

Disease Modifying Therapies for MS

Disease modifying therapy (DMT) options for multiple sclerosis (MS) vary in their efficacy and potential side effects. Patients and their specialists should carefully weigh the benefits and risks of each treatment before making a decision. Close monitoring is essential to identify and manage any potential side effects.

Interferon beta-1a (Avonex, Rebif) and interferon beta-1b (Betaseron, Extavia) are injectable treatments for relapsing forms of MS. They work by reducing inflammation and reducing the risk of relapses. Side effects can include flu-like symptoms, injection-site reactions, and depression. These treatments have been available for many years and are considered safe.

Glatiramer acetate (Copaxone) is an injectable treatment for relapsing forms of MS. It works by blocking myelin-damaging immune cells and promoting the growth of myelin. Side effects can include injection-site reactions, flushing, and chest tightness.

Dimethyl fumarate (Tecfidera) is an oral treatment for relapsing forms of MS. It works by reducing inflammation and oxidative stress in the brain and spinal cord. Side effects can include flushing, gastrointestinal symptoms, and a decrease in white blood cell count.

Teriflunomide (Aubagio) is an oral treatment for relapsing forms of MS. It works by reducing inflammation and slowing the progression of the disease. Side effects can include gastrointestinal symptoms, hair loss, and a decrease in white blood cell count.

Cladribine (also known as Mavenclad) is an oral medication used for the treatment of relapsing-remitting multiple sclerosis (RRMS). It works by selectively targeting and depleting immune cells that are involved in the disease process. Cladribine is taken in two short courses, one year apart, making it a convenient treatment option for patients. It has been shown to significantly reduce the relapse rate and delay disability progression in RRMS patients. However, due to potential serious adverse effects, including the risk of infections and malignancy, it is generally reserved for patients who have not responded to or cannot tolerate other disease-modifying treatments.

Natalizumab (Tysabri) is a monoclonal antibody used in the treatment of relapsing forms of MS. It works by binding to alpha-4 integrins, which are molecules that help immune cells cross the blood-brain barrier and cause damage to myelin. By blocking these molecules, natalizumab prevents immune cells from reaching the brain and causing inflammation. Natalizumab is given as an intravenous infusion once every four weeks. It has been associated with a rare but serious brain infection called progressive multifocal leukoencephalopathy (PML), so patients receiving natalizumab are carefully monitored for signs of this infection.

Alemtuzumab is a monoclonal antibody that is used in the treatment of relapsing forms of MS. It targets a protein called CD52, which is found on the surface of immune cells. By binding to CD52, alemtuzumab destroys immune cells and reduces inflammation in the brain and spinal cord. Alemtuzumab is given as an intravenous infusion over five consecutive days, followed by a second course of three consecutive days one year later. It has been associated with serious side effects, including infections, autoimmune disorders, and bleeding disorders.

Ocrelizumab is a monoclonal antibody used in the treatment of relapsing forms of MS and primary progressive MS. It targets a protein called CD20, which is found on the surface of B cells, a type of immune cell. By binding to CD20, ocrelizumab destroys B cells and reduces inflammation in the brain and spinal cord. Ocrelizumab is given as an intravenous infusion once every six months. It has been associated with serious side effects, including infections and infusion-related reactions.

Fingolimod is an oral medication used in the treatment of relapsing forms of MS. It works by binding to a receptor called S1P, which is found on the surface of immune cells. By binding to this receptor, fingolimod prevents immune cells from leaving the lymph nodes and entering the bloodstream, reducing inflammation in the brain and spinal cord. Fingolimod is taken as a daily pill. It has been associated with serious side effects, including infections and heart problems.