Medical Xpress

Modest familial risks for multiple sclerosis

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Even though multiple sclerosis is largely caused by genetic factors, the risk of patients relatives developing the disease is lower than previously assumed. This is the conclusion of a new population registry-based study, published in the scientific journal *Brain*.

In the present study from Karolinska Institutet, researchers have assessed the familial risks for multiple sclerosis (MS) by using population registers and health care registries. This way, the researchers were able to include in their study almost everyone diagnosed with the disease in Sweden. Slightly over 28,000 individuals diagnosed with MS from 1968 onwards were identified. By using the Swedish Multi-generation registry, both biological and adopted relatives were identified and the researchers could assess the risks for the different groups.

This is the first study for MS in which the familial risks have been analysed using matched controls. By including randomly selected controls and their relatives, the researchers could also assess the risk for relatives of MS patients developing the disease compared to the risk for the population in general.

The estimated risks in this study turned out lower than the previously reported high risks. The risk for a sibling to a person with multiple sclerosis for developing disease was seven times higher compared to the general population, while the risk for a child of an MS patient was five times higher. The study found no increase in risk for grandchildren and nieces/nephews.

"The population registers in Sweden are reliable tools for finding relatives to MS patients and their possible MS diagnosis, instead of relying on the patients' memories. Our study is a good example of how one can quickly achieve more reliable results than the previous studies that were based on patient groups collected in hospitals throughout decades", says Helga Westerlind, a doctoral student at the Department of Clinical Neuroscience and first author of the article.

The researchers have also used the Swedish twin register to identify twins with multiple sclerosis and investigate how genes, shared environment and individual risk factors contribute to the disease. The analysis confirmed previous results: MS seems to be primarily caused by genetic factors, and secondarily by individual risk factors. A shared environment does not appear to be of any significance.

More information: Helga Westerlind, Ryan Ramanujam, Daniel Uvehag, Ralf Kuja-Halkola, Marcus Boman, Matteo Bottai, Paul Lichtenstein, Jan Hillert. "Modest familial risks for multiple sclerosis - a registry based study of the population of Sweden." *Brain*, e-pub ahead of print 17 Jan 2014. www.ncbi.nlm.nih.gov/pubmed/24 … 72?dopt=AbstractPlus

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