

Newly diagnosed with
multiply myeloma,
information on your
planned treatment
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Treatment of Newly Diagnosed Multiple Myeloma with Lenalidomide 2 What is multiple myeloma? This refers to the cancer of the bone marrow. B cells are a type of white blood cells that give rise to plasma cells. In multiple myeloma, these plasma cells divide at an abnormally high rate. Because the B cells arise from the bone marrow, marrow gets affected.

Figure 1: Some of the events which take place in the bone marrow in multiple myeloma

Risk factors

The risk factors associated with multiple myeloma include

- a. Age- There is a higher prevalence among those who are elderly.
- b. Race- African Americans are more at risk.
- c. Gender- It is more common in men.
- d. Radiation exposure.
- e. Positive family history.
- f. Over-weight and obesity.
- g. Occupational exposure to chemicals, especially to petroleum products, cosmetology and agriculture.
- h. Existence of plasma co-morbidities.

Signs and Symptoms

The symptoms are vague and may present in early stages of the disease. They include bone symptoms, especially in the pelvis, back, ribs and the skull. Chronic fatigue, anemia, neuropathy, persistent infections, kidney failure, unexplained weight loss and hypercalcemia are some of these symptoms. There is also elevated levels of antibodies and also other plasma proteins.

Diagnosis

Some of the modes of diagnosis include bone marrow biopsy, CT scan, MRI, blood and urine samples for antibody protein levels and elevated beta-2-microglobulin levels.

Figure 2: Image showing a destructive lesion at the diaphysis of the humerus

Treatment

The aims of treatment of multiple myeloma include controlling the proliferation of the cancer cells, maintenance therapy, symptomatic treatment and relapse therapy.

Treatment with Lenalidomide 2

Mode of Action of Lenalidomide

In vitro, effects of lenalidomide 2 include direct anti-tumor action. It inhibits the microenvironment support for the thriving of the tumor cells. It plays an immunomodulatory role. In vivo, it leads to the apoptosis of tumor cells both directly and indirectly. It does this by inhibition of support for bone marrow stromal cells. It also has anti-osteoclastogenic, anti-angiogenic, and immunomodulatory activities.

Treatment of Newly Diagnosed Multiple Myeloma

The choice of chemotherapy would depend on factors such as the health of the patients, future ability to undergo stem cell transplantation, age and also disease characteristics that indicate a high risk to MM. Treatment options for patients with high risk of multiple myeloma is indistinct. It is recommended that patients of that nature enrol in clinical trials.

Patients who are unwilling to participate in clinical trials would have a

regimen that should include a combination that has bortezomib. After initial chemotherapy, stem cell transplantation is recommended. For standard risk MM, the treatment options include a drug without melphalan, such as lenalidomide 2 and dexamethasone (RD), or cyclophosphamide, dexamethasone and bortezomib (VCD). In case the patient would not undergo stem cell transplantation, treatment should include thalidomide, melphalan and prednisone (MPT) or prednisone, bortezomib and melphalan (VMP). Another suitable combination is lenalidomide 2, with dexamethasone in low doses (RD).

Lenalidomide 2, an immunomodulating agent, is usually effective in the treatment of MM. It is most often used in combination with dexamethasone. The combination is taken in the form of pills for between 3 to 4 weeks, dexamethasone being taken weekly. Due to the tendency to lead to formation of clots, warfarin or aspirin is given to reduce the risk.

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