Considered a medical emergency, a transient ischemic attack (TIA) resulting from a focal ischemia in the brain or retina signals a sudden neurological deficit with patient symptoms typically lasting only 1 to 2 hours.\(^1,2\) The 90-day risk of stroke after a TIA is reported as high as 17% with the highest risk occurring in the first week.\(^3,4\) Approximately 240000 US adults each year experience a TIA.\(^5\) The true prevalence of TIA is under-reported because patients fail to report their symptoms to healthcare providers.\(^6,7\) Evidence supports when an individual is at risk for TIA or one is suspected, immediate action is required.

Nurses play a pivotal role in all phases of patient care. Also, they frequently are on the front line regarding TIA and stroke education of patients/families, recognition of signs/symptoms, assessment and evaluation of modifiable risk factors, and long-term management of TIA.\(^7,8\) The purpose of this article is to provide an update of the most salient aspects of evidence-based TIA nursing care.

**TIA Assessment/Evaluation**

Nurses especially with advance practice training have a unique role in the initial evaluation (eg, identifying symptoms, eliminating mimics, triaging TIA referrals or early access to initial evaluation, assessing risk of acute and long-term complications), diagnosis, management, and patient/family education.\(^9,10\) Evidence resulting from a 5-year prospective study reveals key clinical characteristics associated with an impending stroke which include first diagnosis of TIA, increased age, deficits lasting >10 minutes, history of gait disturbance, dysarthria, elevated blood pressure (BP), atrial fibrillation (AF) indicated by ECG, and infarction on computed tomography.\(^10\) Additional findings suggest a decreased likelihood of impending stroke with symptoms lasting <1 minute, light-headedness, vertigo, and visual loss.\(^10\) The American Heart Association’s TIA care standard guidelines recommend use of diffusion-weighted MRI and computed tomography if MRI is not available within 24 hours of symptom onset.\(^3\) The ABCD2 score is based on the clinical variables of age, BP, clinical characteristics, duration of symptoms and presence of diabetes mellitus that affect the risk of an early stroke after a TIA.\(^11\) The ABCD2 risk assessment tool was developed to categorize patient at low, moderate, or high risk of stroke at 2, 7, 30, and 90 days after initial symptoms. The ABCD2 score assigns points to the variables: age >60 (1 point); BP ≥140/90 (1); clinical features: unilateral weakness (2), speech impairment without weakness (1); duration ≥60 minutes (2) or 10 to 59 minutes (1); and diabetes mellitus (1). Scores of 0 to 3 are considered low risk, 4 to 5 intermediate risk and 6 to 7 high risk for stroke at 2, 7, 30, and 90 days.\(^11\) The ABCD2 calculation can be determined at http://www.mdcalc.com/abcd2-score-for-tia/.

**Nonmodifiable Risk Factors**

Age, sex, race, ethnicity, prior TIA, and family history of TIA or stroke are major risk factors and should be part of the initial patient assessment.\(^1,5,6\) With advancing age, the prevalence of TIAs and strokes increases.\(^1,5,6\) Variation occurs according to sex as well as race/ethnicity. Men, blacks, and Mexican Americans have higher rates of TIA than their female and non-Hispanic counterparts.\(^5,12,13\) Of those having a TIA, 12% will die within the first year and 19% of those initially surviving the 10-year high-risk period will ultimately have a stroke.\(^5,13\)

**Manageable and Modifiable Risk Factors**

**Hypertension**

Hypertension is the single most significant risk factor defined as a systolic BP ≥140 mm Hg or a diastolic BP ≥90 mm Hg.\(^14\) In the United States, an estimated 78 million have hypertension. The 2014 American Heart Association recommendation is to start therapy with a systolic BP ≥140 mm Hg or diastolic BP ≥90 mm Hg for adults with a history of TIA or stroke while incorporating lifestyle modifications including a diet high in fruits, vegetables, low-fat dairy, exercise, and weight loss.\(^14\) For individuals with diabetes mellitus and BPs <120/80 have approximately half the lifetime risk of stroke.\(^15\) In the Reasons for Geographic and Racial Difference in Stroke (REGARDS) study, a 10-mm Hg elevation of systolic BP increased the stroke risk by 8%, whereas in blacks, every 10-mm Hg systolic BP elevation was associated with a 24% risk of stroke (3 times the white’s risk of stroke).\(^10\) Data further reveal that blacks tend to be more aware of their hypertension than whites, but less likely to have their BP controlled so close monitoring and individualizing care is essential.\(^17,18\)
Diabetes Mellitus
In individuals with a history of TIA or minor stroke, impaired glucose tolerance nearly doubles their stroke risk and triples the risk for those with diabetes mellitus.18 Diabetes mellitus is steadily increasing with age (3.7% in US adults aged 20−44 to 26.9% in adults 65+).19,20 The rate of individuals diagnosed in the United States is 7.1% in non-Hispanic white adults, 11.85% for Hispanics, and 12.7% for blacks.20 Lifestyle interventions and pharmacotherapy assist in the management of diabetes mellitus and impaired glucose tolerance.21

Atrial Fibrillation
AF is a potent risk factor for stroke increasing risk 5-fold.14 Percentages of strokes attributable to AF markedly increase from 1.5% at 50 to 59 years and 23.5% at 80 to 89 years.22 AF is often asymptomatic and frequently undetected resulting in underestimated stroke risk attributed to AF.23 Outpatient AF telemetry screening for 21 to 30 days of patients resulted in a 12% to 23% detection rate.23

Hyperlipidemia
The 2013 American College of Cardiology/American Heart Association Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults recommends using intensive statin therapy in patients with TIA with low-density lipoprotein cholesterol level ≥100 mg/dL and presumed to be atherosclerotic in origin.24 Moreover, patients should be educated on lifestyle modifications, medication, and dietary recommendations.

Metabolic Syndrome
Approximately 22% US adults aged >20 years have metabolic syndrome.25 A diagnosis of metabolic syndrome requires 3 of the following: elevated waist circumference, plasma triglyceride ≥150 mg/dL, high-density lipoprotein cholesterol <40 mg/dL for men and <50 mg/dL for women, BP ≥130 mmHg systolic or ≥85 mmHg diastolic, or fasting glucose ≥100 mg/dL.24,26 Metabolic syndrome prevalence is 30% to 50% in patients having ischemic strokes.25

Smoking, Exercise, Nutrition, and Physical Activity
Current smokers have a 2 to 4 times greater risk of stroke compared with nonsmokers who quit ≥10 years.27 Secondhand smoke is also a stroke risk factor. Individuals reporting <4 times per week of physical activity had a 20% greater risk for stroke for 5.7 years compared with those who exercised ≥4 times per week.28 Adherence to a Mediterranean style diet high in nuts and olive oil reduces risk of TIA and stroke. Consuming 1 serving of a sugar-sweetened soda a day increases ischemic risk by 13%.14

Education, Support, and Follow-Up
Education pertaining to TIA and stroke signs/symptoms is imperative. Nurses are frequently at the forefront of educating the patient/family and healthcare providers along with routinely assessing the effectiveness of the short- and long-term outcomes. Prominent evidence-based strategies are listed in the Table. Nurses make valuable and sustained contributions to the care of the individual at risk for transient ischemic attack and stroke. It is essential they remain informed with the best evidence empowering us to optimally function and continue to refine practice of the interdisciplinary team.

Table. Evidence-Based Strategies Improving Adherence to Medications and Lifestyle Changes7,9,11,14,27,28

<table>
<thead>
<tr>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide multiple tailored educational modalities appropriate for age, sex, race, culture, ethnicity, reading level, visual, and motor capabilities</td>
</tr>
<tr>
<td>Establish mutually achievable priority goals/outcomes with participant(s) and provider and praise when achieved</td>
</tr>
<tr>
<td>Provide counseling and support from healthcare provider and other community resources along with regular follow-up (eg, face-to-face, telephone, Internet)</td>
</tr>
<tr>
<td>Routinely assess whether specific cognitive, affective, or psychomotor learning occurs initially and maintained over time</td>
</tr>
<tr>
<td>Consider special and individualized needs of patient (eg, safety, hydration, pacing, falling, balance, cognitive status, depression)</td>
</tr>
<tr>
<td>Include family and significant others in action plan, strategies, and revise as needed</td>
</tr>
<tr>
<td>Create rituals/reminders that fit the patient/family lifestyle (eg, take medication when brushing teeth, cell phone reminders)</td>
</tr>
<tr>
<td>Simplify schedule and feasibility of achieving outcomes and consider creative options (eg, medication, diet, exercise—dancing, swimming)</td>
</tr>
<tr>
<td>Encourage regular self-monitoring (daily/weekly) with routine provider follow-up</td>
</tr>
<tr>
<td>With medications, schedule 1 per day dose, minimize pill numbers, and those well tolerated when possible</td>
</tr>
<tr>
<td>Minimize out-of-pocket costs for medications, lifestyle changes, transportation, etc</td>
</tr>
</tbody>
</table>

TAKE-HOME POINTS

- Nurses and other health professionals must be informed of the current evidence and how it affects all aspects of the care delivery process for patients at risk for transient ischemic attack and stroke.
- Many evidenced-based strategies exist to improve adherence to medication and lifestyle changes to reduce transient ischemic attack and stroke risk.

Disclosures

None.

References


**Key Words:** evidence-based practice, ischemic attack, transient ischemic attack, nursing
Update on Transient Ischemic Attack Nursing Care
Elaine T. Miller and Debbie Summers

Stroke. 2014;45:e71-e73; originally published online April 15, 2014;
doi: 10.1161/STROKEAHA.114.005320
Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2014 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://stroke.ahajournals.org/content/45/5/e71

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Stroke can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Stroke is online at:
http://stroke.ahajournals.org//subscriptions/