Remitting multiple sclerosis: Natalizumab reduces relapses and disability

October 5 2011

Taking the new generation anti-inflammatory drug natalizumab for two years lowers the number of remitting multiple sclerosis patients who experience relapses and progression of disability. This is the main finding of a systematic review published in the latest edition of *The Cochrane Library*.

Multiple sclerosis (MS) is a disease that damages a person's nervous system. The symptoms vary considerably from person to person, but many have a form of the disease in which they feel healthy for a time, and then relapse into periods of ill health. Over time, the disease tends to develop into a permanent disability. The aim of many treatments is to increase the period of remission that MS patients have between each relapse, and to delay the progression to the full disease for as long as possible.

Part of the body's defensive immune system involves a type of white blood cell that actively moves to areas where there is disease or damage. This movement causes the swelling associated with inflammation. Natalizumab, normally abbreviated as NTZ, is an advanced form of medicine that prevents some of these white blood cells passing from blood vessels into the brain. As MS is closely linked to inflammation, the theory is that blocking this passage of cells might help reduce the symptoms.

By searching through the medical literature a team of researchers working in Italy and the UK found three trials that met their inclusion

criteria. Together these trials involved over two thousand patients, and showed that after two years of treatment, NTZ reduced the risk of experiencing at least one new bout of disease at two years by about 40%, and the number who had disability progression over the two years was reduced by 25%. MRI brain scans also showed evidence that NTZ had reduced disease activity.

"Our analysis indicated that NTZ is well tolerated and safe over a period of up to two years," says study leader Eugenio Pucci, who works at the neurological unit in Macerata, Italy.

Using it, however, is not simple, and two patients in the trials did develop progressive multifocal leukoencephalopathy (PML), a rare and often fatal brain disease caused by the virus named JCV. There wasn't enough data in the original trials to show a definite risk associated with NTZ. However, surveillance programs are in place in several countries watching for any signs of a link. "Various factors seem to increase the risk of developing PML, including the number of NTZ infusions a person receives, whether the patient has had previous immunosuppressive treatment and if their blood contains antibodies against JCV," says Pucci.

Consequently Pucci and his colleagues believe that NTZ should be used only by skilled neurologists in MS centres under national or international surveillance programs.

Because of the safety concerns and the considerable cost of using NTZ, Pucci is keen to see further research that will show which category of MS patient would gain most from the medication.

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