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Serum IgG Antibodies to GM1 and GD1a Gangliosides in a Patient with Relapsing-Remitting Multiple Sclerosis under Treatment with Glatiramer Acetate. A 15-year Longitudinal Study

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Multiple sclerosis (MS) is a coplex and heterogeneous, most likely autoimmune, demyelinating disease of the central nervous system (CNS). The IgG antibodies can serve as biomarkers indicating nervous system chronic dysfunction. Titers of the serum IgG anti-GM1 antibodies are associated as potential biomarkers with the diagnosis of demyelination whilst the serum IgG anti-GD1a antibodies are associated with neurodegeneration and acute motor axonal neuropathy. This study presents the case of a patient with 20 years relapsing – remitting MS (RRMS) who is under treatment with the immunomodulator Glatiramer acetate (GA) for 15 years. During these years the patient has had pregnancy, child-birth, post-partum and long periods of remission. Hormones produced during pregnancy, could reverse some of the neurological damages, associated with MS. Our long-term study showed that the patient responds very well to treatment with GA. She has a family, a child, career and chance for a normal life. Our immunological methods demonstrated lack of demyelination and evident neuroprotection.

Key words: relapsing-remitting multiple sclerosis (RRMS), glatiramer acetate (GA), serum IgG anti-GD1a and anti-GM1 antibodies, ELISA