# Galactosylation of serum immunoglobulin G in myasthenia gravis with different autoantibodies


## Abstract

Myasthenia gravis (MG) is a disease with impaired transmission at the neuromuscular junction, characterised by weakness and fatigability of skeletal muscles. In acquired autoimmune MG, antibodies against acetylcholine receptor (AChRAb) or muscle-specific tyrosine kinase (MuSKAb) are present. There is not much data about immunoglobulin G (IgG) galactosylation in MG, and none based on interactions with lectins. This study aims to examine IgG galactosylation in two types of myasthenia, using affinity immunoelectrophoresis with lectin concanavalin A (Con A). Affinity of Con A–IgG interaction, expressed as retardation coefficient (R), indicated the presence of degalactosylated IgG. The average *R* values were significantly different between three examined groups, being the lowest in controls (healthy subjects), higher in acetylcholine receptor (AChR) MG, and the highest in muscle-specific tyrosine kinase (MuSK) MG (ANOVA, $p < .05$). This indicated decreased galactosylation of IgG in both types of MG compared to controls, more pronounced in MuSK MG. IgG galactosylation was also investigated in relation to the disease severity score, determined according to the Myasthenia Gravis Foundation of America (MGFA) criteria, at the time of diagnosis, nadir of the disease and last check-out visit. The average *R* values for mild disease (stages I–IIIa) were significantly lower than for severe disease (stages IIIb–V), both at the time of diagnosis ($p < .05$), and at the nadir of the disease ($p < .05$). Thus, IgG galactosylation was associated with the presence of specific autoantibodies in MG, as well as with disease severity for both types of MG, and may be a predictive marker of MG outcome.