

# SAFETY AND EFFECTIVENESS OF TENECTEPLASE AND ALTEPLASE IN ACUTE ISCHAEMIC STROKE: DATA FROM THE UK NATIONAL STROKE REGISTRY (SSNAP)

Kaili Stanley<sup>1</sup> Kevin Vasquez<sup>1</sup> Martin James<sup>2</sup> Ajay Bhalla<sup>1,3</sup>

<sup>1</sup> Sentinel Stroke National Audit Programme, King's College, London, United Kingdom

<sup>2</sup> Royal Devon University Healthcare NHS Foundation Trust, Exeter, United Kingdom

<sup>3</sup> Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

## BACKGROUND & AIMS

Tenecteplase (TNK) has been shown to be at least non inferior to Alteplase (rtPA) in the emergency treatment in acute ischaemic stroke but real world data is limited in the UK. This study aims to explore the safety and effectiveness of TNK in routine practice over one year.

## METHODS

Data were collected from the National Stroke Registry for England, Wales, and Northern Ireland (The Sentinel Stroke National Audit Programme: SSNAP) through a continuous clinical audit. Results were analysed for patients with ischaemic stroke admitted to hospital and receiving thrombolysis (either TNK or rtPA) between October 2024 and September 2025.

## RESULTS

Of 12919 patients who underwent thrombolysis:

- 8284 (64.1%) received TNK and 4635 ((35.9%) received rtPA
- There were no differences in NIHSS on arrival (TNK 8, IQR: 5-15 vs rtPA 9, IQR 5-15, P>0.05).
- Higher rates of patients treated with TNK were thrombolysed within an hour of arrival (60.4% vs 52.8%, P<0.05)
- Patients treated with TNK had faster door to needle times (53, IQR: 38-76 minutes vs 59, IQR: 42-86 minutes, P<0.05).
- There were higher rates of patients receiving rtPA who underwent thrombectomy (5.8% vs 6.9%, P<0.05).
- There were no differences in symptomatic intracranial haemorrhage (TNK: 3.3% vs rtPA: 3.4%, P>0.05).
- There were no differences in patients independent at discharge (modified Rankin Score 0-2; TNK 49% vs rtPA 48%, P>0.05)
- There were no differences in inpatient mortality (TNK 10.8% vs rTPA 10.4%, P> 0.05).

	rtPA			TNK			p-value
	median	q1	q3	median	q1	q3	
Age	75	64	83	75	64	82	NS
Pre-stroke mRS	0	0	2	0	0	1	NS
NIHSS @ arrival	9	5	15	8	5	15	NS
Onset to Arrival (minutes)	111	77	161	106	75	159	p<.05
Door to needle (minutes)	59	42	86	53	38	76	p<.05
NIHSS @ 24h post thrombolysis	4	1	10	4	1	9	NS
mRS at discharge	3	1	4	3	1	4	p<.05

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**Table 2:** Description of median patient characteristics, stroke care processes and outcomes for patients who received either TNK or rtPA between October 2024=September 2025

	Alteplase		Tenecteplase		p-value
	N	%	N	%	
<b>Total strokes</b>	<b>4,635</b>	<b>36</b>	<b>8,284</b>	<b>64</b>	
Gender (male)	2,549	55	4,642	56	NS
Gender (female)	2,079	45	3,626	44	NS
Prestroke mRS 0-2	3,926	85	7,092	86	NS
Prestroke mRS 3-5	709	15	1,192	14	NS
Percentages thrombolysed < 1h of arrival	2,445	53	5,007	60	p<.05
Thrombectomy	321	7	476	6	p<.05
Extended hours thrombolysis (wake up/stroke unknown time of onset)	540	12	905	7	NS
<b>Comorbidityies</b>					
Atrial Fibrillation	472	10	770	9	NS
Congestive Heart Failure	261	6	458	6	NS
Dementia	245	5	806	6	NS
Diabetes	975	21	1,868	23	p<.05
Hypertension	2,550	55	4,438	34	NS
Stroke/TIA	854	18	1,499	12	NS
<b>Outcomes</b>					
Cerebral Haemorrhage on imaging (post thrombolysis)	553	12	806	10	p<.05
Cerebral Haemorrhage AND worsening NIHSS (post thrombolysis)	157	3	275	3	NS
Discharge mRS=6	489	10	897	11	NS
Discharge mRS 0-2	2,202	48	4,053	49	NS
Discharge mRS 3-5	1,953	42	3,334	40	p<.05

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**Table 1:** Stroke characteristics, care processes and outcomes for patients who received either TNK or rtPA between October 2024-September 2025

## CONCLUSION

Real world data revealed faster process times with TNK as well as similar effectiveness and safety outcomes supporting the transition of TNK over rtPA as the first line thrombolytic agent. .

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