Attacking TIAs: The Data to Drive Diagnostic Decision-Making and Management

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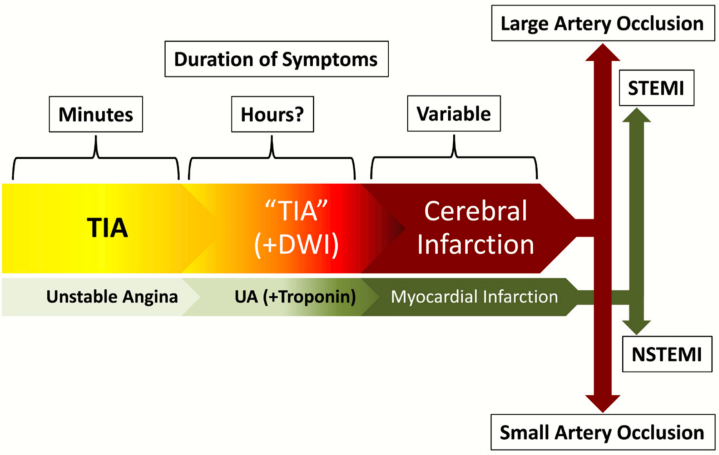
I. Think of TIA as part of the spectrum of acute cerebrovascular syndrome

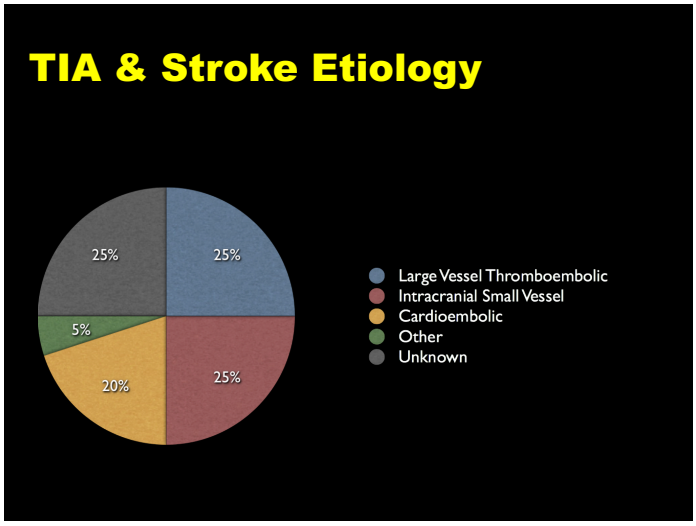
Spectrum of Acute Cerebrovascular Syndrome



Gomez CR et al. F1000 Research 2017

II. Cater workup to focus on:

a. Differentiation of TIA from Stroke & non-ischemic mimics
b. Etiologic Determination



III. A reasonable etiologic workup in the ED includes:

a. Brain Imaging (CT or preferably DW-MRI)
b. Cerebrocephalic vessel imaging (CTA, MRA of carotid ultrasound)
c. Cardiac (12-lead ECG & referral for prolonged rhythm monitoring +/- TTE)

IV. Two more points about brain imaging:

a. Diffusion-weighted MRI is the gold standard for acute ischemic stroke detection, but may be falsely negative in the brainstem for the first 24-48 hours

b. Perfusion imaging can improve your diagnostic accuracy and predict progression and early recurrence by identifying tissue at risk

V. Risk Stratification:

a. Clinical risk scores (ABCD2) are imperfect and should **not** be used to exclusively to determine resource allocation and disposition of TIA patients in the ED
b. Imaging-enhanced tools (ABCD3-I) have far more predictive ability, but require a heavily frontloaded workup
c. The Canadian TIA score appears to be the most practical tool, but awaits validation

VI. Disposition:

a. Rapid Access Clinics and TIA observation pathways in ED Clinical Decision Units offer safe and efficient alternatives to hospital admission
b. Admission is still indicated for certain patients:

WHO TO ADMIT?

- **Active comorbidities warranting active treatment**
- **"Crescendo" or "stuttering" symptoms**
- **Significant / critical large vessel stenosis**
- **New onset atrial fibrillation**
- **Inability to receive "urgent" follow-up**
- **Inability to access care in the event of recurrence**

VII. Management:

a. Dependent on specific etiology – generally antiplatelet unless clear cardioembolic source identified

Diagnosis	Current Strategy	Controversy / Investigation Status
Antiplatelet therapy	• Aspirin 81-325 mg daily, **or** • Clopidogrel 75 mg daily, **or** • Aspirin/dipyridamole 200 mg daily	Combination therapy with aspirin and clopidogrel may be beneficial if initiated early after TIA/minor stroke. Under ongoing investigation.[168] Triple antiplatelet therapy is also under investigation.[169]
Atrial fibrillation	• Warfarin to INR 2.0-3.0, **or** • Dabigatran 150 mg twice daily, **or** • Apixaban 5 mg twice daily, **or** • Rivaroxaban 20 mg/daily	No known active trials.
Carotid stenosis	• Carotid endarterectomy or stenting within 2 weeks of TIA if stenosis ≥ 70%	To date, the literature suggests that the preferred choice varies with age and short-term vs long-term risk tolerance.
Carotid dissection	• Any antiplatelet regimen or anticoagulation for at least 3-6 mo	No clearly superior treatment noted in the pilot trial CADISS and no additional studies thought feasible at this time.[172,173]
Intracranial stenosis	• Aspirin 325 mg daily **and (potentially)** • Clopidogrel 75 mg daily for 90 days	Concurrent management of blood pressure, lipids, and lifestyle risk factors is now recommended as well.
Patent foramen ovale	• Either antiplatelet therapy or anticoagulation	In the setting of patent foramen ovale and DVT, percutaneous closure might be considered; otherwise, available data do not support a benefit of closure.

Siket MS, Heitsch L, and Edlow JA. Transient Ischemic Attack: An Evidence-Based Update on Diagnosis and Management. In: Jagoda A, ed. *Emergency Stroke Care: Advances and Controversies, Volume I*. EB Medicine, LLC 2016:9-38