250 words max

Real-world prevalence of autoantibodies in epilepsy

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Topic category: Epilepsy

Background: The prevalence of autoantibodies among people with epilepsy (PWE) is not clear, with widely varying rates of 5-80% reported. Existing studies demonstrate considerable differences regarding participant selection/ascertainment bias, numbers of antibodies tested for (and their clinical relevance), laboratory methods for antibody testing and result interpretation. By determining the prevalence of largely pathogenic antibodies among prospectively recruited outpatients with new-onset focal epilepsy (NOFE), drug-resistant epilepsy (DRE) and seizure-free epilepsy (SFE), we aim to provide a prevalence rate that is generalisable to the broader population of PWE.

Methods: Sera obtained from consecutive adult patients from epilepsy clinics (NOFE patients 2011-2015, DRE and SFE patients 2018-2020) and healthy controls (HC) were screened on live cell-based assays for neuronal-surface antibodies (NSAs) to LGI1, CASPR2, ~~AMPA-R, CASPR2,~~ contactin-2, DPPX~~,~~ and the GABA$_A$~~-R~~, GABA$_B$~~-R~~, glycine ~~receptor, LGI1~~ and NMDA~~-R~~ receptors. Radioimmunoprecipitation assays and in-house permeabilised CBAs detected GAD65 antibodies. ~~Thresholds for antibody positivity from our centre's diagnostic lab service were applied.~~

Results: Antibodies were detected in 24/232 (10.3%) NOFE, 22/260 (8.5%) DRE, 5/54 (9.3%) SFE and 0/55 HCs. NOFE patients had NSAs only, whereas DRE and SFE cohorts had ~~patients with~~ NSAs ~~or~~ and GAD65 antibodies (DRE: 11 NSA, 11 GAD65; SFE: 2 NSA, 3 GAD65).

Conclusion: Overall, 51/546 (9.3%) epilepsy outpatients had autoantibodies detected and the proportion of antibody-positive patients was similar across the three epilepsy groups. ~~-~~ Future work should determine any pathophysiological role for antibodies in epilepsy and to explain the striking absence of GAD65 antibodies in NOFE.

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