IREDELL HEALTH SYSTEM

Tenecteplase Administration	
Approved by: Dr. Jose Perez, Intensivist Dr. Vijay Nagpal, Emergency Medicine Diane Galati, MBA, BSN, RN, NE-BC Laura Rollings, PharmD, BCPS, BCGP	Last Revised/Reviewed Date:
Emergency Department Committee Critical Care Committee EBM - Stroke Committee P&T Committee	Date: 06/2024 Date: 06/2024 Date: 06/2024 Date: 06/2024
Summary of Revisions: N/A	

Standard: To provide guidance on the use of Tenecteplase (TNKase) in the care of Acute Ischemic Stroke or a Myocardial Infarction (MI) patient. Patients who are pregnant should refer to the *Alteplase Infusion* policy for Acute Ischemic Stroke treatment.

Tenecteplase is a fibrinolytic and binds to fibrin, converting plasminogen to plasmin. It has time dependent efficacy of 4.5 hours past symptom onset. Tenecteplase's 3-point mutation, increased fibrin specificity, and longer duration of action are the main factors differentiating this agent from alteplase. American Heart Association guidelines currently recognize tenecteplase as an alternative agent to alteplase (off label for ischemic stroke) in select patients with minor neurological impairment and no major intracranial condition.

Policy:
Any provider may order tenecteplase. Any Critical Care RN or Emergency Room RN who has been in-serviced on tenecteplase administration and has demonstrated knowledge of complications and treatment, contraindications, and general administration may administer tenecteplase. Tenecteplase administrations may be given in the Emergency Room or Critical Care.

Telephone orders are to be only accepted when the patient has been fully evaluated by the provider ordering the tenecteplase. If the provider has not evaluated the patient, the provider must be present when the tenecteplase is administered.

Dosing:

Diagnosis	**Acute Ischemic Stroke**	**Myocardial Infarction (MI)**
Dose & Rate of Administration	Administer as a single IV Push over 5 seconds: 0.25 mg/kg (maximum total dose: 25 mg)	Administer as a single IV Push over 5 seconds: <60 kg: 30 mg ≥60 to <70 kg: 35 mg ≥70 to <80 kg: 40 mg ≥80 to <90 kg: 45 mg ≥90 kg: 50 mg
Eligibility Criteria	See **Appendix A** (attached)	
Special Instructions	• Do not give aspirin, heparin or warfarin or other anticoagulants for 24 hours post	

	tenecteplase administration. • Maintain BP less than 180/105.	

Contraindications Include:

- Allergy to tenecteplase
- Active internal bleeding
- Recent (within 3 months) intracranial or intraspinal surgery or serious head trauma
- Known bleeding disorder
- Severe uncontrolled hypertension unresponsive to emergency therapy
- Intracranial neoplasm, arteriovenous malformation, or aneurysm
- Prior intracranial hemorrhage
- Suspected aortic dissection
- Ischemic stroke within 3 months, except when within 4.5 hours
- Significant closed head or facial trauma within 3 months with bony fracture or brain injury
- Leqembi (lecenemab) administered in the past 6 months
- Refer to Appendix A: Eligibility Criteria for Tenecteplase use in the Setting of Acute Ischemic Stroke

Procedure:

1. Obtain order to administer tenecteplase
2. Explain purpose of tenecteplase administration to patient and/or family by provider
3. Start 2 IVs with #20 protective catheters
4. Be aware of all major contraindications listed above.
5. Ensure all lab work has been drawn prior to administration of tenecteplase. Provider should be notified of labs results.
6. Prepare tenecteplase for administration according to instructions provided in the product box. Emergency Room RNs may prepare in department for Acute Ischemic Stroke patients, while pharmacy shall prepare for inpatient need. For MI patients, tenecteplase MI specific product will be stored in the pharmacy and will need to be obtained prior to preparing and administering in the Emergency Department.
7. Verify dosage. The pharmacist or ordering provider and second RN must verify dosage. Verification of dose must be documented in the patient's electronic medical record (EMR).
8. *If applicable to indication,* administer **Heparin Infusion** per specified protocol per provider's orders. Monitoring and adjustments to be made according to protocol. *Note:* If patient has received an anticoagulant within the last 24 hours, or if the patient has an indwelling epidural or intrathecal catheter, contact provider prior to administering heparin.
9. Precautions –
    a. Do not add, push or piggyback any medications into the tenecteplase administration. Tenecteplase is not compatible with any other medication.
    b. Ensure all medication in the syringe is administered to the patient. After tenecteplase, flush peripheral IV with 10 mL of Normal Saline Flush.
    c. Observe strict bedrest with minimum patient handling.
    d. Avoid all IM injections 24 hours after therapy, if possible.
    e. Do venipunctures prior to administration of tenecteplase. Following administration, perform venipunctures carefully and only as required.
    f. If ABG's must be collected, compression of the puncture site for 30 minutes is recommended.

Monitoring:

1. Evaluate the patient's status during the tenecteplase administration with special attentions to:
    a. Cardiac rhythm
    b. Vital signs
    c. Venipuncture sites
    d. Hematuria
    e. GI and vaginal bleeding
    f. Neurological status (changes)
2. Observe for possible complications and allergic reactions (urticarial, hypotension, severe headache, orolingual edema and fever). Notify provider if any were to occur.
3. Observe for effects of drug interactions – anticoagulants and antiplatelet medications increase the risk of bleeding is given prior to, during, or after tenecteplase therapy.
4. If *minor* bleeding is observed (oozing around venous or arterial puncture) – apply direct pressure and pressure dressing should be applied.
5. If *major* bleeding is observed:
    a. Stop Tenecteplase and heparin therapy.
    b. Notify provider.
    c. Obtain thrombin time STAT.
    d. Treat bleeding appropriately with regard to site.
    e. Transfuse with blood products as ordered per provider.

Documentation:

1. Document administration time, including: IV site, needle site, dosage. Verification of dosage by two RNs.
2. Document any complication observed during therapy (e.g. bleeding, change in neuro status or cardiac status).
3. For *Acute Ischemic Stroke* use, nursing staff shall document all neuro checks and vital signs on the Post Thrombolytic Assessment Flowsheet.
4.

References:

"American Stroke Association: A Division of the American Heart Association." American Heart Association, Inc., https://www.stroke.org/en

LexiComp Online. Lexi-Drugs Online, Hudson, Ohio: UpToDate, Inc.; 2021; Last Updated April 29, 2024.

INITIAL EFFECTIVE DATE: 08/2024
DATES REVISIONS EFFECTIVE:
DATES REVIEWED (no changes):

Appendix A: Eligibility Criteria for tenecteplase use in the Setting of Acute Ischemic Stroke

Inclusion Criteria:

- Clinical diagnosis of ischemic stroke causing measurable neurologic deficit
- Onset of symptoms < 4.5 hours before beginning treatment; if the exact time of stroke onset is not known, it is defined as the last time the patient was known to be normal.
- Age ≥18 years of age (>80 proven to be as effective as for younger patients)

Exclusion Criteria:

Historical

- Significant head trauma or ischemic stroke in the previous 3 months
- Previous intracranial hemorrhage
- Intracranial neoplasm, arteriovenous malformation or aneurysm
- Intracranial or intraspinal surgery within the prior 3 months
- Arterial puncture at a non-compressible site in previous 7 days
- Leqembi (lecenemab) administered in the past 6 months

Clinical

- Symptoms suggest subarachnoid hemorrhage
- Elevated blood pressure (systolic > 185 mm Hg or diastolic > 110 mm Hg)
- Blood glucose levels < 50 or > 400 mg/dL
- Acute Ischemic stroke and symptoms consistent with infective endocarditis
- Acute head trauma in posttraumatic infarction that occurs during the acute in-hospital phase
- Active intracranial hemorrhage
- Acute bleeding diathesis, including but not limited to conditions defined in "Hematologic"
- Pregnancy

Hematologic

- Platelet count < 100,000/mm^3, INR > 1.7, aPTT > 40 s, or PT > 15 seconds
- Low molecular weight heparin within the previous 24 hours
- Current use of a direct thrombin inhibitor or direct factor Xa inhibitor with evidence of abnormal laboratory tests (aPTT, INR, platelet count ECT, TT) or the patient has received a dose of these agents within the previous 48 hours.

Head CT scan

- Evidence of acute intracranial hemorrhage
- Extensive regions of obvious hypodensity consistent with irreversible injury

Relative Exclusion Criteria:

- Moderately severe stroke symptoms demonstrating early improvement
- Seizure at the onset of stroke with postictal neurologic impairments
- Major surgery or serious trauma within previous 14 days
- Gastrointestinal or urinary tract bleeding in the previous 21 days
- Myocardial infarction in the previous 3 months