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## Deficits in Brain's 'Executive' Skills Common With TIA, Minor Stroke

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Researchers evaluated 140 patients (average age 67) admitted to the Urgent TIA Clinic at the London Health Sciences Centre in London, Ontario. Within a week of symptom onset, the researchers used a short, easily administered battery of tests that can detect deficits in so-called "executive functions," including speed of mental processing, abstraction and reasoning ability. They found that these functions -- higher-level cognitive skills that control and coordinate other mental abilities and behaviors -- were impaired in almost 40 percent of the TIA and minor stroke patients.

Researchers have known that TIAs and minor strokes can subtly change mental abilities, a condition known as vascular cognitive impairment. But little has been known about how common impairment was in these patients.

"Transient ischaemic attacks and minor strokes are not just a warning of future stroke. They are an indication that the process of brain injury may have begun," said Michael Harnadek, Ph.D., the study's lead author and a neuropsychologist with the London Health Sciences Centre.

Researchers also administered the most commonly used test for mental functioning, the Mini Mental Status Exam, which is designed to identify patients with Alzheimer's dementia. They found that test couldn't detect the cognitive problems in minor stroke and TIA patients. Harnadek said this indicates while cognitive impairment is common in patients who have experienced TIAs and minor strokes, it can be missed if doctors rely only on measures designed to test for Alzheimer's dementia.

"Using measures that specifically test executive functioning, screening for cognitive impairment can be done quickly and easily," he said. Ischaemic events -- caused by a blockage in a blood vessel in or leading to the brain -- account for about 85 percent of all strokes. About one-third of people who have a TIA, also known as a "warning stroke," have a stroke within a year, according to the American Stroke Association.

In a May 2009 statement, the American Heart Association/American Stroke Association re-defined TIA as a transient episode of neurological dysfunction caused by focal brain (an injury confined to one area of the brain), spinal cord or retinal ischemia without acute infarction. Infarction is tissue death, currently the main distinction between TIA and stroke, and can be determined by magnetic resonance imaging (MRI).

Symptoms of a TIA and stroke are the same and include sudden onset of any of the following:

Published on : Mon, 8 Mar 2010