A real-life retrospective study on patients with Relapsing-Remitting Multiple Sclerosis treated with Natalizumab: how much the JCV status antibodies influence the clinical choice?

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INTRODUCTION AND AIM

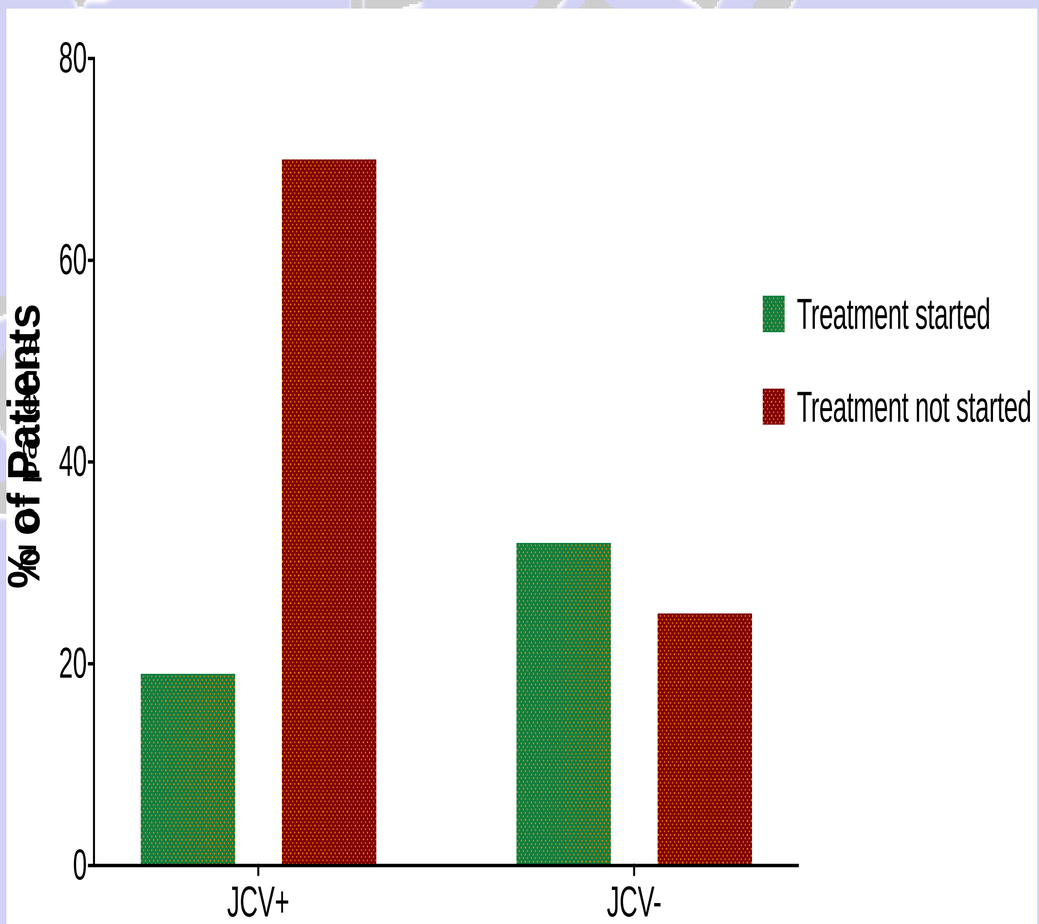
Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease of the central nervous system (CNS). Natalizumab is a highly effective drug able to limit immune cells migration in the CNS in MS patients. Progressive multifocal leukoencephalopathy (PML) is one of the major risks of natalizumab therapy. The risk of PML may be stratified according to the presence of anti-JCV antibodies (JCVAb), treatment duration and previous immunosuppressant use (IS+). The aim of our study was to evaluate the impact of the assessment of JCV serostatus in a MS patients cohort suitable for natalizumab therapy and how this influenced the following therapeutic choices.

PATIENTS AND METHODS

We performed a retrospective study on 145 consecutive RRMS patients tested for JCVAb status for the possible initiation of natalizumab therapy over a 5 year period (2011-2016). Patients were tested either once or every 6 months if they were subsequently started on natalizumab. All tests were performed using STRATIFY test 1 and 2 for JCVAb Index.

RESULTS

In the examined cohort (mean age 37±10 years; F/M 3.2) the mean disease duration was 9,5±6 years and the prevalence of IS+ subjects was 6,9%. At the baseline, 89 patients (61%) were JCVAb+. JCVAb Index (available for 69/89 patients) was >1,5 in 49,3% of cases. Out of the tested patients, 51/145 (35%) were started on natalizumab (1% of them were IS+, 13,7% were JCVAb+ with a JCVAb Index <1,5). In the treated patients, seroconversion to JCVAb+ occurred in 15,7% of them after 15,6±8,4 months and the first JCVAb+ test had an Index >1,5 in 25% of cases. Out of the 51 treated patients, 26 (51%) discontinued natalizumab treatment. The reasons for discontinuation were: (i) a high risk of PML (73%) (47,4% were IS+, 100% were JCVAb+ and 67% of the available JCVAb Index was >1,5); (ii) anti-natalizumab antibodies (11,3%); (iii) pregnancy (7,7%) and (iv) hypersensitivity drug reaction (7,7%). The mean duration of treatment was 24±11 months. No PML cases occurred.



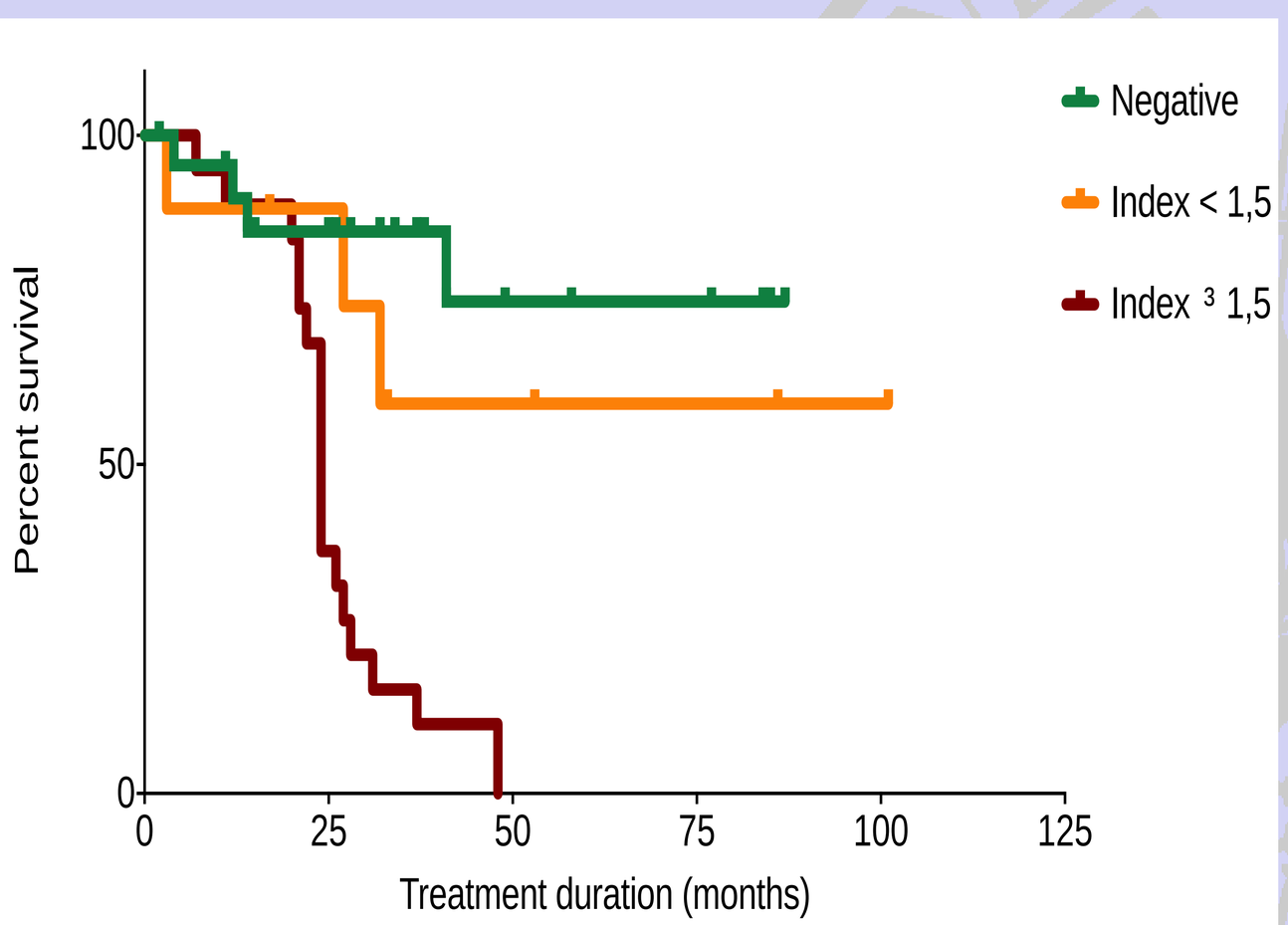


Figure 1 shows the percentage of patients tested at baseline (JCVAb - and JCVAb +) who were started or not on natalizumab. JCVAb serostatus at baseline influences therapeutic decision (p<0,0001. Fisher exact test)

Figure 2: JCVAb serostatus influences remaining or discontinuing natalizumab treatment. (p<0,0001. Log-rank test)

DISCUSSION AND CONCLUSION

In our cohort, 88% of patients starting natalizumab were JCVAb- or had a JCVAb Index <1,5 (100%). All patients who discontinued the treatment because of a high PML risk were JCVAb+, with JCVAb Index >1,5 in 68% of cases. In our cohort JCVAb status and JCVAb Index deeply influenced therapeutic decision-making (Fig. 1-2).

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