

Evaluation of Safety and Efficacy of Tenecteplase for Acute Ischemic Strokes: A Retrospective Study

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Background

- Stroke is the 5th leading cause of death and a leading cause of long-term disability in the US¹
- Of all strokes, 87% are ischemic¹
- Current stroke guidelines list alteplase as the standard of care fibrinolytic for the treatment of acute ischemic stroke²
- ATTEST showed tenecteplase was noninferior to alteplase based on radiologic and clinical outcomes³
- NOR-TEST showed similar outcomes and safety profile between alteplase and tenecteplase⁴
- EXTEND-IA TNK showed that tenecteplase had higher reperfusion rates, better functional outcomes, and similar safety profile in those undergoing mechanical thrombectomy⁵
- Further research is important to help establish tenecteplase as an FDA-approved, guideline accepted and recommended treatment for acute ischemic stroke

Methods

- Retrospective chart review that took place at HSHS St. Elizabeth's in O'Fallon, IL
- Inclusion criteria: ≥ 18 years old, received tenecteplase for presumed or confirmed acute ischemic stroke between March 30, 2022, and September 15, 2022
- Exclusion criteria: < 18 years old, did not receive tenecteplase, received tenecteplase for an indication other than presumed/confirmed ischemic stroke
- Data was collected from hospital electronic medical records; protected health information (PHI) was not documented in the excel data collection sheet, it was kept in a separate coding sheet
- Institutional Investigational Review Board (IRB) approval was obtained for this study

Results

Patient Characteristics (n=13)	
Age, years (range (Avg))	41 to ≥ 90 (63.7)
Sex	
-Female	8 (61.5%)
Race	
-White	11 (84.6%)
Past medical history	
-atrial fibrillation	5 (38.5%)
-diabetes	3 (23.1%)
-hyperlipidemia	7 (53.8%)
-hypertension	8 (61.5%)
-stroke/TIA	5 (38.5%)
Smoking status	
-current	3 (23.1%)
-former	1 (7.7%)
-never	8 (61.5%)
Medication use	
-anticoagulants	0 (0%)
-antiplatelets	5 (38.5%)
Weight at time of TNK (kg)	52.6 to 121.7 (89.5)
Glucose (mg/dL)	96 to 176 (124)
Door to needle time	
<60 minutes	5 (38.5%)
60 to 90 minutes	5 (38.5%)
>90 minutes	3 (23.1%)
False stroke	1 (7.7%)

Efficacy and Bleeding Outcomes	
NIHSS, range (average)	
-baseline	1 to 35 (12)
-follow-up	0 to 31 (7.8)
-change in score	-10 to +5 (-3.5)
Mechanical reperfusion	6 (46.2%)
Death	1 (7.7%)
Bleeding event (assessed in 9)	1 (11.1%)

Limitations

- Small sample size
- Some data was unavailable after patients were transferred to a different hospital
- Use of tenecteplase was not directly compared to use of alteplase

Conclusions

Tenecteplase use for acute ischemic stroke at HSHS St. Elizabeth's Hospital shows promising safety and efficacy results. This study also found that 46.2% of patients were transferred for potential mechanical reperfusion. However, the sample size was small so larger follow-up studies should be completed in order to confirm these results.

References

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