

Daratumumab (Darzalex®)

What is daratumumab?

Daratumumab belongs to a group of drugs called monoclonal antibodies and is the first of its kind to be used in the treatment of myeloma. Daratumumab works by attaching to a protein that is present on the surface of myeloma cells, called CD38, signalling the immune system to attack.

How does daratumumab work?

Monoclonal antibodies are made in the laboratory to mimic the antibodies that your own immune system produces in response to foreign organisms (such as bacteria) that enter the body. Monoclonal means “derived from a single type”; this means that each group of monoclonal antibodies is made up of identical copies of one type of antibody, in this case anti-CD38.

Myeloma cells produce a protein called CD38 which is present on the cell surface. Much like the immune system’s response to bacteria, daratumumab attaches to the CD38 protein found on the surface of myeloma cells, and thus attracting cells of the immune system to target and kill it.

How is daratumumab given?

Daratumumab is given as an intravenous (IV) infusion at a dose of 16 milligrams per kilogram (mg/kg) of body weight. The regimen used will vary according to each hospital’s policy or clinical trial protocol. Daratumumab is usually continued for as long as deemed beneficial for the patient.

Due to the chance of an allergic reaction to daratumumab, premedications of a corticosteroid, antihistamine and paracetamol are given at least one hour prior to the commencement of the infusion. The first dose is then given very slowly over seven hours.

If there has been no reaction with the first dose, the infusion length can be shortened to just over four hours for subsequent doses.

The shortest recommended infusion time is three and a half hours providing there have been no problems.

If there has been an infusion reaction, the administration length may stay at seven hours. Signs and symptoms of an infusion reaction are explained in the side effects section.

Though daratumumab has been shown to work on its own (as a monotherapy), its effects have been shown to be enhanced when given in combination with other anti-myeloma treatments such as dexamethasone and bortezomib (Velcade®) or lenalidomide (Revlimid®).

When is daratumumab available for use in Australia on the Pharmaceutical Benefits Scheme (PBS)?

Daratumumab is subsidised through the PBS in combination with bortezomib (Velcade®) and dexamethasone. It is currently only available as a second line treatment.

It is also possible to have daratumumab as part of a clinical trial in combination with other therapies. The doctor can advise when a clinical trial is appropriate.

How to tell if daratumumab is working?

Patients may observe a reduction in the symptoms caused by the myeloma associated with an improved quality of life. The doctor will also order tests at the start of each treatment cycle to monitor response. These tests may vary from patient to patient but generally include regular blood and/or urine testing and occasional x-rays or bone marrow biopsies.

What are the possible side effects? Infusion/allergic reaction

In clinical trials, roughly half of patients who received daratumumab experienced an infusion or allergic reaction. Usually, the reactions are only mild and virtually all reactions are manageable.

Signs and symptoms of an infusion or allergic reaction include; nasal congestion, cough, itchy throat, chills, feeling flushed, vomiting and nausea. More severe symptoms include difficulty breathing, throat tightness and high blood pressure.

The nurse should be alerted immediately if any of these symptoms are experienced. They will then stop the infusion until symptoms subside and administer medication if required. In most cases the infusion can be completed slowly once symptoms have resolved.

It is extremely rare for someone to have an infusion reaction during the second dose of daratumumab and beyond.

Blood transfusion cross matching interference

Daratumumab can interfere with the compatibility tests taken prior to a blood transfusion. Therefore, it is important that comprehensive blood typing is performed before the patient receives their first dose of daratumumab. The interference from daratumumab can last for up to 6 months after the final dose of daratumumab.

If a transfusion is required while receiving treatment with daratumumab the blood bank will perform comprehensive testing to ensure an accurate match. All health care providers should be made aware that the patient is receiving daratumumab treatment before any blood transfusions take place.

Fatigue

Many patients on daratumumab experience fatigue. It can be difficult to distinguish between fatigue that is directly related to daratumumab treatment and fatigue that is caused by the myeloma itself. A balanced diet, adequate fluid intake, regular exercise and adequate sleep can help minimise the effects of fatigue.

Low blood counts

On its own, daratumumab rarely causes a decrease in the number of red blood cells, white blood cells and platelets in the blood. However, patients receiving daratumumab may experience low blood counts due to their myeloma or other drugs in combination.

A low red blood cell count may cause anaemia and fatigue. If anaemic, a blood transfusion may be necessary.

A low white blood cell count will increase the risk of infection. People having daratumumab treatment are especially susceptible to upper respiratory tract infections. To avoid infections, extra precautions will be required such as diligent hand washing and avoidance of people with infections. A sign of infection is a fever or temperature of 38°C or above.

*If a patient's temperature is 38°C or above,
medical attention must be sought immediately*

If the white cell count is consistently low, it may be necessary to have an injection of granulocyte-colony stimulating factor (G-CSF), to increase the white blood cell count. The doctor will also prescribe medication to help prevent infections.

A low platelet count (thrombocytopenia) increases the risk of bruising and bleeding. If the platelet count is too low a platelet transfusion may be required.

The blood counts will be measured regularly to monitor for changes. In some cases, treatment may be delayed until blood counts have improved.

Back and joint pain

Some people described experiencing back and joint pain while on daratumumab treatment. As pain can also be caused by myeloma itself, always report any new pain to the doctor.

Published by Myeloma Australia February 2021. Thank you to Myeloma UK whose fact sheet formed the basis of this publication.

**For further information please contact our Myeloma Support
Nurses on our toll free Support Line:**

1800 MYELOMA (1800 693 566)
or visit our website: www.myeloma.org.au