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No lack of regulatory B cells in patients with Multiple Sclerosis

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Background

Recent data support a prominent role for B cells in MS physiopathology. Recently it has emerged that subsets of B cells secreting IL-10 negatively regulate disease symptoms in Experimental Autoimmune Encephalomyelitis (EAE). However, the involvement of such regulatory B cells in MS remains unclear.

Aim

We aimed to study the frequency, phenotype and function of regulatory B cells in MS patients as compared to Healthy Volunteers (HV).

Methods

Sixty-three untreated MS patients and 58 HV were included in this study. IL-10 secretion by B cells and phenotype of IL-10$^+$ B cells were studied after 5h (B10 cells) and 48h of stimulation (B10pro cells) by CD40L and ODN. Coculture assays with prestimulated B cells and responding CD4$^+$CD25$^-$ T cells were performed for 3 days.

Results

No significant difference was found either for IL-10 secretion ability of B cells after 5h or 48h of stimulation. The analysis of B10pro cells phenotype revealed mainly a memory phenotype in MS and HV, even if both naïve and immature subsets were also able to secrete IL-10. Prestimulated B cells from MS inhibited CD4$^+$CD25$^-$ T cell proliferation in the same manner than HV by a contact dependent mechanism, independently of IL-10 and TGF-β secretion.

Conclusion

Altogether, our data show that regulatory B cells have a conserved frequency, phenotype and function in the blood of patients with MS suggesting that B cells do not contribute to the physiopathology of the disease.

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