Title:

IgG & IgM changes in PPMS vs RRMS patients during long-term CD20 depleting therapy

Authors:

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Abstract body:

Introduction: Ocrevus, as a humanized CD20 monoclonal antibody is expected to be less immunogenic with repeated infusion and to have a more favorable benefit-risk profile than Rituximab, a chimeric anti-CD20 monoclonal antibody[1,2]. In British Columbia, Ocrevus is covered by public insurance only for primary progressive MS (PPMS) and Rituximab for relapsing-remitting MS (RRMS)[3]. The purpose was to investigate differences in Immunoglobulin G/M (IgG, IgM) between PPMS and RRMS patients after multiple years of CD20-depleting therapy.

Methods: During a retrospective chart review, IgG and IgM concentrations of MS patients on CD20 depleting therapy for at least 3 years were reported longitudinally and analyzed. An independent two-way t-test was used to assess differences in concentrations and a Fisher's Exact test was run to assess differences in abnormal IgG/IgM between PPMS patients (on Ocrevus) and RRMS patients (on Rituximab).

Results: 12 PPMS (on Ocrevus) and 12 RRMS (on Rituximab) patients had been on therapy for an average of 3.5 years. In each group, 8 patients (66.7%) were females. The mean age for PPMS and RRMS patients was 54 and 49, respectively (p= 0.3). The mean baseline IgG/IgM concentrations for PPMS and RRMS patients were 8.95/0.68 g/L and 10.04/0.8 g/L respectively, which is within normal range (IgG 7.0-16.0 g/L and IgM 0.4-2.3 g/L). The mean of the last reported IgG/IgM for PPMS and RRMS patients were 7.87/0.44 g/L and 9.39/0.54 g/L, respectively. Differences in baseline and last reported IgG/IgM levels between groups were not significant (p=0.35/0.13, p=0.33/0.41). 9 PPMS patients had abnormal IgG or IgM compared to 3 RRMS patients, which was significantly different (p=0.039).

Significance: This study raises the possibility of a progressive course of MS influencing IgG/IgM levels in patients with long-term use of CD20-depleting therapy. Future studies in this field with greater sample sizes may provide insights to improve MS management.

References

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