IMMUNOBIOLOGY OF MYASTHENIA GRAVIS: RAGE AND RAGE LIGANDS

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Objective: Myasthenia gravis (MG) is a T- and B-cell mediated autoimmune disorder with potentially fatal outcome for affected patients. The Receptor for Advanced Glycation Endproducts (RAGE) plays a role in the amplification of chronic inflammatory disorders and autoimmune diseases. We sought to investigate the role of RAGE and its ligands in the pathophysiology of MG. Methods: In this cross-sectional study we enrolled 42 patients with MG and 36 volunteers. We employed immunosorbent assays to determine the concentration of soluble RAGE (sRAGE) and high mobility group box 1 (HMGB1) in serum of patients and volunteers. In a subpopulation of patients we measured the serum levels of endogenous secretory (es) RAGE and various RAGE ligands, such as S100B, S100A8 and AGE-CML. Reported are means and standard error mean. Results: We found significantly reduced levels of the soluble receptors sRAGE and esRAGE in patients with MG compared to healthy volunteers (sRAGE [pg/ml] 927.22 ± 80.79 vs. 1400.05 ± 92.35; $p<0.001$; esRAGE [pg/ml] 273.5 ± 24.6 vs. 449.0 ± 22.4; $p<0.001$). Further categorization of patients with MG will be shown. There were no statistically significant differences in the concentrations of the ligands between MG patients and volunteers (S100B [pg/ml] 22.5 ± 22.5 vs. 14.4 ± 9.2; $p=0.698$; S100A8 [pg/ml] 107.0 ± 59.3 vs. 242.5 ± 103.6; $p=0.347$; HMGB1 [ng/ml] 1.65 ± 0.12 vs. 2.13 ± 0.23; $p=0.058$; and AGE-CML [ng/ml] 1100.8 ± 175.1 vs. 1399.8 ± 132.8; $p=0.179$). Conclusions: Our data suggest a role for the RAGE pathway in the pathophysiology of MG.