Myeloma is a cancer of the bone marrow. It forms in a type of white blood cell called a plasma cell. Plasma cells help the body to fight infections by making antibodies that recognise and attack germs. These cells crowd out normal bone marrow cells and may spread to other parts of the body, hence the term multiple myeloma.

Myeloma causes symptoms that need treatment for a period, followed by a period of remission where symptoms subside and do not need any treatment. This cycle of remission and recurrence (relapse) often occurs several times over. Your treatment may involve taking a combination of drugs, including some that have been introduced in recent years and have drastically improved myeloma treatment. Combinations of these have been found to be more effective than single drugs. Unfortunately there is not yet a permanent cure but you can expect to enjoy a good quality of life for many years.
According to the European Medicines Agency (EMA), thalidomide is approved in patients with multiple myeloma who have not been treated for this disease before and who are older than 65 or younger if they cannot be treated with anticancer chemotherapy.

Thalidomide is a medicine which can modulate the activity of the immune system (immunomodulation). It blocks the development of cancer cells, and stimulates the body’s defence mechanisms.

As multiple myeloma is considered a ‘rare disease’ because of the small number of patients with this disease, thalidomide has the designation of ‘orphan medicine’ because it is used in a rare disease.

Thalidomide and its analogues — lenalidomide and pomalidomide, so far — are a group of medicines used in the treatment of multiple myeloma. They work by modulating some activities of the immune system.

Thalidomide modulates the action of the immune system in several ways, of which the best known are:

- It reduces the production by immune cells of a substance (a cytokine) called tumour necrosis factor (TNF-α) and of other pro-inflammatory cytokines which can promote the growth of cancer cells.
- It reduces a process called angiogenesis, consisting of the generation of new blood vessels, which promotes the growth of tumours.
- It induces the death of myeloma cells.

Thalidomide is indicated by the EMA in the treatment of multiple myeloma in combination with two more anti-cancer medicines — melphalan and prednisone — for patients with myeloma who have not been treated for this disease before and who are older than 65 or younger if they cannot be treated with anti-cancer chemotherapy. And this combination is one of the standards of care for transplant-ineligible patients (another possible combination is bortezomib, melphalan and prednisone).

In addition, thalidomide can be used as recommended by the European Myeloma Network in: 1) induction therapy — to increase the response before an autologous stem cell transplantation — in a triple combination of bortezomib, thalidomide and dexamethasone, 2) maintenance therapy after autologous stem cell transplantation, in a combination of bortezomib, thalidomide and dexamethasone.

Thalidomide is also used in patients previously treated with other therapies not effective against multiple myeloma.
Thalidomide produces congenital malformations. It is absolutely contraindicated in pregnant women or in women who may become pregnant. You should consult your doctor if you are or think that you may be pregnant.

Sedation is one of the most frequent side-effects, so thalidomide is taken at night.

Constipation is very common. It can be often controlled by a combination of generous fluid intake, stool softeners, and laxatives.

Dry skin and itching are frequently noted. They can be prevented by using non-alcohol-based lubricants and by avoiding hot baths. Occasionally, a true skin rash occurs — which requires a temporary cessation of thalidomide, with resumption at a lower dose.

Tingling, pain and numbness in the hands and feet (sensorimotor peripheral neuropathy) may occur, particularly after taking thalidomide for long periods.

Less common side-effects include swelling in the legs, shaking, slowing of the heartbeat or a reduction of the thyroid hormones.

Reduction of a type of white blood cells called neutrophils or impaired liver function are very rare side-effects.

The recommended dose of thalidomide is four capsules a day (i.e., 200 mg, because each capsule contains 50 mg), taken at the same time, preferably at bedtime. In patients over 75 years of age a starting dose of two capsules (100 mg) a day is recommended.

Thalidomide can be used for a maximum of 12 treatment cycles, with each cycle lasting six weeks. The doctor may delay, reduce or stop doses if the patient experiences certain side-effects.

Patients also receive an anticoagulant (a medicine to prevent the formation of blood clots) for at least the first five months of treatment.
References


