Be Good to Yourself:: TIA Treatment and Risk Factors

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Objective

- Define the goals for management of Transient Ischemic Attack (TIA) and risk reduction

TIA by Definition

- Brief episodes of neurologic dysfunction resulting from focal cerebral ischemia not associated with permanent cerebral infarction. This includes, brain, spinal cord and retinal ischemia without acute infarction or tissue injury.

- Duration of symptoms is not reliable in determining TIA.

- At least 240,000 individuals experience the symptoms of TIA in the US per year.

- 90 day stroke risk after TIA can be as high as 17.8% with almost half occurring within 2 days of index event.

ABCD2 Score

- A:Age; > 60=1 point

- B: Blood pressure;>140=1 point

- C: Clinical Features; Unilateral weakness=2 points Isolated Speech=1 Point

- D: Duration of Symptoms; > 60 minutes=2 points 10-59 minutes=1 point <10 minutes=0 points

- Diabetes=1 point

- The predictive value of this scoring system has not been found to be reliable in several studies

Risk Factors

- Hypertension
- Hyperlipidemia
- Diabetes
- Smoking
- Atrial Fibrillation
- Extracranial Carotid Artery Disease
- Severe intracranial stenosis
- PFO
- Physical Inactivity/Obesity
- ETOH and Drug Use

Treatment Considerations

- Specific recommendations for prevention strategies often depend on ischemic stroke subtype.

Attempts to identify stroke subtype will assist in guiding the secondary prevention model via diagnostic workup.

TOAST Criteria

▶ Lacunar syndrome; with normal CT/MRI or subcortical stroke measuring <1.5 cm in diameter on CT or MRI. Most lacunar strokes are due to small vessel disease.

▶ Small vessel stroke: Subcortical stroke measuring <1.5 cm in diameter on CT/MRI without concomitant cortical infarct.

▶ Cardioembolic Stroke: Stroke attributable to arterial occlusion from an embolus that presumably arose from the heart

▶ Crypotgenic stroke: Unknown source despite diagnostic assessment

▶ Large Artery Atherosclerosis: Symptoms in the vascular distribution of a major intracranial or extracranial artery with >50% stenosis or occlusion on vascular imaging.

Diagnostics

▶ Evaluation for TIA should be adherent to evaluation for stroke

▶ Clinical Evaluation

▶ NCCT: Useful in detecting subacute ischemia, hemorrhage or mass lesion, however limited utility in determining acute ischemia

▶ MRI: Preferred method for evaluating acute ischemic infart; ideally within 24 hours of symptom onset

▶ Vascular imaging: CTA is widely accessible and has a higher sensitivity and positive predictive value than MRA for detection of intracranial stenosis and occlusion. Considered safe in patients with CKD. Carotid ultrasound may also be employed to r/o CAS.

Laboratory Testing

- POC blood glucose should be performed on all patients with suspected TIA

- CBC, Chemistry panel, A1C, and lipid panel can assist in identifying potential risk factors. FYI and non-fasting lipid panel is acceptable.

- Troponin assays are also suggested on all patients with TIA given shared risk factors for MI and AIS.

- ECG and telemetry are warranted to observe for Atrial fibrillation.

- If cardioembolic source suspected AHA/ASA recommends prolonged rhythm monitoring (at least 30 days).

To Echo or Not to Echo that is the question

▶ The role of echocardiography in TIA has not been well established but TTE echo is often performed to r/o structural abnormalities or source of cardioembolism.

▶ If suspicion for cardioembolism is low and the patient otherwise safe for discharge an expedited study can be performed outpatient (ideally within 1 week).

▶ Neurology should participate in this decision making however.

▶ If high degree of suspicion for cardioembolism TEE should be considered as well.

We have them in the ED, now what do we do with them?

▶ Multiple factors affect the ability of ED's or medical centers to care for patients with suspected TIA.

▶ Clinician experience, risk tolerance for neurovascular conditions, availability of imaging and access to neurovascular expertise.

▶ Rapid work-up protocols for TIA patients allow most patients to be discharged within 24 hours; depending on resource availability

▶ Stroke centers supporting critical access hospitals should be aware of the resources available to those hospitals when determining transfer for assessment and secondary treatment/prevention

Secondary Risk Reduction

▶ This will be based on risk stratification and outcome of work-up

▶ Antiplatelet (should be started within 12-24 hours of symptom onset ideally)

▶ Antihypertensive (long-term goal per AHA is <130/80)

▶ Anticoagulant (for patients with AF or other indications)

▶ Lipid lowering agent (goal LDL <70 mg/dL) high intensity assists in plaque stabilization, improved endothelial dysfunction and inflammatory response

▶ Diabetes Management

▶ Consider nutritionist consult (AHA encourages low sodium or Mediterranean diet

▶ Lifestyle modification: Smoking cessation, physical activity, ETOH moderation, cessation of recreational drug use

▶ Follow-up appointment

Stroke Education

▶ Utilize teach back methods; do they really understand what you taught?

▶ Multilingual education materials are very helpful

▶ Less is more; don't overwhelm them

▶ Communicate with PCP whenever possible; they are the key to successful changes in risk reduction

▶ Engage the family; they have skin in the game too

Final Thoughts

- TIA is a strong predictor of future stroke

- Requires careful evaluation

- Know your resources and seek help from neurovascular experts

- Encourage family participation in risk reduction

- Follow up appointments are essential

- If available utilize health coaches

- Small communities can benefit from healthy lifestyle challenges that assist in risk reduction overall

Thank you!

- Thanks to all of you who work hard every day to provide care to this patient population!

Resources

- **Diagnosis, Workup, Risk Reduction of Transient Ischemic Attack in the Emergency Department Setting: A Scientific Statement From the American Heart Association**

- Hardik P. Amin,

- Tracy E. Madsen,

- Dawn M. Bravata,

- Charles R. Wira,

- S. Claiborne Johnston,

- Susan Ashcraft,

- Tamika M. Burrus,

- Peter D. Panagos,

- Max Wintermark,

- Charles Esenwa and

- **… See all authors**

- Other version(s) of this article

- **Abstract**

Resources

- **2021 Guideline for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack: A Guideline From the American Heart Association/American Stroke Association**

- Dawn O. Kleindorfer,

- Amytis Towfighi,

- Seemant Chaturvedi,

- Kevin M. Cockroft,

- Jose Gutierrez,

- Debbie Lombardi-Hill,

- Hooman Kamel,

- Walter N. Kernan,

- Steven J. Kittner,

- Enrique C. Leira,

- Olive Lennon,

- James F. Meschia,

- Thanh N. Nguyen,

- Peter M. Pollak,

- Pasquale Santangeli,

- Anjail Z. Sharrief,

- Sidney C. Smith Jr,

- Tanya N. Turan and

- Linda S. Williams

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