BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

World's largest genetic study reveals new insights on why epilepsy develops

September 4, 2023 | News

The researchers found many of the current medications for epilepsy work by targeting the same epilepsy risk genes highlighted in the study



Specific changes in our DNA that increase the risk of developing epilepsy have been discovered, in the largest genetic study of its kind for epilepsy coordinated by the International League Against Epilepsy, which includes scientists from the University of Melbourne and WEHI (Walter and Eliza Hall Institute of Medical Research) in Australia.

This research advances our understanding of why epilepsy develops and could inform the development of new epilepsy treatments. The research was produced by the International League Against Epilepsy (ILAE) Consortium on Complex Epilepsies.

Epilepsy is a common brain disorder estimated to effect more than 50 million people worldwide, where nerve cell activity in the brain is disturbed, causing seizures. It has a genetic component that sometimes runs in families. In this study, researchers compared the DNA from almost 30,000 people with epilepsy to the DNA of 52,500 people without epilepsy from around the world. The differences between the two groups highlighted areas of DNA that may be involved in the development of epilepsy.

The researchers identified 26 distinct areas in our DNA that appear to be involved in epilepsy, including 19 that are specific to a particular form of epilepsy called ‘genetic generalised epilepsy’ (GGE). They also identified 29 genes that they believe are probably contributing to epilepsy within these DNA regions.

More than 300 researchers based across Europe, Australia, Asia, South America and North America, worked together as part of the International League Against Epilepsy (ILAE) Consortium on Complex Epilepsies to produce this research.

This identification of epilepsy associated genetic changes will allow to improve diagnosis and classification of different epilepsy subtypes. This in turn will guide clinicians in selecting the most beneficial treatment strategies, minimising seizures.