



Abstracts

Articles appearing in the January 2021 issue

Seizure-Related 6 Homolog Like 2 Autoimmunity: Neurologic Syndrome and Antibody Effects

Objective To describe the clinical syndrome of 4 new patients with seizure-related 6 homolog like 2 antibodies (SEZ6L2-abs), study the antibody characteristics, and evaluate their effects on neuronal cultures.

Methods SEZ6L2-abs were initially identified in serum and CSF of a patient with cerebellar ataxia by immunohistochemistry on rat brain sections and immunoprecipitation from rat cerebellar neurons. We used a cell-based assay (CBA) of HEK293 cells transfected with SEZ6L2 to test the serum of 95 patients with unclassified neuropil antibodies, 331 with different neurologic disorders, and 10 healthy subjects. Additional studies included characterization of immunoglobulin G (IgG) subclasses and the effects of SEZ6L2-abs on cultures of rat hippocampal neurons.

Results In addition to the index patient, SEZ6L2-abs were identified by CBA in 3/95 patients with unclassified neuropil antibodies but in none of the 341 controls. The median age of the 4 patients was 62 years (range: 54–69 years), and 2 were female. Patients presented with subacute gait ataxia, dysarthria, and mild extrapyramidal symptoms. Initial brain MRI was normal, and CSF pleocytosis was found in only 1 patient. None improved with immunotherapy. SEZ6L2-abs recognized conformational epitopes. IgG4 SEZ6L2-abs were found in all 4 patients, and it was the predominant subclass in 2. SEZ6L2-abs did not alter the number of total or synaptic SEZ6L2 or the AMPA glutamate receptor 1 (GluA1) clusters on the surface of hippocampal neurons.

Conclusions SEZ6L2-abs associate with a subacute cerebellar syndrome with frequent extrapyramidal symptoms. The potential pathogenic effect of the antibodies is not mediated by internalization of the antigen.

[NPub.org/NN/9619a](https://pub.org/NN/9619a)

Overweight/Obesity in Young Adulthood Interacts With Aspects of EBV Infection in MS Etiology

Objective Because obesity affects the cellular immune response to infections, we aimed to investigate whether high body mass index (BMI) in young adulthood and high Epstein-Barr nuclear antigen 1 (EBNA-1) antibody levels interact with regard to MS risk. We also aimed at exploring potential 3-way interactions between BMI at age 20 years, aspects of Epstein-Barr virus (EBV) infection (high EBNA-1 antibody levels and infectious mononucleosis [IM] history, respectively) and the human leukocyte antigen (HLA)-DRB1*15:01 allele.

Methods Using Swedish population-based case-control studies (5,460 cases and 7,275 controls), we assessed MS risk in relation to interactions between overweight/obesity at age 20 years, IM history, EBNA-1 levels, and HLA-DRB1*15:01 status by calculating ORs with 95% CIs using logistic regression. Potential interactions were evaluated on the additive scale.

Results Overweight/obesity, compared with normal weight, interacted significantly with high (>50th percentile) EBNA-1 antibody levels (attributable proportion due to interaction 0.2, 95% CI 0.1–0.4). The strength of the interaction increased with higher category of EBNA-1 antibody levels. Furthermore, 3-way interactions were present between HLA-DRB1*15:01, overweight/obesity at age 20 years, and each aspect of EBV infection.

Conclusions With regard to MS risk, overweight/obesity in young adulthood acts synergistically with both aspects of EBV infection, predominantly among those with a genetic susceptibility to the disease. The obese state both induces a chronic immune-mediated inflammation and affects the cellular immune response to infections, which may contribute to explain our findings.

[NPub.org/NN/9619b](https://pub.org/NN/9619b)



Most-Read Articles

As of March 14, 2021

Guillain-Barré syndrome related to COVID-19 infection

P. Alberti, S. Beretta, M. Piatti, et al. 2020;7:e741. doi.org/10.1212/NXI.0000000000000741

MOG cell-based assay detects non-MS patients with inflammatory neurologic disease

P. Waters, M. Woodhall, K. C. O'Connor, et al. 2015;2:e89. doi.org/10.1212/NXI.000000000000089

Increased frequency of anti-Ma2 encephalitis associated with immune checkpoint inhibitors

A. Vogrig, M. Fouret, B. Joubert, et al. 2019;6:e604. doi.org/10.1212/NXI.000000000000604

Aquaporin-4 autoimmunity

A. Zekeridou, V. A. Lennon. 2015; 2:e110. doi.org/10.1212/NXI.000000000000110

COVID-19-related acute necrotizing encephalopathy with brain stem involvement in a patient with aplastic anemia

L. Dixon, J. Varley, A. Gontsarova, et al. 2020;7:e789. doi.org/10.1212/NXI.000000000000789

Neurology[®]

What's Happening in *Neurology*[®] *Neuroimmunology & Neuroinflammation*
Neurology 2021;96;892
DOI 10.1212/WNL.00000000000011903

This information is current as of May 10, 2021

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/96/19/892.full
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.neurology.org/about/about_the_journal#permissions
Reprints	Information about ordering reprints can be found online: http://n.neurology.org/subscribers/advertise

Neurology[®] is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2021 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

