SJMH Emergency Department Policy

SJMH Emergency Observation Center: Transient Ischemic Attack (TIA) Diagnostic Evaluation

Department of Emergency Services
Policy Number P 4.2

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Policy

This policy is intended to outline the diagnostic guidelines for patients with TIA in the EOC.

Procedure

GENERAL PRINCIPLES:

1. The EOC evaluation of patients with TIA depends on and whether the TIA is of probable embolic source, whether the TIA involves the anterior circulation or the posterior circulation, and the age of the patient.
2. After the initial Emergency Department evaluation of the patient, initial diagnostic testing will be ordered based the policies below. However, the recommendations of the consulting neurologist may alter this testing.

DEFINITIONS:

1. Positive carotid ultrasound. Carotid ultrasound will be considered a positive test if it demonstrates a carotid lesion greater than 70% on the side appropriate for the patient's symptoms. Otherwise the carotid ultrasound will be considered negative.
2. Positive transthoracic or transesophageal echo. Patients who undergo a transthoracic or a transesophageal echo will be considered to have a positive test if a lesion is demonstrated which may be a source of cardio-embolic TIA. Otherwise this test will be considered a negative test.

NEUROLOGY CONSULTATION

- All patients sent to the EOC for TIA evaluation will have a neurology consult from the Ann Arbor Neurology group.
- Patients transferred to the EOC while neurology is still in the hospital (8am – 5pm, Monday through Friday) will be seen by neurology the day of their transfer to the EOC. After these hours, neurology consultation will be done at the earliest possible time the following day.
- Although testing will generally be per the policies below, changes may be made per the recommendation of the neurologist. Initiation of an anti-platelet agent will be done per neurology recommendations.
- In addition to their dictated note, the neurologist will leave a written note with a brief assessment and recommendations in the EOC chart. The neurologist will notify the Team 3 physician directly if there are any unusual recommendations.

VASCULAR EVALUATION

Anterior circulation symptoms

- Patients with TIA symptoms suggestive of anterior circulation involvement will get carotid duplex Doppler imaging to evaluate for carotid lesions as the source of TIA.
- If the carotid Duplex is negative, then the carotid work-up is complete and negative. If the carotid Duplex study is positive (i.e. >70% carotid lesion), vascular surgery will be consulted and further studies will be done per their recommendations. If the patient requires further testing (e.g. cerebral angiogram) or is being considered for carotid endarterectomy or carotid stenting, the patient will be admitted.

Posterior circulation symptoms

- Patients with TIA symptoms suggestive of posterior circulation involvement will have vascular imaging of the posterior circulation. CT angiogram may be done in most people, MRA can be done in those with renal insufficiency or other contraindications to IV contrast. If a posterior circulation lesion is demonstrated, anti thrombotic therapy may be started per the recommendation of the neurologist.

CARDIAC EVALUATION

If the vascular evaluation is negative, patients with TIA will be evaluated for a cardiac source. The routine EOC evaluation for cardiac disease as the source of TIA depends on the age of the patient:

- Age less than 55 years: Transesophageal echocardiography (TEE) is the procedure of choice in this group.
- Age 55-65 years: Patients with any known vascular risk factors (HTN, DM, high cholesterol, or smoking) will get a TTE. Patients without known vascular risk factors will have a TEE.
- Age greater than 65 years: Transthoracic echocardiography (TTE) will be performed on all patients greater than 65 years of age. If patients have an inadequate TTE (e.g. due to body habitus), they will require further evaluation with transesophageal echo.

*** Due to the unavailability of TEE on the weekends, ***all patients*** will have TTE on Saturdays and Sundays. If the neurologist feels that patients will also require a TEE, this may be done as an outpatient.

If cardiac evaluation reveals a cardioembolic source, the patient will be started on IV heparin and admitted for anti coagulation.

LABORATORY EVALUATION

- Cardiac lipid profile: All TIA patients in the EOC will have a cardiac lipid profile done. Results of this will be included in the patient's discharge paperwork.
- Hemoglobin A1C: All TIA patients with a known history of diabetes will have a hemoglobin A1C done. Results of this will be included in the patient's discharge paperwork.
- Laboratory evaluation of hypercoagulable state: Patients who are under 50 years of age and have no known stroke risk factors (e.g. atrial fibrillation, long standing diabetes or hypertension) will have laboratory evaluation for hypercoagulable state sent from the EOC. The laboratory tests include:
    - ✓ Anti-thrombin III
    - ✓ Protein C
    - ✓ Protein S
    - ✓ Factor V Leiden (activated protein C resistance)
    - ✓ Prothrombin 20210 mutation
    - ✓ Anticardiolipin antibodies
    - ✓ Lupus anticoagulant

ANTI PLATELET THERAPY

- Anti platelet therapy will be considered in patients who do not have a demonstrated carotid or cardiac source of their TIA. It will be started per the recommendation of the consulting neurologist.
- Anti-platelet therapy may be aspirin (81mg daily), Aggrenox (25/200mg twice daily), or Plavix (75 mg daily). The choice will be per the recommendation of the consulting neurologist.
- Patients on Coumadin who are begun on ASA will need close follow-up of their protime by their primary care physician.
- Patients who are started on a new anti platelet agent will need close follow-up with their primary care physician.

KNOWN CARDIAC SOURCE OF EMBOLISM

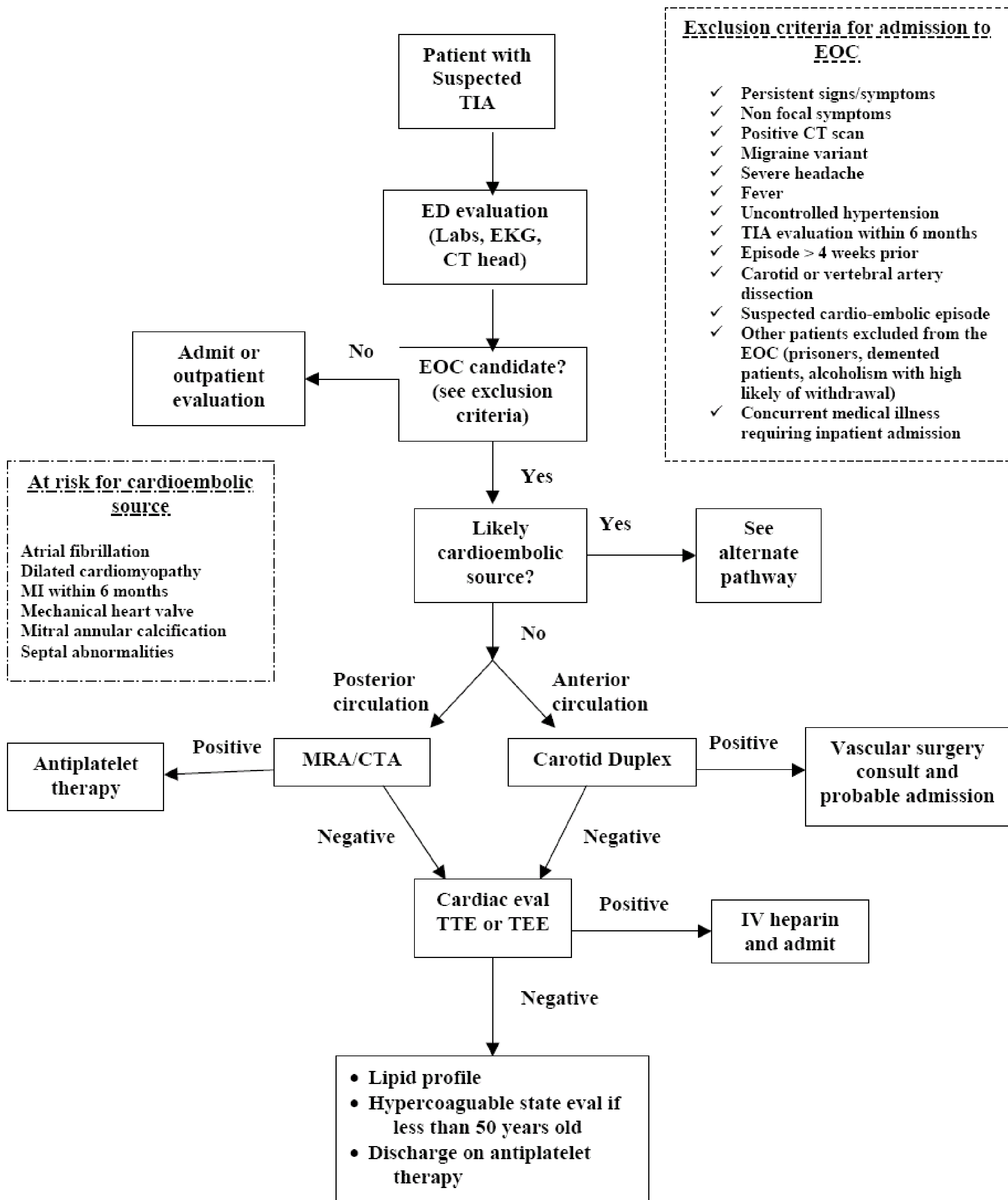
1. Patients with TIA and known potential cardiac source of embolism (atrial fibrillation, dilated cardiomyopathy, MI within 6 months, mitral annular calcification) will be transferred to the EOC ***if they are anticoagulated with an INR in the therapeutic range (greater than 2.0)***.
2. These patients will get the standard vascular evaluation. If this is negative, the patient may be discharged with addition of anti-platelet therapy to their regimen.
3. The exception to this is patients with mechanical heart valve. See below for the evaluation process for these patients.

TIA WITH MECHANICAL HEART VALVE

1. These patients will be evaluated initially with a transesophageal echo. If this is positive, with evidence of clot or vegetations on the valve, the patient will be considered for admission to the hospital for further treatment.
2. If the transesophageal echo is negative, patient will get the standard vascular evaluation according to the protocol. If this is negative, the patient may be discharged with addition of anti-platelet therapy to their treatment.

Approval Consultation Committee/Person	*Date*
Stroke Collaborative Practice Team	4.10.2007

Appendix A: Diagnostic guidelines for TIA patients in EOC



Appendix B: Alternative pathway for TIA patients with possible cardioembolic source