THROMBOLYTIC THERAPY FOR ACUTE MYOCARDIAL INFARCTION- ICU, ED

PURPOSE: To outline the management of the patient receiving a thrombolytic agent for acute myocardial infarction.

SUPPORTIVE DATA:

This Standard remains active until all IV anticoagulants (including heparin) are discontinued.

Thrombolytic agents promote clot lysis and are administered to patients with myocardial infarction (MI) to restore coronary blood flow and limit myocardial injury and infarction. Common thrombolytic agents include: recombinant tissue plasminogen activator (t-PA, Activase, alteplase), and tenecteplase (TNKase)

Criteria for receiving intravenous thrombolytics include any of the following:

- History consistent with acute MI
- Electrocardiogram (ECG) consistent with acute MI
- Hyperacute ST segment changes (at least 0.1 mV elevation in 2 contiguous ECG leads)
- Chest pain duration of less than or equal to 6 hours (exceptions may be made in individual cases) with persistent, uncontrolled pain/ST segment elevation
- Also has no absolute contraindications and few or no relative contraindications

Thrombolytic therapy must be approved by a Cardiology Fellow.

Absolute contraindications for thrombolytic agents include:

- Active internal bleeding
- Recent cerebral vascular accident (within 2 months)
- Recent head trauma
- Intracranial/intraspinal surgery
- Intracranial neoplasms
- Uncontrolled hypertension
- Recent surgery (within 2 months)

PRE-ADMINISTRATION ASSESSMENT:

1. Assess the following prior to administration:
   - Vital signs (VS) and level of consciousness (LOC)
   - Intensity of chest pain
   - 12 lead ECG as ordered
   - Baseline laboratory data (STAT) as ordered:
     - Troponin level at 0-4-8-12 hours and then every 24 hours
     - CBC, platelets, electrolytes, BUN, glucose
     - Prothrombin time
   - Contraindications

ASSESSMENT DURING ADMINISTRATION:

2. Assess VS a minimum of every 15 minutes.
3. Assess intensity of chest pain a minimum of every 15 minutes.
4. Monitor continuously for signs and symptoms of bleeding including insertion sites, change in LOC.

POST-ADMINISTRATION ASSESSMENT

5. Obtain a STAT 12 lead ECG immediately following discontinuation of infusion.
6. Assess for the following signs of reperfusion for 24 hours:
   - Cessation of chest pain (most sensitive)

- Reduction of ST -segment elevation (may take up to 24 hours to resolve)
- Reperfusion dysrhythmias: accelerated idioventricular rhythm, ventricular ectopy (PVCs, ventricular tachycardia), atrioventricular block
- Hypotension

7. Assess for bleeding/hemorrhage a minimum of every hour x 24 hours:
   - Changes in LOC
   - Oozing at puncture sites/ecchymosis
   - Gum bleeding
   - Hematemesis, melena
   - Hematoma
   - Hematuria

DAILY ASSESSMENT:

8. Evaluate the following daily as ordered and as drawn/ done:
   - Troponin
   - CBC, platelets, electrolytes, BUN, glucose
   - PT/APTT
   - 12 lead ECG

ADMINISTRATION:

9. Ensure three IV lines/ports are available, one line for each of the following as ordered:
   - Nitroglycerin (NTG) drip
   - Thrombolytic agent
   - Heparin drip (administered along with t-PA only)
10. Administer aspirin/antiplatelet agent as ordered.
11. Administer t-PA or TNKase (Activase, alteplase)

SAFETY:

12. Ensure two nurses perform independent double check to verify that medication, dose, and pump settings match provider order prior to administration.
13. AVOID the following during and 24 hours post-administration:
    - Invasive procedures/interventions
    - Brushing/flossing teeth
    - Shaving with a razor blade
14. Maintain bedrest.

PATIENT/FAMILY TEACHING:

15. Instruct on the following:
    - Notification of RN for chest pain
    - Purpose of thrombolytic and expected outcome
    - Signs/symptoms of adverse effects (e.g., bleeding)
    - Need for continuous ECG monitoring
    - Avoidance of brushing teeth, flossing, and shaving for 24 hours post-administration

REPORTABLE CONDITIONS:

16. Notify the provider immediately for:
    - Unrelieved chest pain
    - Signs/symptoms of bleeding
    - Hypotension/dysrhythmias
    - Abnormal laboratory values
    - Significant changes in: VS, LOC
    - ECG changes

ADDITIONAL STANDARDS:

17. Refer to the following as indicated:
    - Oxygen Therapy
    - Nitroglycerin Infusion – ICU
    - Fall /Injury prevention

DOCUMENTATION:

18. Document in accordance with documentation standards

Initial date approved: 02/95	Reviewed and approved by: Critical Care Committee Professional Practice Committee Nurse Executive Council Pharmacy + Therapeutics Committee Attending Staff Association Executive Committee	Revision Date: 08/95, 11/99, 03/05, 11/13,10/15, 6/2020

THROMBOLYTIC (AMI) ADMINISTRATION GUIDELINES

ASA

Administer 160-325 mg daily, begin immediately.

TNKase (Tenecteplase)

Preparation

- Aseptically withdraw 10 mL sterile water (included in package) using syringe provided.
- Inject entire contents (10 mL) in TNKase vial. Gently swirl. Do not shake.
- Final concentration is 5 mg/mL (50 mg/10 mL).
- Draw up and prepare to administer.

Administration

- Administer per physician's order, based on weight chart (provided in package). Max dose is 50mg.
- Give as IV bolus over 5 seconds. Flush line before and after administration.
- Ensure TNKase is infused with no other medications.

t-PA (Activase, alteplase)

Preparation

- Remove the vial of Activase and Sterile Water for Injection (SWFI) supplied.
- Using the transfer device and keeping the SWFI upright, insert the piercing pin vertically into the SWFI (Ensure NOT to invert the vial).
- Holding the vial of Activase upside down push the vial into the transfer device.
- Invert the two connected vials so the Activase is on the bottom (upright) and the SWFI is upside down. Allow the entire contents of the SWFI to flow (approximately 2 minutes).
- Gently swirl. Do not shake.

Administration

- Discard if not used within 8 hours
- Ensure t-PA is infused with no other medications
- Patients greater than 67 kg
    - 15 mg bolus over 1-2 minutes then
    - 50 mg over 30 minutes then
    - 35 mg over 60 minutes followed by heparin drip
- Patients less than or equal to 67 kg

    - 15 mg bolus over 1-2 minute
    - 0.75 mg/kg over 30 minutes (not to exceed 50 mg) then
    - 0.5 mg/kg over 60 minutes (not to exceed 35 mg followed by heparin drip)
- Maximum total dose: 100 mg
- Heparin Administration: As ordered by the provider