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BACKGROUND AND AIMS

Background: The ability of monoclonal antibodies (MoAbs) targeting CD20, such as ocrelizumab (Ocr) and ofatumumab (Ofa), to selectively reduce circulating B cells through their action on the CD20 receptor is well established. However, their high efficacy might also be explained by additional mechanisms. A subset of T cells also expresses CD20 and can be modulated by Ocr and Ofa. This suggests that the activity of these drugs and their interaction with the immune system is complex and not yet fully understood.

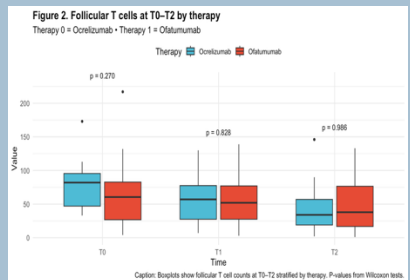
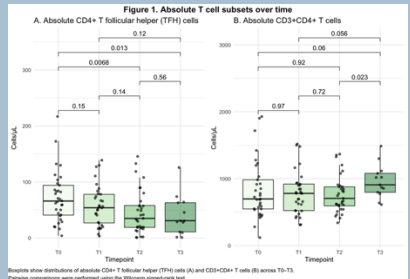
Objective: To study and analyze the changes in T cells during treatment with Ocr and Ofa in patients with multiple sclerosis (pwMS)

METHODS

At the time of this analysis, 33 pwMS were studied before initiating anti-CD20 therapy. The enrolled patients included both treatment naive individuals and those switching from other disease-modifying therapies (DMTs). Each patient underwent a washout period of 3 to 4 months, followed by blood sampling at baseline (T0), at 3 months (T1), and at 6 months (T2) after starting therapy with Ocr or Ofa. Flow-cytometry was used to analyze lymphocyte subtypes. A broad panel of lymphocyte markers was assessed, including CD19, CD20, CD4, CD8, CD45R, CD45RO+, CXCR5, CD21+, CD38, CD27, CD28, and CD31 [1].

RESULTS

B-cell depletion was rapidly achieved at T1 and T2 for all the patients. We also observed a significant reduction of CD4+ follicular like CD45RA-CXCR5+ cells. In particular, the baseline mean value was 72.9 cells for mm3(c) (standard deviation 45.7) both at T1 (mean: 57,3 (c), SD: 35,9) and T2 (mean: 46,4 (c), SD: 39) and T3 (mean: 39,6 (c), SD: 35,2 numbers of CD45RA- CXCR5+ were diminished. The observed trends of reductions were statistically significant chiefly between T0 and T2 ($p=0,0068$) (Fig 1). Moreover there aren't differences between Ocre and Ofa (Fig 2). No relapse and any severe infection occurred during the study period.



DISCUSSION AND CONCLUSION

Anti-CD20 treatment targets both B and T cells. The observed reduction in CD4+ T lymphocytes suggests that the mechanism of action of Ocre and Ofa may be pleiotropic, as T cells play a role in the activation and regulation of B cells. This effect on T lymphocytes could also help explain the high efficacy of these therapies

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