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Relatives of patients with Parkinson's disease face increased risk of depression/anxiety disorders

ROCHESTER, Minn. -- Immediate relatives (brother, sister, mother, father, son or daughter) of people who have Parkinson's disease are at increased risk for developing depression and anxiety disorders, according to a new study by Mayo Clinic. The risk is particularly increased in families of patients who develop Parkinson's disease before age 75. The Mayo Clinic report appears in the December 2007 issue of the journal *Archives of General Psychiatry* (<http://archpsyc.ama-assn.org/>).

Studies by our group and others have shown that relatives of patients with Parkinson's disease have an increased risk of Parkinson's disease, explains Walter Rocca, M.D., senior author of the study and a Mayo Clinic neurologist and epidemiologist. Recently, we showed they also have increased risk of essential tremor and of cognitive impairment or dementia. However, their risk of psychiatric disorders was unknown.

Because many patients with Parkinson's disease develop anxiety and depression after and even before the onset of the disease, we explored whether this tendency was present to a greater extent in family members of people with Parkinson's disease compared with people without the disease. We found that, indeed, relatives of patients with Parkinson's disease are at increased risk for anxiety and depressive disorders, which suggests a genetic or other relationship between those disorders and Parkinson's disease.

Dr. Rocca emphasizes that the familial susceptibility factors may be genetic, environmental or a combination of the two, and that further research is needed to determine their exact nature.

Significance of the Mayo Clinic Research

This is the first large population-based study to show that Parkinson's disease and psychiatric disorders may share familial factors that make a person susceptible to developing one or both.

An important methodological feature of the study is that researchers assessed each family member individually, rather than having one relative provide information for the entire family.

About the Study

The Mayo Clinic team studied:

- 1,000 immediate relatives of 162 patients with Parkinson's disease from Olmsted County, Minn., where Mayo Clinic's Rochester campus is located
- 850 first-degree relatives of 147 matched controls from the same Olmsted County population -- the controls were similar in age and of the same gender as the patients in the first group, but did not have Parkinson's disease

The investigators used the medical records-linkage system of the Rochester Epidemiology Project to identify subjects with Parkinson's disease and the control subjects, and to obtain clinical information about psychiatric diseases for relatives in both groups who lived part or all of their lives in Olmsted County. Housed at Mayo Clinic, the Rochester Epidemiology Project is one of the largest long-term, integrated databases of patient records in the world.

Documentation of psychiatric disorders for relatives was obtained by a direct interview whenever possible (or by an interview with their proxy for those who had died prior to the study or were incapacitated), and through a review of their medical record. Psychiatric disorders in the medical records were defined using published clinical criteria or physician diagnosis. Diagnoses were verified by a neurologist and a psychiatrist at Mayo Clinic who were not told whether the record was from a relative of a patient with Parkinson's disease or from a relative of a control subject.

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About Parkinson's Disease

Parkinson's disease is a chronic, debilitating, progressive neurologic disease typically beginning after age 50 and affecting approximately two in every 100 people. The diagnosis requires the presence of at least two of the following symptoms: tremors while at rest, rigidity of the muscles, loss of postural control, and slowed movements. Symptoms are caused by cell damage or cell death in the part of the brain known as the nigrostriatal dopamine system, which

is involved in controlling movement. The exact cause of the damage to that system is not known.

Collaboration and Support

Other members of the Mayo Clinic team included: Gennarina Arabia, M.D.; Brandon Grossardt; Yonas Geda, M.D.; Justin Carlin; James Bower, M.D.; J. Eric Ahlskog, M.D., Ph.D.; and Demetrius Maraganore, M.D. Their work was supported by two grants from the National Institutes of Health.

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