Thyroid condition increases stroke risk in young adults

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Young adults with overactive thyroid face a 44 percent increased risk of stroke compared to those with normal thyroid function, according to a study reported in *Stroke: Journal of the American Heart Association*.

"Strokes of undetermined cause account for between one-third and one-fourth of all ischemic strokes in young people," said Herng-Ching Lin, Ph.D., senior author of the study and professor at the School of Health Care Administration, College of Medicine, Taipei Medical University in Taipei, Taiwan. "To the best of our knowledge, hyperthyroidism has never been considered as a potential risk factor for stroke in the 18 to 44 age group."

Hyperthyroidism, also known as overactive thyroid, is a common endocrine disorder that affects an estimated 0.5 percent (1 in 200 people) to 2 percent (1 in 50 people) of the world's population, including a significant group of young adults, Lin said. The condition causes overproduction of thyroid hormone, which speeds up the metabolism and causes symptoms such as sweating, weight loss, diarrhea and nervousness.

For the study, researchers used data on 3,176 young adults diagnosed with hyperthyroidism between Jan. 1, 1998 and Dec. 31, 2001, and 25,408 comparison patients free of thyroid disease who were treated under Taiwan's national, single-payer healthcare system. The patients' average age was 32.

The researchers tracked each patient's data for five years to identify those who developed ischemic stroke, the most common type of stroke caused by blocked arteries in or leading to the brain. During those five years, 198 of the 28,584 patients developed ischemic stroke (0.7 percent), including 31 (1 percent) of the hyperthyroidism patients and 167 (0.6 percent) of the comparison group, Lin said.

After adjusting for factors including patient age, gender, income, level of urbanization, high blood pressure, diabetes, an irregular heart rhythm called atrial fibrillation (AF), high cholesterol, coronary heart disease and whether they were taking medication to treat heart rhythm problems, the risk of having a stroke during the five-year follow-up period was 44 percent higher for patients with hyperthyroidism than for those without it.

The medical records used in the study are a subset of a large database collected by Taiwan's national health insurance program, in which 98 percent of the population participated as of 2007.

"Hyperthyroidism may be associated with various syndromes or conditions linked to cerebrovascular disease in young adults," Lin said. "However, only case reports or case series were found in the literature, and the causal relationships could not be established."

For example, an association is well known between hyperthyroidism and AF in adults over age 60. AF occurs when the heart beats erratically and ineffectively, and AF can lead to both stroke and sudden cardiac death. There has been a notable absence of data related to the risk of stroke in younger individuals with hyperthyroidism, he said.

"Our study shows an association between hyperthyroidism and the risk of subsequent ischemic stroke in young adults," Lin said. "A more thorough evaluation in future studies may help elucidate the causes of

stroke in this age group. Our results indicate a need for thyroid function testing and detection of hyperthyroidism in surveys to identify the causes of ischemic stroke in young people."

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