THE REDUCTION OF NATALIZUMAB-INDUCED LYMPHOCYTOSIS CAN PREDICT MULTIPLE SCLEROSIS REACTIVATION

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Objectives

To highlight a correlation between clinical relapses and lymphocytosis induced in patients with multiple sclerosis treated with Natalizumab.

Materials

50 patients, 30 females and 20 males, treated with Natalizumab 300 mg for month, from 2009 to 2014 with a range from 16 to 61 infusions with a mean age of 33.8 years; 46 patients affected by relapsing remitting multiple sclerosis and 10 patient with secondary progressive form with exacerbations. Mean EDSS was 3,3 and the mean duration of disease was 176,79 months. The peripheral lymphocytes count was monitored every month at 24 h before Natalizumab infusion and at clinical relapse, before steroid treatment.

Results

15 of 50 patients (30%) had clinical relapses during treatment with Natalizumab. We observed that the increase of percentage of lymphocytes was higher in no relapsed group compared to the relapsed group (see Figure 1). Furthermore in this latter group the normalized value of lymphocytes was increased during treatment with progressive reduction at the time of relapses (see Figures 2-3). Ab anti-Natalizumab positivity was present only in one patient, within the relapsed group, who from the beginning of therapy never showed an increase in lymphocytes count (see Figure 4).

Discussion and conclusions

The treatment with Natalizumab, the first monoclonal antibody for MS therapy targeting α4β1 integrins, is a highly active in the patients with severe relapsing MS course. During treatment, already after one month of therapy, there is an inversion of the white blood cell count with lymphocytes induced, as result of the sequestration of circulating lymphocytes and other mechanisms. In our population, we observe a reduction of the lymphocytosis induced before and during relapses in patient treated with Natalizumab and that the patients who relapsed present a lower percentage of lymphocytes compared with no relapsed group. Recent observations described that high percentage of lymphocytes during treatment reduced risk of early relapsing after treatment suspension. The evidence of a correlation between the induced lymphocytosis and increased therapeutic efficacy of natalizumab, leads us to hypothesize the use as a biomarker of therapy.

Bibliography