LONGITUDINAL CD4 AND CD8 COUNTS IN MULTIPLE SCLEROSIS PATIENTS ON NATALIZUMAB

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Background: Natalizumab is a humanized monoclonal antibody directed against alpha-4 integrin, which reduces disease activity in patients with multiple sclerosis (MS) by blocking migration of lymphocytes into the central nervous system (CNS). There has been concern over the degree of immunomodulation or immunosuppression of the CNS in patients treated with natalizumab, with 31 reported cases of progressive multifocal leukoencephalopathy (PML) noted in 60,000+ patients treated worldwide. PML is a rare condition previously seen only in severely immunocompromised patients such as those with AIDS or artificially immunosuppressed organ transplant. Recent reports suggest that the risk of developing PML in natalizumab-treated MS patients rises after 2 years of therapy. Objectives: To assess the degree of immunomodulation or immunocompromise seen in patients treated with natalizumab for up to 41 months of therapy. Methods: The CD4 and CD8 counts and CD4/CD8 ratios of 24 patients treated with natalizumab over the course of 19 months were collected in a tertiary MS center in Seattle, WA. The patients had variable months of exposure at the time of initial data collection, ranging from 2 months to 23 months. The longest duration of natalizumab exposure for which these counts were available was 41 months of therapy. Results: A gradual drop of CD4 counts and CD4/CD8 ratio were noted at approximately 24 months of drug exposure. CD8 counts showed a mild initial drop at 6 months of therapy with return to baseline and remained stable after 10 months of therapy. Conclusions: There appears to be a drop in CD4/helper T lymphocytes both in absolute numbers and in CD4/CD8 ratios at approximately 2 years of natalizumab drug exposure, which may result in decreased immune response that predisposes to PML.


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