Stroke symptoms, even if they disappear within an hour, need emergency assessment

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Stroke symptoms that disappear in under an hour, known as a transient ischemic attack (TIA), need emergency assessment to help prevent a full-

blown stroke, according to a new American Heart Association scientific statement published today in the Association's journal *Stroke*. The statement offers a standardized approach to evaluating people with suspected TIA, with guidance specifically for hospitals in rural areas that may not have access to advanced imaging or an on-site neurologist.

TIA is a temporary blockage of blood flow to the brain. Each year, about 240,000 people in the U.S. experience a TIA, although this estimate may represent underreporting of TIA because symptoms tend to go away within an hour. While the TIA itself doesn't cause permanent damage, nearly 1 in 5 of those who have a TIA will have a full-blown stroke within three months after the TIA, almost half of which will happen within two days. For this reason, a TIA is more accurately described as a warning stroke rather than a "mini-stroke," as it's often called.

TIA symptoms are the same as stroke symptoms, only temporary. They begin suddenly and may have any or all of these characteristics:

- Symptoms begin strong then fade;
- Symptoms typically last less than an hour;
- Facial droop;
- Weakness on one side of the body;
- Numbness on one side of the body;
- Trouble finding the right words/slurred speech; or
- Dizziness, vision loss or trouble walking.

The F.A.S.T. acronym for stroke symptoms can be used to identify a TIA: **F** — Face drooping or numbness; **A** — Arm weakness; **S** — Speech difficulty; **T** — Time to call 9-1-1, even if the symptoms go away.

"Confidently diagnosing a TIA is difficult since most patients are back to normal function by the time they arrive at the emergency room," said

Hardik P. Amin, M.D., chair of the scientific statement writing committee and associate professor of neurology and medical stroke director at Yale New Haven Hospital, St. Raphael Campus in New Haven, Connecticut. "There also is variability across the country in the workup that TIA patients may receive. This may be due to geographic factors, limited resources at health care centers or varying levels of comfort and experience among medical professionals."

For example, Amin said, "Someone with a TIA who goes to an emergency room with limited resources may not get the same evaluation that they would at a certified stroke center. This statement was written with those emergency room physicians or internists in mind—professionals in resource-limited areas who may not have immediate access to a vascular neurologist and must make challenging evaluation and treatment decisions."

The statement also includes guidance to help health care professionals tell the difference between a TIA and a "TIA mimic"—a condition that shares some signs with TIA but is due to other medical conditions such as low blood sugar, a seizure or a migraine. Symptoms of a TIA mimic tend to spread to other parts of the body and build in intensity over time.

Who is at risk for a TIA?

People with cardiovascular risk factors, such as high blood pressure, diabetes, obesity, high cholesterol and smoking, are at high risk for stroke and TIA. Other conditions that increase risk of a TIA include peripheral artery disease, atrial fibrillation, obstructive sleep apnea and coronary artery disease. In addition, a person who has had a prior stroke is at high risk for TIA.

Which tests come first once in the emergency room?

After assessing for symptoms and medical history, imaging of the blood vessels in the head and neck is an important first assessment. A non-contrast head CT should be done initially in the emergency department to rule out intracerebral hemorrhage and TIA mimics. CT angiography may be done as well to look for signs of narrowing in the arteries leading to the brain. Nearly half of people with TIA symptoms have narrowing of the large arteries that lead to the brain.

A magnetic resonance imaging (MRI) scan is the preferred way to rule out brain injury (i.e., a stroke), ideally done within 24 hours of when symptoms began. About 40% of patients presenting in the ER with TIA symptoms will actually be diagnosed with a stroke based on MRI results. Some emergency rooms may not have access to an MRI scanner, and they may admit the patient to the hospital for MRI or transfer them to a center with rapid access to one.

Blood work should be completed in the emergency department to rule out other conditions that may cause TIA-like symptoms, such as low blood sugar or infection, and to check for cardiovascular risk factors like diabetes and high cholesterol.

Once TIA is diagnosed, a cardiac work-up is advised due to the potential for heart-related factors to cause a TIA. Ideally, this assessment is done in the emergency department, however, it could be coordinated as a follow-up visit with the appropriate specialist, preferably within a week of having a TIA. An electrocardiogram to assess heart rhythm is suggested to screen for atrial fibrillation, which is detected in up to 7% of people with a stroke or TIA. The American Heart Association recommends that long-term heart monitoring within six months of a TIA is reasonable if the initial evaluation suggests a heart rhythm-related issue as the cause of a TIA or stroke.

Early neurology consultation, either in-person or via telemedicine, is

associated with lower death rates after a TIA. If consultation isn't possible during the emergency visit, the statement suggests following up with a neurologist ideally within 48 hours but not longer than one week after a TIA, given the high risk of stroke in the days after a TIA. The statement cites research that about 43% of people who had an ischemic stroke (caused by a blood clot) had a TIA within the week before their stroke.

Assessing stroke risk after TIA

A rapid way to assess a patient's risk of future stroke after TIA is the 7-point ABCD2 score, which stratifies patients into low, medium and high risk based on Age, Blood pressure, Clinical features (symptoms), Duration of symptoms (less than or greater than 60 minutes) and Diabetes. A score of 0-3 indicates low risk, 4-5 is moderate risk and 6-7 is high risk. Patients with moderate to high ABCD2 scores may be considered for hospitalization.

Collaboration among emergency room professionals, neurologists and primary care professionals is critical to ensure the patient receives a comprehensive evaluation and a well-communicated outpatient plan for future stroke prevention at discharge.

"Incorporating these steps for people with suspected TIA may help identify which patients would benefit from hospital admission, versus those who might be safely discharged from the emergency room with close follow-up," Amin said. "This guidance empowers physicians at both rural and urban academic settings with information to help reduce the risk of future stroke."

This scientific statement was prepared by the volunteer writing group on behalf of the American Heart Association's Emergency Neurovascular Care Committee of the Stroke Council and the Council on Peripheral

Vascular Disease. The American Academy of Neurology affirms the value of this statement as an educational tool for neurologists, and it is endorsed by the American Association of Neurological Surgeons/Congress of Neurological Surgeons (AANS/CNS).

American Heart Association scientific statements promote greater awareness about cardiovascular diseases and stroke issues and help facilitate informed health care decisions. Scientific statements outline what is currently known about a topic and what areas need additional research. While scientific statements inform the development of guidelines, they do not make treatment recommendations. American Heart Association guidelines provide the Association's official clinical practice recommendations.

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