

# Medical Update Memo

September 22, 2009

**Asymptomatic reactivation of JC virus in patients treated with natalizumab**

## Summary

Progressive multifocal leukoencephalopathy (PML) occurs in a fraction of patients with multiple sclerosis who were treated with natalizumab. Most adults who are infected with the JC virus, the etiologic agent in PML, do not have symptoms. Authors sought to determine whether exposure to natalizumab causes subclinical reactivation and neurotropic transformation of JC virus. *N Engl J Med.* 2009 Sep 10;361(11):1067-74

## Details

Natalizumab is the most recently approved treatment for MS. Its efficacy has been demonstrated in clinical trials and practice. However, despite these clinical effects, there is a risk of progressive multifocal leukoencephalopathy (PML), which can result in death or severe disability. Therefore its use has been restricted to people with a non-satisfactory response to first line treatments, such as interferon beta and glatiramer acetate. PML occurs after a reactivation of the common JC virus, which remains latent in the kidney and lymphoid organs, after infection. The mechanisms by which this reactivation may occur in people receiving natalizumab are unclear. The authors studied a group of people with MS receiving natalizumab treatment. The main findings of the study were that evidence of potential JC virus reactivation were discovered, as the virus was detected in the urine samples of more than half of the study population after one year of treatment. In addition, after one and a half years, the JC virus was detected in the blood samples of a fifth of the population. None of the participants suffered from PML during the study. Although the mechanisms underlying the reactivation of JC virus remain unclear, these results shed new light on these issues, which might help to design new algorithms for the management of people with MS on natalizumab in order to avoid PML developing.

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