STROKE SERVICES BC
Provincial Health Services Authority

Stroke Services BC
Position Statement

Date of Decision: November 2022 **Anticipated Date of Review:** Fall 2023

Topic: Use of tenecteplase (TNK) in acute ischemic stroke (AIS)

Summary Recommendation: Stroke Services BC supports the use of tenecteplase (TNK) as an option for thrombolytic treatment in acute ischemic stroke (AIS).

Context for Change:

Alteplase (tPA) has been the sole stroke-thrombolytic agent used across BC and the gold standard for acute ischemic stroke (AIS) treatment since 1996. However, recent evidence has shown that intravenous tenecteplase (0.25mg/kg) is a safe alternative for all patients presenting with AIS who meet standard criteria for thrombolysis. Within Canada, Alberta has made a fulsome switch to tenecteplase whilst other provinces are working on implementation plans.

Description:

Tenecteplase has workflow benefits over alteplase for thrombolytic treatment in AIS. Of most significance, tenecteplase administration is a single IV-direct bolus dose. The total time required for administration is 5-10 seconds, as compared to the bolus dose and 60-minute IV infusion time required for alteplase. This rapid administration allows for the possibility of immediate transport by a basic EMS crew, which can expedite access to endovascular therapy for eligible patients. Further, without the need for an infusion pump, nursing workflow burden is minimized, which in-turn should assist with faster door to needle times. These potential workflow advantages can save critical time in a situation where every minute counts.

Evidence:

The Canadian Stroke Best Practice Recommendations 2022[1] update states tenecteplase may be considered as an alternative to alteplase within 4.5 hours of acute stroke symptom onset.

Published in the summer of 2022, the Canadian AcT trial[2] evaluated the efficacy of tenecteplase compared to alteplase in the treatment of AIS. This phase 3 pragmatic trial recruited 1600 patients from both urban and rural hospitals across Canada. Findings demonstrate that tenecteplase (0.25mg/kg) is non-inferior to alteplase

[1] Heran, M., Lindsay, P., Gubitz, G., et al. (2022). Canadian Stroke Best Practice Recommendations: Acute Stroke Management, 7th Edition Practice Guidelines Update, 2022. *Canadian Journal of Neurological Sciences / Journal Canadien Des Sciences Neurologiques,* 1-94. doi:10.1017/cjn.2022.344

[2] Menon, B., Buck, B., Singh, N., et al. (2022). Intravenous tenecteplase compared with alteplase for acute ischaemic stroke in Canada (AcT): a pragmatic, multicentre, open-label, registry-linked, randomised, controlled, non-inferiority trial. Lancet. 400(10347):161-169. doi: 10.1016/S0140-6736(22)01054-6.

(0.9mg/kg). Alteplase and tenecteplase share an equivalent safety profile, with tenecteplase showing a trend towards superiority on 90-day outcomes.

SSBC acknowledges this is an emerging practice change. We will continue to review new evidence as it evolves and encourage ongoing provincial discussion about the implications of new evidence on practice.

Considerations:

Staff education for the use of tenecteplase in stroke care will be paramount for patient safety. The treatment dose of tenecteplase in stroke (maximum dose 25mg) is **half** the cardiac dose (maximum dose 50mg). Education will need to stress this difference, and all care providers should be made aware that current manufacturer packaging materials for tenecteplase only outline cardiac dosages. Drug monographs internal to each health authority should be updated to guide medication preparation and appropriate dosages for stroke care.

Tenecteplase is not currently approved by Health Canada for the treatment of acute ischemic stroke. Whilst this does not inhibit the use of tenecteplase for stroke care, it is considered 'off label' use. This requires informed consent from the patient or substitute decision maker. However, as per CSBPR Section 5.2, thrombolysis is "considered the standard of care for acute stroke treatment. Routine procedures for emergency consent apply"[3].

Implementation of tenecteplase for AIS will require alignment of many partners in planning including Pharmacy, BC Ambulance, Emergency Medicine, Nursing and others. SSBC understands that each region will need to make a decision regarding implementation readiness that considers the needs of all of these partners in order to support best practice stroke care.

Approved by:

- Provincial tenecteplase clinical working group – Approved Jan 2023
- Executive Stroke Steering Committee – Approved Feb 2023

For questions, please contact:

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Attachments (click to open):

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[3] Boulanger J, Lindsay M, Gubitz G, et al. Canadian Stroke Best Practice Recommendations for Acute Stroke Management: Prehospital, Emergency Department, and Acute Inpatient Stroke Care, 6th Edition, Update 2018. *International Journal of Stroke*. 2018;13(9):949-984. doi:10.1177/1747493018786616