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Cytomegalovirus reactivation during alemtuzumab treatment in a patient with multiple sclerosis

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Objective: To better manage viral infections in multiple sclerosis (MS) patients treated with alemtuzumab.

Background: Alemtuzumab, an highly- effective immunosuppressive monoclonal antibody used in relapsing-remitting multiple sclerosis (RRMS) treatment, induces a long-standing lymphopenia, particularly of T CD4+ subset. Previous reports showed that Cytomegalovirus (CMV) reactivation occurs in 15-25% B-CLL patients receiving alemtuzumab. The reactivation usually occurs between 3 and 6 weeks after treatment, soon after the T cell count nadir. This reactivation should be recognized promptly to prevent CMV fatal complications. There are no guidelines regarding the monitoring of CMV-DNA in MS patients treated with alemtuzumab.

Design and methods: A 29 year old woman with highly active MS form (three relapses in six months after ending natalizumab 24 courses) was treated with the first alemtuzumab course (12 mg/day for 5 consecutive days). According to guidelines, oral prophylaxis for herpes infection was administered starting on the first day with acyclovir 200 mg twice a day. CMV DNA was tested with the PCR technology before treatment and weekly thereafter.

Results: CMV DNA before treatment was negative. After a week the viral load (number of copies per ml) was 9800/ml and after two weeks 21900/ml. Patient referred abdominal pain and nausea. The patient was hospitalized, acyclovir was discontinued and patient was treated with ganciclovir 250 mg twice a day i.v. for 5 days. Patient became asymptomatic already after the first day of treatment and viral load went down to zero five days after.

Conclusions: We recommend to perform a PCR CMV test weekly after alemtuzumab course even in asymptomatic patients, due to the possible rapid reactivation of CMV. To prevent serious adverse events, ganciclovir should be initiated in PCR CMV positive patients, and continued till the negativity of CMV viral load.

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