



Current Controversies in the Management of TIA

Although current practice guidelines recommend admission for most patients with transient ischemic attacks, managed care constraints present challenges to this approach. The lecturer will review current literature regarding the evaluation and admission criteria for these patients. Case studies will be reviewed that will identify a subset of patients who may be managed in an outpatient setting.

- Discuss the controversies in the management of TIA, including evaluation and admission criteria.
- List the diagnostic studies that should be performed emergently and those that should be done urgently.

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FACULTY

Martin A Samuels, MD, FACP

Professor, Neurology, Harvard Medical School; Neurologist-in-Chief, Brigham and Women's Hospital; Co-Chair, Partners Neurology, Boston, Massachusetts

CURRENT CONTROVERSIES IN THE MANAGEMENT OF TIA

I. Definitions

- A. Stroke: sudden or rapid onset of a neurological deficit in a vascular territory due to an underlying cerebrovascular disease lasting 24 hours or longer
- B. Transient ischemic attack (TIA): sudden or rapid; lasting less than 24 hours
 - 1. most (about 75%) are brief - less than 15 minutes
 - 2. distinguishing features from other transient disorders
 - a. syncope and near syncope from a cardiovascular cause do not respect vascular territories and are not associated with other brainstem symptoms and signs (e.g. diplopia, dysarthria, ataxia)
 - b. migraine usually shows positive phenomena (e.g. lights, paresthesias) rather than negative phenomena (e.g. paralysis, paresis) as is typical of TIA and migrates in a leisurely fashion over about 20 minutes
 - c. seizures usually show positive phenomena (e.g. movement) and migrate rapidly (in seconds). Speech arrest usually means seizures whereas aphasia generally means TIA. Shaking TIAs exist, but are rare.
 - d. vertigo emanating from a peripheral cause (e.g. benign paroxysmal positional vertigo, labyrinthitis) is usually violent, tortional, aggravated by head down position associated with hearing symptoms (e.g. deafness, tinnitus) and associated with rotatory nystagmus; whereas vertigo emanating from brainstem ischemia is usually less tortional, not associated with a hearing problem, either independent of position or aggravated by the head-up posture, and associated with either no nystagmus or with vertical or purely horizontal nystagmus.
 - 3. Distinguishing a TIA from a stroke in progress is not possible prospectively

II. Evaluation of the suspected TIA in the emergency department

- A. History from patient and observers (if possible)
- B. Length of the spell (long TIA's suggest embolism)
- C. Stereotypy if there have been multiple spells (stereotypy suggest flow decrement across a hemodynamically significant stenosis)

- D. Localization of pain (if any) periorbitally suggests anterior circulation; retroaural pain suggests posterior circulation
- E. Neurological examination should include:
 - 1. Carotid artery examination
 - a. palpation - limited value
 - b. auscultation - limited value
 - c. dynamic palpation - operator dependent
 - d. central retinal artery pressures - operator dependent
 - 2. Mental status
 - a. levels of consciousness
 - b. language
 - c. memory
 - d. visuospatial skills
 - 3. Cranial nerves
 - a. fundi
 - b. visual fields and acuity
 - c. eye movements and nystagmus
 - 4. Motor
 - a. gait
 - b. drift and/or pronation of upper extremities when held extended and supinated
 - 5. Sensory
 - a. primary modalities (pain/temperature; position sense; touch; vibration)
 - b. cortical modalities (2 point discrimination; graphesthesia; stereognosis; extinction)
 - c. Romberg test
 - 6. Coordination - FNF, HKS, gait
 - 7. Reflexes - proprioceptive and nociceptive
- F. Ancillary tests
 - 1. Ultrasound
 - a. carotid
 - b. transcranial
 - 2. Imaging
 - a. CT can rule out intracerebral hemorrhage
 - b. CTA often useful but slightly invasive
 - c. MRI, MRA and diffusion weighted imaging very useful if available
 - d. functional imaging (fMRI, SPECT, PET) rarely available or useful

- e. angiography is combined with interventional techniques (e.g. stents, angioplasty, intra-arterial thrombolysis), if indicated

III. Management of the Presumed TIA patient

- A. who can be sent home (with trepidation)
 - 1. numerous TIA's over many weeks or months
 - 2. remote (longer than a week) history
 - 3. rapid and complete evaluation can be obtained in the ambulatory setting
 - 4. spell was probably something else (e.g. migraine, partial seizure, near syncope, peripheral vertigo)
- B. Decision to admit independent of imaging and should not await imaging
- C. Admission should include something more than simple observation and heparin such as:
 - 1. thrombolysis (IV or IA)
 - 2. interventional procedure (e.g. clot lysis, angioplasty, stent)
 - 3. surgery (e.g. carotid endarterectomy)
 - 4. investigational protocol (e.g. cellular protection)
 - 5. intensive monitoring in NICU
- D. TIA and stroke protocols are useful if worked-out in teamwork among emergency medicine, neurology, neuroradiology and neurosurgery.
- E. Apply the Uncle Marvin rule in negotiating protocols with managed care organizations and hospitals