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Anti-cholesterol drugs could help stave off seizures: research

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Statins, the family of drugs used to lower cholesterol, might also reduce the risk of epileptic seizures in people with cardiovascular disease, according to a new statistical study by a drug safety expert at the University of British Columbia and Vancouver Coastal Health Research Institute. The findings could provide the basis for randomized, controlled clinical trials to test the efficacy of the drugs as anti-epileptic medication.

The study, based on a database of 2,400 Quebec residents aged 65 and older, showed that those taking statins were 35 per cent less likely to be hospitalized with a diagnosis of epilepsy than those not taking the drug. The data was culled from a larger database containing detailed information on 150,000 cardiovascular patients in Quebec.

Published today in the journal *Neurology*, the study does not prove causation but only reveals an association between use of statins and the incidence of epilepsy. Such "observational" studies are crucial to generating hypotheses about drugs, providing a basis for clinical trials.

Epilepsy, which affects 50 million people worldwide, is a brain disorder in which clusters of brain cells sometimes signal abnormally, causing strange sensations, emotions, and behavior or sometimes convulsions, muscle spasms, and loss of consciousness. It's estimated that 30 per cent of epilepsy patients continue having seizures despite receiving the standard drug therapy.

This is the first large study involving humans to show a correlation between statins, the most prescribed class of cardiovascular medications, and seizures, which may be life-threatening. One statin drug, atorvastatin (sold under the trade name Lipitor), has been shown to decrease seizures and neuron death in rats. Statins also have shown protective effects in other neurological disorders, including multiple sclerosis and spinal cord injury.

"Our data is compelling in that it opens doors for future studies to test this hypothesis in patients with epilepsy," says Dr. Mahyar Etminan, a pharmacoepidemiologist and lead author of the article. Etminan is a scientist and clinical pharmacist at the Centre for Clinical Epidemiology at Vancouver Coastal Health Research Institute and an assistant professor in the Dept. of Medicine at UBC. "Such trials would show whether statins truly have a protective effect, and if that effect is limited to certain types of statins or certain types of epilepsy."

"Our study suggests that statin use reduces the risk of developing epilepsy in persons over the age of 65 with cardiovascular disease," says Dr. Ali Samii, a professor in the Department of Neurology at the University of Washington, and co-author of the article. "The most plausible explanation is that statin use reduces the risk of stroke in this population, and since strokes can increase the risk of epilepsy, statins reduce the risk of epilepsy because of stroke prevention."

But Samii notes that other classes of cardiovascular drugs, such as beta-blockers and ACE inhibitors, also reduce the risk of stroke, and yet they did not show the same effect. Therefore, statins may reduce the risk of epilepsy in this patient population by mechanisms other than just stroke prevention.

Provided by University of British Columbia