

# Iron Metabolism Patterns in Non-anemic Myasthenia Gravis Patients: A Cross-sectional and Follow-up Study

**Authors:** Ke Li; Li'an Hou; Ying Tan; Yangyu Huang; Jiayu Shi; Jianhua Han; Jingwen Yan; Yuzhou Guan

**Affiliations:** Department of Neurology; Department of Laboratory Medicine, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College

## Objective

The primary objectives of the study were to compare iron metabolism patterns between non-anemic immunotherapy-naïve myasthenia gravis (MG) patients and healthy controls, as well as between the same group of MG patients before and after receiving immunotherapy, and to identify predictors associated with iron metabolism abnormalities in these patients.

## Background

Recent evidence has indicated that iron metabolism disorders might be prominent in neuroimmune diseases including multiple sclerosis, polymyositis, dermatomyositis, etc. Nonetheless, few published studies have investigated iron metabolism patterns in MG patients and factors associated with it.

## Design/Methods

One hundred and five patients and healthy individuals were included at baseline. Paired parametric and non-parametric tests were adopted to compare their iron metabolism patterns, and multivariate binary logistic regression was used to identify predictors for iron metabolism disorders. MG patients were then followed up for  $(12 \pm 3)$  months to explore alterations in their iron metabolism patterns using paired tests.

## Results

Non-anemic immunotherapy-naïve MG patients had significantly lower serum iron (SI) and transferrin saturation (TS) levels compared with healthy individuals. Premenopausal female status was significantly associated with  $SI < 65 \mu\text{g/dL}$  and iron deficiency in these patients. Iron metabolism parameters did not alter significantly after receiving immunotherapy for approximately 12 months in MG patients.

## Conclusions

Iron inadequacy was present in MG patients, particularly in premenopausal female patients, and would hardly improve after immunotherapy. Given the essential role of iron in the human body, it should be given more attention in MG patients.