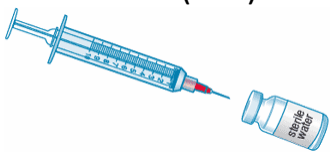
Acute Stroke Protocol Update for ED

Tenecteplase (TNK) Instead of Alteplase (tPA) for Patients with Ischemic Stroke at Trillium Health Partners (THP) MH-Site



Rationale for use of Tenecteplase (TNK) with Ischemic Stroke:

The use of alteplase (tPA) has been the standard thrombolytic therapy for ischemic stroke for many years. The Intravenous Tenecteplase compared with alteplase for acute stroke in Canada (**AcT**) randomized controlled trial (Menon et al., June, 2022) combined with evidence to date, demonstrate that Tenecteplase (TNK) is a reasonable choice of thrombolytic therapy for ischemic stroke. The use of IV thrombolysis, when administered within 4.5hrs of onset of an acute ischemic stroke, has been shown to reduce morbidity, mortality and improve functional outcome.

What Does this Mean to Me?

- Trillium Health Partners will now be utilizing Tenecteplase (TNK) in addition to Alteplase (tPA) for the treatment of ischemic stroke
- Tenecteplase (TNK) will be easier to prepare and administer. Only a bolus is needed. You no longer need to prepare an infusion as you do for alteplase (tPA)
- All thrombolytic treatment indications, inclusion and exclusion criteria remain the same
- Can be given up to 4.5 hours from onset of symptoms
- Must perform independent double check with two health care professionals
- Monitoring and care of the patient pre and post Tenecteplase (TNK) administration is exactly the same as tPA
- Dosing for Acute Ischemic Stroke is 0.25mg/kg (Max dose 25mg/dose) and is **NOT** the **SAME** as other indications i.e. Acute ST-Elevation Myocardial Infarction
- **Maximum Dosage of Tenecteplase (TNK) for Acute Ischemic Stroke is 25 mg = 5 mL**
- A new order set will be available in EPIC to support ordering and documentation
- Tenecteplase (TNK) will be available in the ED RESUS Pyxis

Evidence indicates that **time is brain** - administration of IV thrombolysis as early as possible post stroke is associated with better outcomes.

Start Date:

May 2024

Tenecteplase (TNK) Dosing, Reconstitution and Administration Guide for Acute Ischemic Stroke

Reconstitution Procedure:

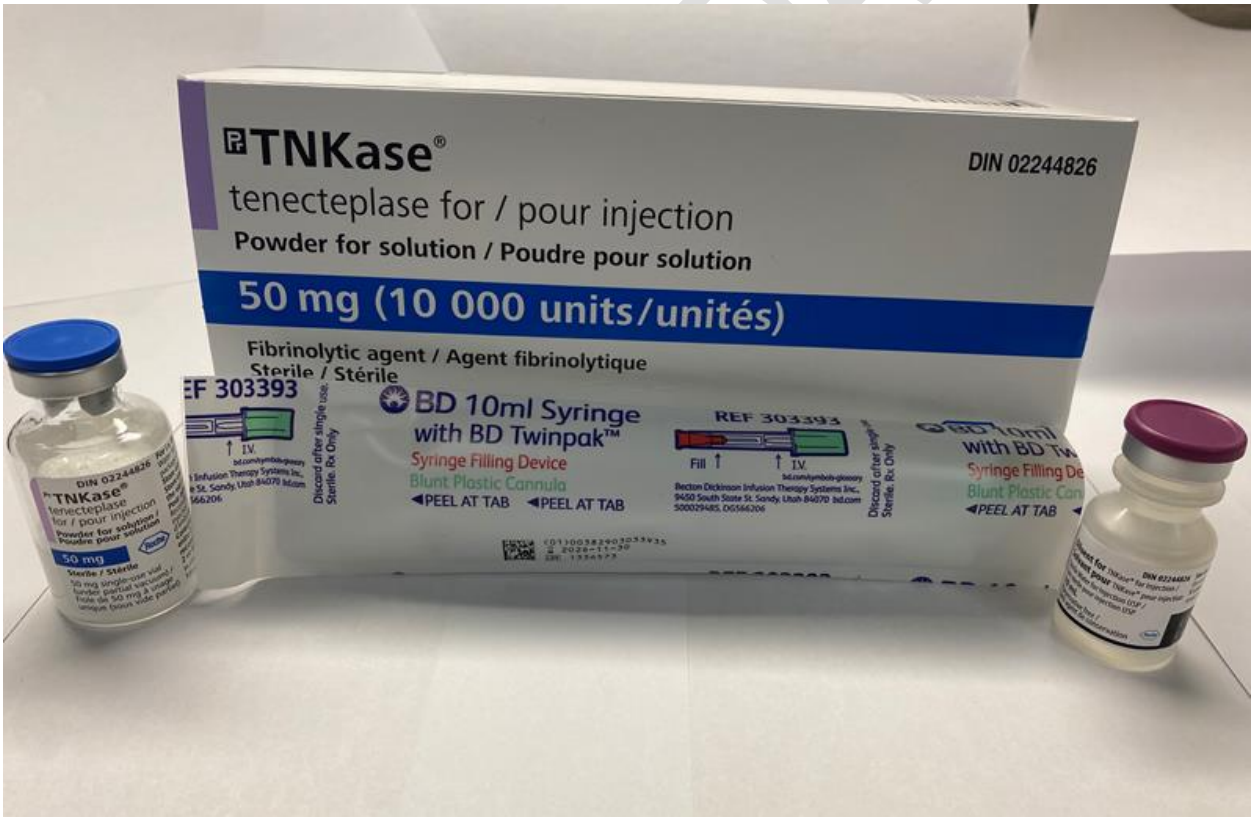
- Using a 10 mL syringe and needle, withdraw 10 mL of Sterile Water from the supplied diluent vial.
- Inject all 10 mL of sterile water into the 50 mg Tenecteplase vial directing the water toward the side of the vial. Slight foaming is not unusual; any large bubbles will dissipate if the product is allowed to stand undisturbed.
- GENTLY swirl the vial to mix completely. DO NOT SHAKE. Solution should be colourless or pale yellow and transparent.

Dosing Information:

FOR TREATMENT OF ACUTE ISCHEMIC STROKE		
Intravenous Tenecteplase **(TNK: 0.25 mg/kg, maximum 25 mg)** Dosing information (50 mg vial diluted with 10 mL Sterile Water)		
Patient Weight (kg)	Tenecteplase Dose (mg)	Volume Tenecteplase to be administered (mL)
30-31	7.6 mg	1.5 ml
32-33	8.1 mg	1.6 ml
34-35	8.6 mg	1.7 ml
36-37	9.1 mg	1.8 ml
38-39	9.6 mg	1.9 ml
40-41	10.1 mg	2.0 ml
42-43	10.6 mg	2.1 ml
44-45	11.1 mg	2.2 ml
46-47	11.6 mg	2.3 ml
48-49	12.1 mg	2.4 ml
50-51	12.6 mg	2.5 ml
52-53	13.1 mg	2.6 ml
54-55	13.6 mg	2.7 ml
56-57	14.1 mg	2.8 ml
58-59	14.6 mg	2.9 ml
Greater than or equal to 60 to less than 70	17.5 mg	3.5 mL
Greater than or equal to 70 to less than 80	20 mg	4 mL
Greater than or equal to 80 to less than 90	22.5 mg	4.5 mL
Greater than or equal to 90	25 mg **MAX DOSE**	5 mL **MAX**

Administration Procedure:

1. Determine the correct STROKE dose of the Tenecteplase based on patient-weight band dosing. Acute Ischemic Stroke dosing is NOT the SAME other indications i.e. Acute MI. See appropriate dosage as per Dosing Table above. **NOTE: Ensure you are using the appropriate size syringe (i.e. 3mL or 5mL)**
2. Perform an independent double check with two health care professionals. Withdraw the appropriate volume of solution based on patient weight and perform an independent double check with another qualified healthcare professional (nurse/physician)
    a. Note: The recommended total dose should not exceed 25mg or 5mL
3. Using an established IV site, flush with 20mls of normal saline to ensure patency before Tenecteplase administration
4. Administer Tenecteplase as an IV Bolus dose over 5 seconds
    a. Note: Do not mix Tenecteplase with any other medications or use any filters on IV tubing
5. Flush with 20mls of normal saline following administration of Tenecteplase
6. Discard remaining Tenecteplase in vial



Nursing Implication/Monitoring Post Tenecteplase:

Please be aware that these do not encompass all nursing implications/monitoring, and we recommend consulting the relevant order set for comprehensive information.

- Avoid intramuscular injections and nonessential handling for the first few hours following treatment with Tenecteplase
- Avoid traumatic procedures if possible (urinary catheterization and NG insertion and suctioning).
- Only perform venipunctures when necessary, use an upper extremity vessel that can be manually compressed. Apply pressure for at least 30 minutes, apply a pressure dressing, and check site frequently for bleeding
- Monitoring (Monitor your patient as you would with Alteplase (tPA) treated patient):
    a. Monitor and document for adverse events such as neurological worsening, clinical deterioration, bleeding or angioedema
    b. Monitor for hemorrhaging/hematoma formation during and after therapy at the puncture stie and any other potential sites
        i. Intracerebral: headache, change in mental status, neurologic signs (pupil size, hand grip, extremity motion), vision
        ii. Gastrointestinal: Hematemesis, abdominal pain or tenderness, fall in blood pressure, melena or red blood in stool
        iii. Respiratory Tract: hemoptysis, respiratory distress, chest pain, hypotension
        iv. Urinary Tract: hematuria or dark brown urine
        v. Vaginal bleeding
        vi. Ecchymosis or petechiae
        vii. Retroperitoneal: severe back pain, hypotension
        viii. Notify Neurologist/NP/MET if: change in neurological status (decreased level of consciousness, increased weakness, aphasia) or headache, nausea, vomiting or if evidence of bleeding (e.g. gastrointestinal, genitourinary, oral, IV site oozing) or angioedema
- **In Emergency Department** from completion of Tenecteplase administration: T, HR, RR, BP q15 minutes x 2 hrs, then q30mins x4hrs, then Q1h X18hrs then q2h x48 hours **AND Modified NIHSS** Q1h X24hrs, then Q2h X24hrs, then Q12 hrs X3 days, then Daily. To be reassessed when patient ordered to inpatient ward or under neurologist's discretion.
- **In 3J/ICU** from completion of Tenecteplase administration: T, HR, RR, BP q15 minutes x 2hrs, then q30mins x4hrs, then Q1h X18hrs then q2h **AND Full NIHSS** Q1h X24hrs, then Q2h X24hrs**,** then Q12 hrs X3 days, then Daily. To be reassessed when patient ordered to inpatient ward or under neurologist's discretion.
- Note risk for bruising from BP cuff with regular monitoring. Avoid taking BP measurements on arm of venipuncture site during and after Tenecteplase administration
- ECG monitoring prior to, during and after therapy or as ordered by attending physician
- For more information, please access the Adult Parenteral Therapy Drug Information: Tenecteplase for Acute Ischemic Stroke located on the THP Hub