

EPILEPSY

Population-based study reinforces the link between autoimmune disease and epilepsy

Evidence is emerging that a substantial proportion of epilepsy cases have an autoimmune basis, and a large study recently published in *JAMA Neurology* further reinforces this notion. Most notably, the study indicates that the risk of epilepsy is heightened even in conditions without known cerebrovascular sequelae.

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Senior investigator Kenneth Mandl had a personal motive to investigate the relationship between epilepsy and autoimmune disease. “I was confronted with the co-occurrence of epilepsy and an autoimmune disease in a family member,” he explains. “Quite invested in understanding this further, and being a firm believer in Occam’s razor [also known as the principle of parsimony], I decided to apply big data to the problem.”

Mandl and colleagues used claims data from a US employer-provided health insurance plan to conduct a retrospective population-based study. The cohort was divided into two age groups: children (under 18 years) and non-elderly adults (18–65 years). The researchers focused on 12 autoimmune diseases, including systemic lupus erythematosus (SLE), antiphospholipid syndrome (APS), myasthenia gravis and psoriasis.

Epilepsy was identified in 0.4% of the 2,518,034-strong study cohort, and 17.5% of individuals with epilepsy had autoimmune diseases. All 12 autoimmune diseases were associated with an increased risk of epilepsy, with APS and SLE having the strongest links (ninefold and sevenfold increased risk, respectively). Among the participants with autoimmune disease, the epilepsy risk was greater in children than in non-elderly adults.

“It is known that some autoimmune diseases, such as SLE and APS, are

associated with cerebrovascular complications, which predispose patients to seizures,” says Mandl. “However, our study also found an elevated risk of epilepsy in autoimmune diseases that are not known to affect the brain; for example, patients with myasthenia gravis have a fivefold increased risk of developing epilepsy.”

On the basis of these results, the authors propose that patients with epilepsy should undergo investigation for autoimmune disease, and vice versa. “If there is a link between autoimmunity and epilepsy, new treatment strategies could be explored,” the study’s first author Mei-Sing Ong points out. In addition, the findings provide a base from which to examine a possible aetiological role for autoimmunity in epilepsy.

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Original article Ong, M.-S. et al. Population-level evidence for an autoimmune etiology of epilepsy. *JAMA Neurol.* doi:10.1001/jamaneuro.2014.188