NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Evaluation

Tenecteplase for thrombolytic treatment of acute ischaemic stroke

Draft scope

Draft remit/evaluation objective

To appraise the clinical and cost effectiveness of tenecteplase within its marketing authorisation for thrombolytic treatment of acute ischaemic stroke.

Background

A stroke is a type of cerebrovascular disease that happens when the blood supply to part of the brain is cut off, or when there is bleeding in or around the brain. Transient ischaemic attack is known as a mini-stroke when stroke symptoms last for a short time and it is an indicator of future risk of strokes. Broadly, strokes are classified as either haemorrhagic or ischaemic. A haemorrhagic stroke occurs when a blood vessel in or around the brain ruptures causing blood to leak out.[1] An ischaemic stroke arises when there is a blockage in a blood vessel serving the brain caused by a blood clot (thrombus). Acute ischaemic stroke is characterised by the sudden loss of blood circulation to an area of the brain and a corresponding loss of neurological function. This may lead to symptoms such as numbness or weakness of the face, arm or leg on 1 side of the body, and often problems with speech and swallowing.

Each year over 100,000 people in United Kingdom have a stroke.[2] The prevalence rate of stroke and transient ischaemic attacks in 2021/2022 was 1.8% in England and 2.2% in Wales.[3] NICE guideline 128 estimates that ischaemic strokes account for over 85% of all strokes. Mortality statistics in England and Wales from 2018 indicate that approximately 31,202 people died from cerebrovascular diseases (including strokes).[4]

Treatment of acute ischaemic stroke aims to restore blood flow to the brain and includes thrombolysis with alteplase, which dissolves blood clots. If acute stroke is suspected, NICE guideline 128 recommends brain imaging immediately to inform diagnosis and treatment options. Early initiation of treatment for ischaemic stroke is associated with improved functional outcomes. NICE technology appraisal 264 recommends alteplase for treating acute ischaemic stroke in adults if:

- treatment is started as early as possible within 4.5 hours of onset of stroke symptoms, and
- intracranial haemorrhage has been excluded by appropriate imaging techniques.

The technology

Tenecteplase (Metalyse, Boehringer Ingelheim) does not have marketing authorisation for thrombolytic treatment of acute ischaemic stroke. It has been studied in clinical trials where tenecteplase is compared with alteplase in people aged 18 years and over with acute ischaemic stroke. An inclusion criterion in these trials is that treatment should be offered within 4.5 hours of stroke onset.

Tenecteplase currently has marketing authorisation in the UK for the thrombolytic treatment of suspected myocardial infarction with persistent ST elevation or recent left Bundle Branch Block within 6 hours after the onset of acute myocardial infarction symptoms.

Intervention(s)	Tenecteplase
Population(s)	People with acute ischaemic stroke who can have thrombolytic treatment
Comparators	Other established clinical management without tenecteplase including: • alteplase
Outcomes	The outcome measures to be considered include: • disability or change in daily activities status • functional recovery • neurological deficit • mortality • length of hospital stay • adverse effects of treatment, including bleeding events • health-related quality of life
Economic analysis	The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year. The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared. Costs will be considered from an NHS and Personal Social Services perspective.
Other considerations	If the evidence allows the following subgroup will be considered: • subgroups by time to treatment (0 to 3 hours and 3 to 4.5 hours) Guidance will only be issued in accordance with the marketing authorisation. Where the wording of the therapeutic indication does not include specific treatment combinations, guidance will be issued only in the context of the evidence that has underpinned the marketing authorisation granted by the regulator.

Related NICE recommendations	**Related technology appraisals:** Alteplase for treating acute ischaemic stroke (2012), NICE Technology appraisal guidance TA264 **Related NICE guidelines:** Stroke and transient ischaemic attack in over 16s: diagnosis and initial management, Published: 01 May 2019, Last updated: 13 April 2022, NICE guideline NG128 Stroke and TIA (2023) Clinical Knowledge Summaries Stroke rehabilitation in adults (2013) Clinical guideline CG162 **Related NICE guidelines in development:** Stroke rehabilitation in adults, In development [GID-NG10175], Expected publication date: 18 October 2023 **Related interventional procedures:** Therapeutic hypothermia for acute ischaemic stroke (2019) Interventional procedures guidance IPG647 Mechanical clot retrieval for treating acute ischaemic stroke (2016) Interventional procedures guidance IPG548 Inducing and maintaining normothermia using temperature modulation devices to improve outcomes after stroke or subarachnoid haemorrhage (2021) Interventional procedures guidance IPG701 Extracorporeal membrane oxygenation (ECMO) for acute heart failure in adults (2014) Interventional procedures guidance IPG482 **Related quality standards:** Stroke in adults (Published: 29 June 2010, Last updated: 12 April 2016) Quality standard QS2
Related National Policy	NHS England (2019) The NHS long term plan NHS England. Service Specifications: Specialised Vascular Services (Adults). 170004/S NHS England. Clinical Commissioning Policy: Mechanical thrombectomy for acute ischaemic stroke (all ages). 170033P. March 2018 NHS England. 2013/14 Standard Contract for Neurosciences: Specialised Neurology (Adult). D04/S/a. NHS Digital (2022) NHS Outcomes Framework England, March 2022 Annual Publication Department of Health and Social Care (2016) NHS outcomes framework 2016 to 2017

	NHS England (2018) NHS manual for prescribed specialist services (2018/2019) (Chapter 11)

Questions for consultation

Where do you consider tenecteplase will fit into the existing care pathway for acute ischaemic stroke?

Are all relevant comparators being considered for tenecteplase?

Have all relevant subgroups been considered?

- Are there any subgroups where only alteplase can be offered as a treatment option for acute ischaemic stroke?

Are there any other outcomes that should be considered when evaluating the clinical and cost-effectiveness of tenecteplase?

Are there any diagnostics costs (for example imaging costs) which should be considered prior to treatment with tenecteplase for acute ischaemic stroke?

Would tenecteplase be a candidate for managed access?

Do you consider that the use of tenecteplase can result in any potential substantial health-related benefits that are unlikely to be included in the QALY calculation?

- Please identify the nature of the data which you understand to be available to enable the committee to take account of these benefits.

Is tenecteplase likely to be similar in its clinical effectiveness and resource use to any of the comparators (for example, alteplase)? Or in what way is it different to the comparators?

Will tenecteplase be used in the same place in the treatment pathway as the comparator(s)? Have there been any major changes to the treatment pathway recently? If so, please describe.

Will tenecteplase be used to treat the same population as the comparator(s)?

Overall is tenecteplase likely to offer similar or improved health benefits compared with the comparators?

Would it be appropriate to use the cost-comparison methodology for this topic?

- (Information on NICE's health technology evaluation processes is available at https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-technology-appraisal-guidance/changes-to-health-technology-evaluation).

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. Please let us know if you think that the proposed remit and scope may need changing in order to meet these aims. In particular, please tell us if the proposed remit and scope:

- could exclude from full consideration any people protected by the equality legislation who fall within the patient population for which tenecteplase will be licensed;

- could lead to recommendations that have a different impact on people protected by the equality legislation than on the wider population, e.g. by making it more difficult in practice for a specific group to access the technology;

- could have any adverse impact on people with a particular disability or disabilities.

Please tell us what evidence should be obtained to enable the committee to identify and consider such impacts.

NICE is considering evaluating this technology through its Single Technology Appraisal process. (Information on NICE's health technology evaluation processes is available at https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-technology-appraisal-guidance/changes-to-health-technology-evaluation).

References

1. Stroke Association, https://www.stroke.org.uk/what-is-stroke/types-of-stroke

2. What is the prevalence of stroke and TIA in the UK? Stroke and TIA (2023), Clinical Knowledge Summaries

3. Quality and Outcomes Framework, 2021-22, NHS Digital

4. Leading causes of death, UK, 2001 to 2018, Office for National Statistics (ONS)