The Safety of Early Initiation of Antithrombotic Therapy 8 Hours After Intravenous Thrombolysis for Acute Ischemic Stroke

Twisha Patel, PharmD; Vaishnavi Parchuri, MD; Cristen Whittaker, PharmD; Joseph Reilly, BS, PharmD, BCGP; Shana Szymborski, PharmD, MHS, BCPS; Mandy Binning, MD

AtlantiCare Regional Medical Center, Atlantic City, N.J., U.S.A.

Introduction

- Intravenous thrombolytics are standard treatment for eligible acute ischemic stroke (AIS) patients. American Heart Association / American Stroke Association Guidelines recommend brain imaging at 24 hours before initiating an antithrombotic, due to the risk of hemorrhagic transformation (HT).[1] However, earlier antithrombotic initiation may improve patient outcomes.[2,3]
- Our hospital implemented a practice change using a new AIS clinical pathway that prompts fibrinogen testing and head computed tomography (CT) at 8 hours post-thrombolysis to guide earlier antithrombotic therapy.

Objective

The purpose of this pre-post-intervention study is to assess the safety of an 8-hour screening protocol to support earlier antithrombotic use, potentially reducing the standard 24-hour post-thrombolysis window.

Methods

- The option for earlier antithrombotic therapy was approved and implemented at our hospital in March 2025 for AIS patients without HT confirmed by head CT and a fibrinogen level ≥150 mg/dL. (**Figure 1**)
- A Discern Analytics report identified patients who received a thrombolytic between August 2024 and June 2025. Patients were categorized into pre-intervention and post-intervention groups. The post-intervention group included patients who received any antithrombotic therapy within 24 hours of thrombolysis. **(Figure 2)**
- Cases of HT following thrombolysis were identified using a stroke core quality measure defined by Joint Commission under the Certification for Comprehensive Stroke Centers (CSTK) program, known as CSTK-05a.
- The primary outcome was the HT rate in the pre- and post-intervention periods.
- HT rates were compared using Fischer's Exact Test due to the small sample size and rare event occurrence, with $\alpha = 0.05$.
- Study approval was granted by the ARMC Institutional Review Board.

Results

Figure 1. Early Antithrombotic Pathway

Initiating Antithrombotic Therapy (AT) Post- IV Thrombolytic (IVT)

i. Do not administer antithrombotic agents for 8 hours after IVT.

ii. All patients will be screened in 8 hours to determine their candidacy for antithrombotic initiation, unless determined otherwise by the care team.

- In the event patients are initially deemed inappropriate for Early AT (8 hr) Pathway OR fail to meet criteria as defined in the table below, the Traditional AT (24 hr) Pathway will be followed.

Early AT (8 hr) Pathway

Perform head CT and **draw fibrinogen** 8 hours after IVT – patients must meet **BOTH** of the following criteria to start antiplatelet and/or anticoagulation:

- ✓ Fibrinogen level ≥ 150 mg/dL
- ✓ CT negative for hemorrhagic transformation

Traditional AT (24 hr) Pathway

Perform head CT 24 hours after IVT – patients must meet the following criteria to start antiplatelet and/or anticoagulation:

- ✓ CT negative for hemorrhagic transformation

Figure 2. Study Inclusion

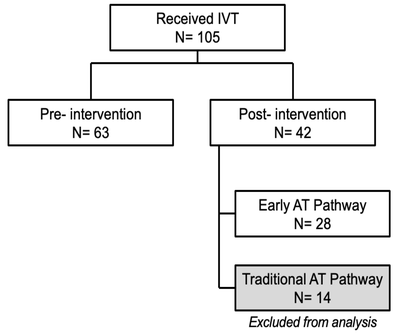

Figure 3. Monthly CSTK-05a Rates (Pre- and Post-Intervention)

CSTK-05a	Hemorrhagic Transformation Rate for IV Thrombolytics							
2024								
	Aug	Sept	3rd Q	Oct	Nov	Dec	4th Q	2024 Total rate
CSTK-05a	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.00%

Implemented early antithrombotic therapy

X

2025							
CSTK-05a	Jan	Feb	Mar	1st Q	Apr	May	June*
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%

***June** One case of hemorrhagic conversion (1 of 8 cases who received IVT)
Conversion happened before antiplatelet therapy was initiated per head CT

Table 1. Comparison of HT Rates Between Periods

Group	Months with Event	p-value
Pre-intervention (Aug 2024 – Feb 2025)	**0%**	**1.0***
Post-intervention (Mar – Jun 2025)	**0%**	

*With zero observed events, the rule of three (3/n) estimates the upper bound of the 95% confidence interval for the true event rate as 10.7% post-intervention and 4.8% pre-intervention.

Discussion

- In our safety analysis of HT events post-thrombolysis in AIS patients, no difference was observed between the study periods (p=1.0). (**Table 1**)
- Although the overall monthly CSTK-05a rate was higher in the post-intervention period, the single HT event in June 2025 was unrelated to early antithrombotic therapy and did not represent an intervention-related safety risk. (**Figure 3**)
- These findings suggest that fibrinogen levels and head CT can be safely used as markers of bleeding risk after thrombolytic administration, supporting earlier antithrombotic initiation. However, interpretation should consider the relatively short post-intervention period, which precludes establishing non-inferiority.

Conclusion

Our findings suggest that earlier antithrombotic use, when guided by fibrinogen level and imaging at 8 hours post-thrombolysis, appears to be safe and does not suggest a signal of harm. Continued monitoring is warranted to further validate the findings of this study.

References

Disclosure panel: The authors have nothing to disclose concerning financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter.