing care and special equipment can make staying at home a workable alternative for many families. Learn more about advanced cancer care planning [26].

After the death of a loved one, many people need support to help cope with the loss. Learn more about grief and bereavement [27].

Links:
[1] http://www.cancer.net/about-us
[2] http://www.cancer.net/node/24863
[3] http://www.cancer.net/node/19378
[4] http://www.cancer.net/node/25356
[5] http://www.cancer.net/node/19373
[6] http://www.cancer.net/node/24582
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