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ABSTRACT

This clinical policy from the American College of Emergency Physicians addresses key issues for adults presenting to the emergency department with suspected transient ischemic attack. A writing subcommittee conducted a systematic review of the literature to derive evidence-based recommendations to answer the following clinical questions: (1) In adult patients with suspected transient ischemic attack, are there clinical decision rules that can identify patients at very low short-term risk for stroke who can be safely discharged from the emergency department? (2) In adult patients with suspected transient ischemic attack, what imaging can be safely delayed from the initial emergency department workup? (3) In adult patients with suspected transient ischemic attack, is carotid ultrasonography as accurate as neck computed tomography angiography or magnetic resonance angiography in identifying severe carotid stenosis? (4) In adult patients with suspected transient ischemic attack, can a rapid emergency department-based diagnostic protocol safely identify patients at short-term risk for stroke? Evidence was graded and recommendations were made based on the strength of the available data.

INTRODUCTION

Transient ischemic attack (TIA) is part of a spectrum that involves ischemia of the central nervous system. Historically the definition of a TIA has been focal neurologic symptoms that resolve within 24 hours of onset.¹ However, studies have shown that approximately one third of all TIAs have evidence of infarction on neurologic imaging.² Thus, the American Heart Association/American Stroke Association (AHA/ASA) in 2009 revised the definition for TIA, using a tissue-based diagnosis: “a transient episode of neurological dysfunction caused by focal brain, spinal cord, or retinal ischemia, without acute infarction.”³ If imaging is unavailable and the symptoms last greater than 24 hours, then patients are classified as having had a clinical stroke.¹ Most TIAs, however, are thought to last fewer than 1 or 2 hours.³

The incidence of TIA in the United States is approximately 240,000 cases a year. However, the true incidence is likely higher because of patients not reporting their symptoms to their health care provider.^{1,4} The risk of an acute ischemic stroke after a TIA ranges from 3.5% to 10% at 2 days, 5% to 10% at 7 days, and 9.2% to 17% at 90 days.⁵⁻¹³ Because approximately 15% of all ischemic strokes are preceded by a TIA, timely evaluation for

modifiable conditions that are high-risk, such as carotid stenosis and atrial fibrillation, is important.^{1,4}

Because of the lack of a specific diagnostic test for TIA, the diagnosis of TIA can be difficult to distinguish from stroke mimickers, such as seizures, migraines, syncope, peripheral vestibular disturbance, or psychogenic causes.¹⁴ Studies have demonstrated difficulty among neurologists and non-neurologists in identifying patients with TIA, with one study reporting that 60% of patients admitted with an initial diagnosis of a TIA had a final diagnosis of a nonischemic cause for their symptoms such as seizures, migraines, or neuropathy.^{15,16} To help identify TIA, risk-stratification tools that were originally developed to identify TIA patients at high short-term risk for stroke have also been evaluated to predict true TIA.^{17,18} Research is also currently under way to evaluate possible biomarkers to help establish the diagnosis of TIA.¹⁹

Evaluation of TIA patients in the emergency department (ED) has been shown to be variable, depending on resources available. Brain neuroimaging in the ED may include either head computed tomography (CT) or brain magnetic resonance imaging (MRI). Consultation with neurology and admission rates also vary widely.²⁰

Currently, there is no specific acute intervention for patients with TIA. The goal of evaluating a patient with TIA is to reduce the potential for future strokes.¹ Whereas antiplatelet agents are used as first-line therapy for secondary prevention, a workup should also include an evaluation that may lead to other secondary prevention treatments. This includes identification of high-risk conditions that have effective therapeutic interventions such as severe carotid stenosis or atrial fibrillation.

This clinical policy will address 4 issues related to emergency physicians based on feedback from the American College of Emergency Physicians (ACEP) membership. The first question will look at clinical decision rules to evaluate whether a patient can be safely discharged home after a suspected TIA. Emergency physicians identified this as a critical issue because hospitals may not have the capacity to admit every TIA patient, and outpatient workups, especially to a specialty TIA clinic, have been shown to be a cost-effective alternative to hospital admission for certain subsets of patients.^{21,22}

The second clinical question tackles the issue of emergent imaging in the ED. Although imaging has been recommended for TIA,¹ when TIA symptoms have completely resolved, it is unclear whether imaging can be safely deferred and obtained later on an inpatient basis or during outpatient follow-up.

The third question evaluates the accuracy of carotid ultrasonography compared with CT angiography (CTA)