Iron Metabolism in Non-anemic Myasthenia Gravis Patients: A Cohort Study

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Objective

The primary objectives of the research were to identify clinical factors associated with disease severity and minimal manifestation status (MMS) induction in non-anemic immunotherapy-naïve myasthenia gravis (MG) patients first receiving immunotherapy, with iron metabolism parameters specifically focused.

Background

Iron is a microelement indispensable for physiological and pathophysiological processes of living organisms. Recent studies have shown that iron metabolism disorders might be evident in neuroimmune diseases including multiple sclerosis, polymyositis, dermatomyositis, etc. However, to our knowledge, few published studies have analyzed the association of iron metabolism parameters with disease severity and clinical outcome in MG patients.

Design/Methods

One hundred and ten patients were included at baseline to explore predictor variables associated with disease severity represented by variables derived from MG activities of daily living (MG-ADL) score using multivariate logistic regression. Subsequently, 103 and 98 patients were included respectively in multivariate survival analyses at 6-month and 12-month follow-up to identify predictors for MMS after starting immunotherapy.

Results

Higher ferritin level was independently associated with higher risk of severe generalized disease in non-anemic immunotherapy-naïve MG patients. Total iron binding capacity < 250 μg/dL and the interval between onset and immunotherapy < 1 year were independent predictors for MMS at both 6-month and 12-month follow-up after initiating immunotherapy. Transferrin < 2.00 g/L was an independent predictor for MMS at 12-month follow-up.

Conclusions

Iron metabolism parameters might be promising biomarkers for evaluating disease severity and guiding therapeutic decision-making in MG patients.