

Tenecteplase Administration: Safety Considerations

NOVEMBER 2023

Tenecteplase for stroke

Tenecteplase is a thrombolytic drug, with a higher fibrin specificity and longer half-life as compared to alteplase, the long-standing thrombolytic treatment for stroke. Tenecteplase is currently being studied in several trials for use in treatment of acute ischemic stroke.¹

From the Minnesota Stroke Program Hospital Inventory conducted in 2023 we learned that 98% of respondents (112 hospitals) use tenecteplase as the primary thrombolytic drug for treating acute ischemic strokes. Broken down by designation status, 100% Comprehensive and Primary Stroke centers use tenecteplase as compared to 98% Acute Stroke Ready Hospitals and 67% of non-designated facilities. Considering the wide-spread use yet minimal resources available, the Minnesota Stroke Advisory Group developed this resource with administration and safety considerations for IV tenecteplase treatment of acute ischemic stroke in Acute Stroke Ready Hospitals.

Safety Considerations

The following are considerations for hospitals related to safe storage and use of tenecteplase in treatment of acute ischemic stroke. Work with your telestroke and/or stroke center partner, stroke teams, and pharmacy department to adopt safety considerations that best fit your workflow and organizational needs and resources.

- Storage: **Locked** in secure location
 - Medication dispensing system (pyxis/Omniceil)
 - Cabinet
 - Pharmacy
- Labeling:
 - Consider bright colored label/notification on box or directly on the bottle indicating use for acute ischemic stroke
 - Include specific dosing for stroke. *Dosing for MI as indicated on the tenecteplase box is different than the dosing for stroke*
 - Stroke dose: 0.25 mg/kg
 - **Maximum stroke dose = 25mg (5mL)**
 - Stroke dosing chart

TENECETPLASE ADMINISTRATION: SAFETY CONSIDERATIONS

| Patient Weight (kg) | MAX Tenecteplase dose (mg) in this weight range | MAX Volume Tenecteplase to be administered (mL) |
|---------------------|---|---|
| 60 kg or less | 15 mg | 3 mL |
| 61 kg to 70 kg | 17.5 mg | 3.5 mL |
| 71 kg to 80 kg | 20 mg | 4 mL |
| 81 kg to 90 kg | 22.5 mg | 4.5 mL |
| 91 kg or greater | 25 mg | 5 mL |

- Consider rubber banding to add a tactile reminder beyond flat label to draw extra attention to the bottle and/or box and use for stroke (especially if your facility has one box that may be used for MI or stroke thus unable to add a stroke sticker directly to the box)
- Education: Provide education and training to staff on the safe administration of IV Tenecteplase for stroke. Consider hands-on competency for nursing staff.

Administration:

- Obtain and document accurate weight for dosing.
- Verify total dose to be administered.
- Complete dual sign-off and document in electronic health record
- Develop consistent process for administering.
 - Tips to consider:
 - Include a 5ml syringe alongside the box (kit) for more accurate and safe dosing (see Tenecteplase kit images below).
 - Round the dose for more accurate dosing.
 - Consider the Rule of 5s for safe administration:

Utilize the Rule of 5s

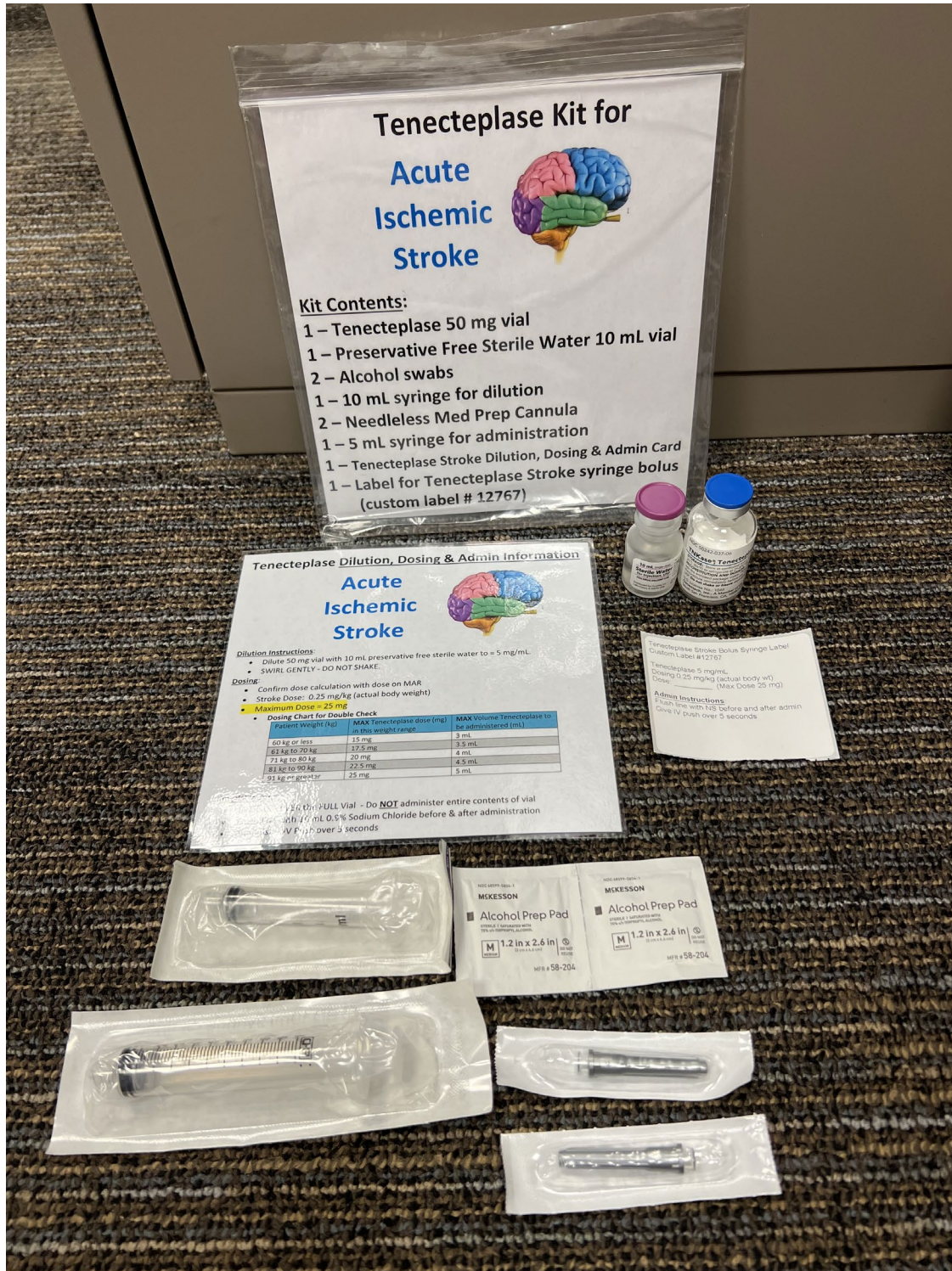
| 5 | 5 | 5 | 5 | 5 |
|--|--|--|---------------------------------|---|
| mg/mL | mL max dose | flush | administer | flush |
| Reconstitute 50mg vial with 10mL sterile water | 5mL max dose 0.25mg/kg (max 25mg per 5mL) | Flush IV with 5mL saline before administration | Administer bolus over 5 seconds | Flush IV with 5mL saline after administration |

*Image courtesy of Regions Hospital, Carol Droegemueller, MS, APRN, CNS, CNRN | Stroke Program Coordinator

Monitoring:

- Document vital signs and neurological assessments every 15 minutes for 2 hours, then every 30 minutes for the next 6 hours, then every hour for the next 16 hours.
- Documents any changes in neurological condition (develops severe headache, acute hypertension and/or bradycardia, nausea or vomiting, or decrease in level of consciousness)
 - Notify provider and prepare for stat imaging.
 - Follow protocol if hemorrhage is present.
- Assess for any signs of angioedema
 - Treat according to protocol for allergic reaction/anaphylaxis
 - Monitor airway, consider early intubation for any airway compromise.

Example Tenecteplase Kit for Acute Ischemic Stroke- Sanford Fargo Medical Center



Example Tenecteplase Kit for Acute Ischemic Stroke- Gundersen St. Elizabeth's Hospital

Image 1:

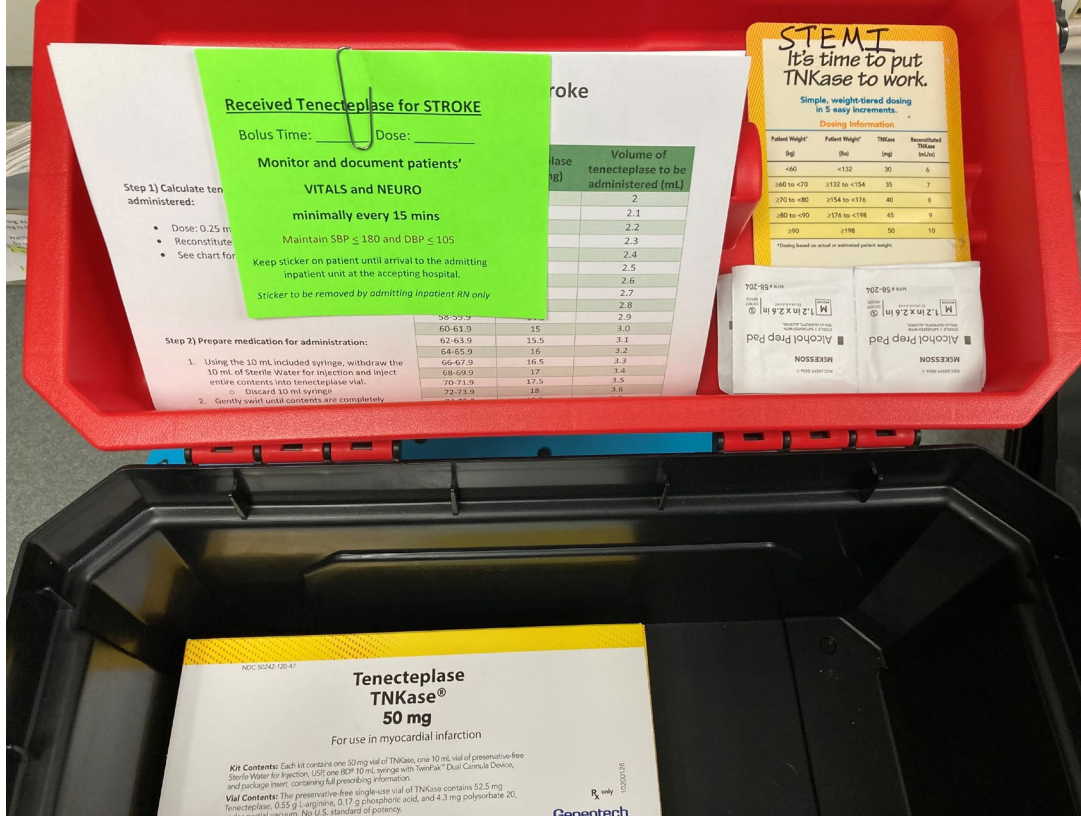
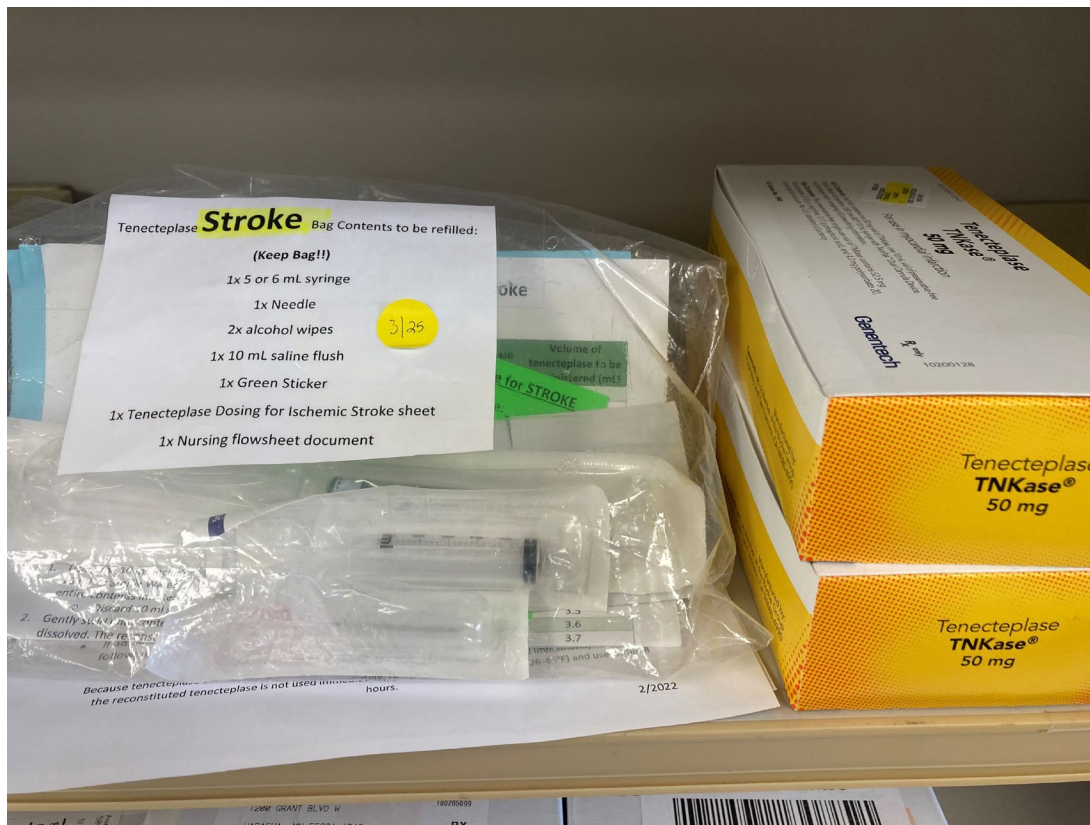


Image 2:



Developed in partnership with the Minnesota Stroke Advisory Group. Last updated: November 2023. For questions, please contact the MDH Stroke Program at health.stroke@state.mn.us

References:

1. Warach, S., Dula, A, Milling T. (2020, November). Tenecteplase Thrombolysis for Acute Ischemic Stroke. Stroke Volume 51, Issue 11, November 2020; Pages 3440-3451