



Complete Summary

GUIDELINE TITLE

Tissue plasminogen activator (t-PA) for acute ischemic stroke.

BIBLIOGRAPHIC SOURCE(S)

Daniel Freeman Memorial Hospital. Tissue plasminogen activator (t-PA) for acute ischemic stroke. Inglewood (CA): Daniel Freeman Memorial Hospital; 2002. 10 p. [3 references]

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SCOPE

DISEASE/CONDITION(S)

Acute ischemic stroke

GUIDELINE CATEGORY

Treatment

CLINICAL SPECIALTY

Critical Care
Emergency Medicine
Internal Medicine
Neurology

INTENDED USERS

Nurses

GUIDELINE OBJECTIVE(S)

To provide guidelines for the Daniel Freeman Memorial Hospital registered nurse (RN) preparing and administering tissue plasminogen activator (t-PA) for acute ischemic stroke

TARGET POPULATION

Patients admitted to the emergency department with acute ischemic stroke who fulfill the following inclusion criteria:

1. Upon presentation to the emergency department, initiation of treatment must begin within 3 hours from the onset of acute ischemic stroke symptoms.
 - The patient must have been observed with an intact neurological system or neurological status normal for the patient
 - OR
 - The patient/family must be able to communicate the exact time that the patient was observed to have an intact neurological system or neurological status normal for the patient
2. Baseline computed tomography (CT) shows no evidence of (1) intracranial hemorrhage or (2) acute hypodensity involving a significant portion of the brain
3. Review of patient history shows no potential contraindications

INTERVENTIONS AND PRACTICES CONSIDERED

1. Laboratory tests prior to administration of tissue plasminogen activator (t-PA; Activase): Accucheck, basic metabolic panel, complete blood count, international normalized ratio (INR), and activated partial thromboplastin time (aPTT)
2. Administration of tissue plasminogen activator
3. Monitoring of post-thrombolysis neurological status and vital signs
4. Follow-up computed tomography (CT) scan
5. Management of intracranial hemorrhage during or after tissue plasminogen activator administration

MAJOR OUTCOMES CONSIDERED

Vital signs and neurological status after administration of tissue plasminogen activator (t-PA)

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Literature searches were completed via MEDLINE and PubMed to determine if any new data exist on the process for patient selection and administration of tissue plasminogen activator (t-PA).

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

All changes were reviewed and approved by all appropriate Medical Staff Committees, including, but not limited to Emergency Committee, Medicine Committee, Pharmacy & Therapeutics Committee, Performance Improvement Committee, Patient Focus Committee.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Standards

1. Administration of tissue plasminogen activator (t-PA) must be initiated within 3 hours of the onset of symptoms.
2. t-PA infusion will be administered via an infusion pump.
3. Two (2) intravenous access lines will be established: one for infusion and the second used as a saline lock, or for other medication administration. t-PA will be administered through a dedicated intravenous access.
4. Needle stick precaution signs will be posted at the bedside.
5. t-PA will be administered in the Emergency Department or in the Critical Care Area within the appropriate time frame.
6. Prior to administration of t-PA, the following labs will be obtained: Accucheck, Basic Metabolic Panel, complete blood count (CBC), international normalized ratio (INR) and activated partial thromboplastin time (aPTT).
7. Dosing of t-PA will be determined by the patient's weight, as follows:
 - 0.9 mg/kg IV (not to exceed a total 90mg dose, regardless of the patient's weight). ** A 10% bolus is given intravenous push (IVP) over one minute. The remaining 90% is infused over 60 minutes via an infusion pump.

** The maximum dose for t-PA for ischemic stroke is 90mg, regardless of the patient's weight.

- A t-PA infusion kit, with a written protocol, is maintained in the Emergency Department and the Pharmacy.

Post Thrombolytic Therapy Guidelines

1. Vital signs and neurological status will be closely monitored. Blood pressure should be maintained at less than 185/110 mmHg. See manufacturer guidelines for recommended management plan.
2. A follow-up computed tomography (CT) scan should be obtained 24 hours following administration of t-PA to rule out intracranial hemorrhage. Patients with worsening neurological status will undergo computed tomography scanning on an emergency basis.
3. No anticoagulant or antiplatelet therapy should be initiated for 24 hours following the administration of t-PA.

Management of Intracranial Hemorrhage During or Post t-PA Administration

1. Discontinue t-PA administration with onset of signs and/or symptoms of intracranial hemorrhage.
2. Order stat lab studies: international normalized ratio, activated partial thromboplastin time, platelet count, fibrinogen level
3. Consider administration of 6 to 8 units of cryoprecipitate fibrinogen containing factor VIII.
4. Consider administration of 6 to 8 units of platelets.
5. Consider neurosurgical evaluation.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Effective emergency treatment of acute ischemic stroke

POTENTIAL HARMS

Adverse effects of tissue plasminogen activator (t-PA), including intracranial hemorrhage (6% in clinical trials)

CONTRAINDICATIONS

CONTRAINDICATIONS

1. Rapidly improving or minor symptoms
2. Evidence of intracranial hemorrhage on pretreatment exam
3. History of intracranial hemorrhage
4. Suspicion of subarachnoid hemorrhage
5. Recent intracranial surgery or serious head trauma or recent previous stroke (<3 months)
6. Major surgery or serious trauma excluding head trauma in the previous 14 days
7. On repeated measurements, systolic blood pressure is >185 mmHg or diastolic blood pressure is >110 mmHg at the time treatment is to begin, and patients require aggressive treatment to reduce blood pressure to within these limits
8. Seizure at onset of stroke
9. Active internal bleeding
10. History of gastrointestinal or urinary tract hemorrhage within 21 days
11. Recent arterial puncture at a noncompressible site
12. Recent lumbar puncture
13. Intracranial neoplasm, arteriovenous malformation, or aneurysm
14. Known bleeding diathesis, including, but not limited to:
 - Current use of oral anticoagulants (e.g., warfarin sodium) or recent use with international normalized ratio (INR) >1.2
 - Administration of Heparin within 48 hours preceding the onset of the stroke or an elevated activated Partial Thromboplastin Time (aPTT) at presentation
 - Platelet count <100,000 mm³
15. Abnormal blood glucose (<50 or >400mg/dL)

16. Post myocardial infarction pericarditis

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

After approval of the guideline via the Medical Staff Committee structure, the guideline was disseminated by the Nurse Managers to the appropriate unit personnel. Inservicing was provided on the implementation and use of the guideline. The guideline was included in the hospital Policy and Procedure Manual.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Safety
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Daniel Freeman Memorial Hospital. Tissue plasminogen activator (t-PA) for acute ischemic stroke. Inglewood (CA): Daniel Freeman Memorial Hospital; 2002. 10 p. [3 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1997 Jun (revised 2002)

GUIDELINE DEVELOPER(S)

Daniel Freeman Memorial Hospital - Hospital/Medical Center

SOURCE(S) OF FUNDING

Daniel Freeman Memorial Hospital

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Daniel Freeman Memorial Hospital, Inc. Tissue plasminogen activator (t-PA) for acute ischemic stroke. Inglewood (CA): Daniel Freeman Hospitals, Inc; 1997. 10 p.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from Daniel Freeman Memorial Hospital, 333 North Prairie Avenue, Inglewood, CA 90301.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on October 1, 1998. The information was verified by the guideline developer on December 1, 1998. This summary was updated by ECRI on March 11, 2003. The information was verified by the guideline developer on March 24, 2003.

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