


Original Research Article

# Thrombolysis for stroke in a tertiary care center from Hyderabad

Veena Narisetty<sup>1</sup>, Kamera Sateesh Kumar<sup>2</sup>, S. Bharath Kumar<sup>3\*</sup>

<sup>1</sup>Professor and head, <sup>2</sup>Assistant Professor, <sup>3</sup>Post Graduate  
Department of Neurology, Gandhi Medical College/ Gandhi Hospital, Secunderabad, Hyderabad,  
Telangana, India

\*Corresponding author email: [drbharath87@gmail.com](mailto:drbharath87@gmail.com)

	International Archives of Integrated Medicine, Vol. 5, Issue 11, November, 2018. Copy right © 2018, IAIM, All Rights Reserved. Available online at <a href="http://iaimjournal.com/">http://iaimjournal.com/</a> ISSN: 2394-0026 (P)                      ISSN: 2394-0034 (O)
	Received on: 29-10-2018                      Accepted on: 04-11-2018 Source of support: Nil                      Conflict of interest: None declared.
<b>How to cite this article:</b> Veena Narisetty, Kamera Sateesh Kumar, S. Bharath Kumar. Thrombolysis for stroke in a tertiary care center from Hyderabad. IAIM, 2018; 5(11): 40-43.	

## Abstract

**Background:** Intravenous thrombolysis with recombinant tissue plasminogen activator (rtPA) within 4.5 hours of symptom onset is currently approved for treatment of acute ischemic stroke. It improves the rate of favourable outcomes despite the risk of hemorrhagic transformation.

**Aim:** To study the outcomes of IV thrombolysis.

**Materials and methods:** All patients who came to the emergency within window period with signs and symptoms suggestive of acute ischemic stroke were included in the study. CT brain plain was done to rule out ICH. Base line glucose and BP was recorded. NIHSS was calculated. Patients whose score was between 5-25 were given IV thrombolysis with rTPA or tenecteplase. Drug was given according to availability and it was free of cost

**Results:** Total of 41 patients was given thrombolysis. 28 were given alteplase and 13 were given tenecteplase. Improvement in NIHSS was 3.34 points at the time of discharge. Almost 40% improved significantly improved in follow up mRS scores

**Conclusion:** Our study concluded that thrombolysis for ischemic stroke provides early functional ability and decreased morbidity without any significant risk of bleeding.

## Key words

Stroke, Thrombolysis, rTPA, Tenecteplase, Alteplase.

## Introduction

Intravenous thrombolysis with recombinant tissue plasminogen activator (rtPA) within 4.5

hours of symptom onset is currently approved for treatment of acute ischemic stroke. It improves the rate of favourable outcomes despite the risk of hemorrhagic transformation.

The number needed to treat to prevent one death or disability in this time window is 8 [1]. Patients with mild to moderate strokes, younger persons, and those treated very early have the best chance for a favourable outcome [2, 3].

Alteplase is given as an infusion over a period of approximately 1 hour and has been associated with a low incidence of reperfusion for large-vessel occlusion before thrombectomy in several trials [4-6]. Tenecteplase is a genetically modified variant of alteplase with greater fibrin specificity and a longer half-life that permits bolus administration [7].

Unfortunately, this life-saving, disability reducing drug is still underused, the important reasons being the narrow time window, the fear of bleeding complications, doubts regarding its effectiveness, and economic constraints.

Constant efforts are required to educate the public that stroke is a treatable emergency.

### **Materials and methods**

All patients who came to the emergency with in window period with signs and symptoms

suggestive of acute ischaemic stroke were included in the study. CT brain plain was done to rule out ICH. Base line glucose and BP was recorded. NIHSS was calculated. Patients whose score was between 5-25 were given IV thrombolysis with rTPA or tenecteplase. Drug was given according to availability and it was free of cost.

**Inclusion criteria:** Patients with signs and symptoms suggestive of ischemic stroke

**Exclusion criteria:** patients with hemorrhagic stroke, stroke mimics.

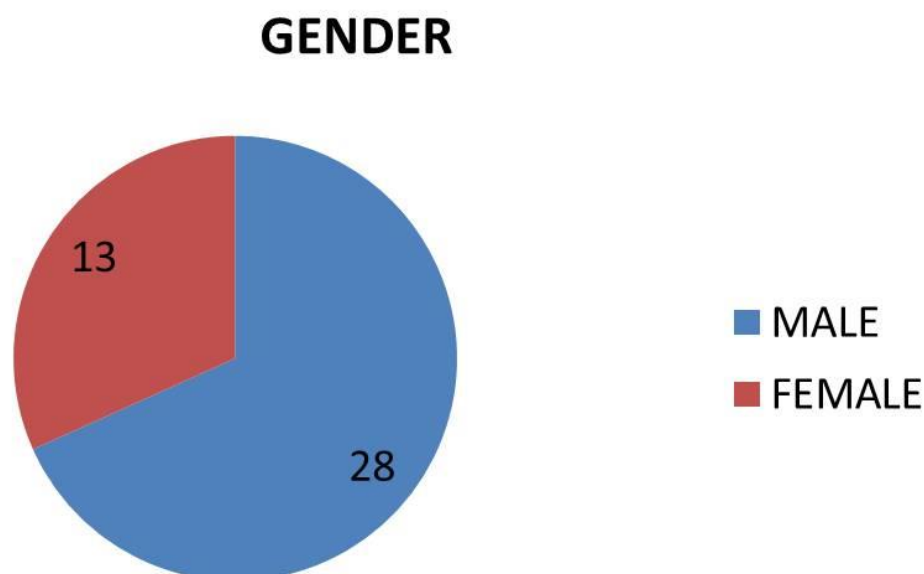
Total of 41 cases were studied.

### **Results**

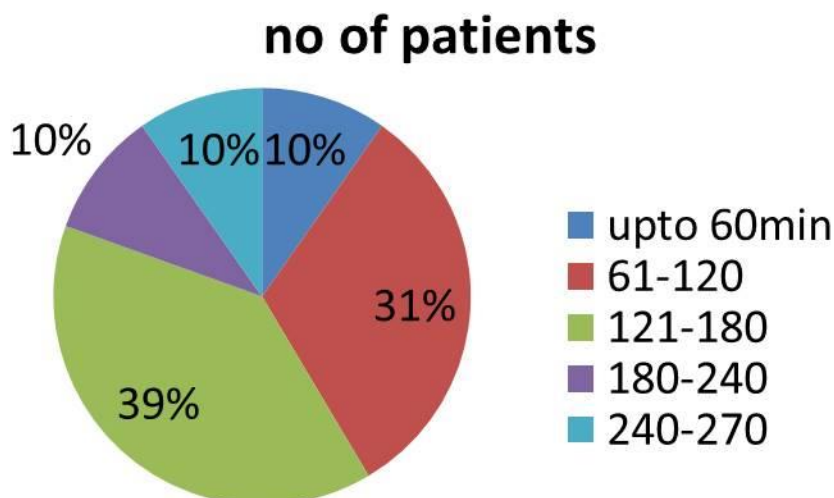
Out of 41 cases, 28 were males and 13 were females (**Figure – 1**). Age ranged from 31-71 years (mean 49.45 years). Male mean age was 49.28 years. Female mean age was 58.30 years. 14 patients were younger than 45 years (12 males and 2 females).

Window period ranged from 45min-270min with mean 146.26 min (**Figure – 2**).

**Figure - 1:** No of males and females.



**Figure - 2:** No. of patients presented with in window period.



Door to needle time 30min -63min with mean 44.73 min. Past history of TIA and strokes were in 3 patients. 13 patients were given tenecteplase. 28 patients were given alteplase.

NIHSS at admission ranged from 5-22 mean 12.80 (**Table - 1**). NIHSS at discharge 3-16 mean 9.46 (**Table - 2**). Difference in NIHSS 3.34 points. Out of 41 patients 3 patients died (parenchymal hematoma type 2, AF, MCA STEM INFARCT).

mRS scores in follow up after 3 months was as per **Table - 3**.

**Table - 1:** NIHSS at admission.

NIHSS	No of patients
5-10	13
11-15	17
16-20	9
>20	2

**Table - 2:** NIHSS improvement at discharge.

NIHSS	No of patients
1-3 points	13 (32%)
4-7points	20 (49%)
>8 points	4 (10%)
<b>deteriorated</b>	<b>4 (10%)</b>

**Table - 3:** mRS scores in follow up after 3 months.

MRS	Alteplase	Tenecteplase	No of patients (38)
0-1	12	3	15
2	7	2	9
3	4	4	8
4	4	1	5
5	0	0	0
6	0	1	1

## Discussion

Thrombolysis for ischemic stroke provides benefit in terms of improved functional outcomes. Our study was conducted in a tertiary care hospital from Hyderabad.

We Included 41 patients in a one year period of study. Majority of the patients were given alteplase, few were given tenecteplase (both were given free of cost). Mean improvement in NIHSS was 3.34 points. mRS improvement was little higher in alteplase group. Symptomatic ICH was there in 2 patients. 1 patient died due to symptomatic ICH. Our rates of symptomatic ICH were similar to NINDS and ECAS trials. Tenecteplase was given at 0.25 mg/kg which was similar to NORTEST trial [8]. NIHSS at

admission was the predictor of good outcome despite of early reach to the hospital. Door to needle time of less than 1hr was there in >50% of patients which was higher than in other studies. CTA/MRA/DWI was not performed due to lack of 24/7 availability.

### Conclusion

Our study concluded that thrombolysis for ischemic stroke provides early functional ability and decreased morbidity without any significant risk of bleeding.

### References

1. NINDS The National Institute of Neurological Disorders and Stroke rt-PA Stroke Study Group. Tissue plasminogen activator for acute ischemic stroke. *N Engl J Med.*, 1995; 333: 1581-7.
2. The NINDS t-PA Stroke Study Group. Generalized efficacy of t-PA for acute stroke: Subgroup analysis of the NINDS t-PA Stroke Trial. *Stroke*, 1997; 28: 2119-25.
3. Hacke W, Donnan G, Fieschi C, Kaste M, vonKummer R, Broderick JP, et al. Association of outcome with early stroke treatment: Pooled analysis of ATLANTIS, ECASS and NINDS rt-PA stroke trials. *Lancet*, 2004; 363: 768-74.
4. Campbell BC, Mitchell PJ, Kleinig TJ, et al. Endovascular therapy for ischemic stroke with perfusion-imaging selection. *N Engl J Med.*, 2015; 372: 1009-18.
5. Saver JL, Goyal M, Bonafe A, et al. Stent-retriever thrombectomy after intravenous t-PA vs. t-PA alone in stroke. *N Engl J Med.*, 2015; 372: 2285-95.
6. Goyal M, Demchuk AM, Menon BK, et al. Randomized assessment of rapid endovascular treatment of ischemic stroke. *N Engl J Med.*, 2015; 372: 1019-30.
7. Tanswell P, Modi N, Combs D, Danays T. Pharmacokinetics and pharmacodynamics of tenecteplase in fibrinolytic therapy of acute myocardial infarction. *Clin Pharmacokinet.*, 2002; 41: 1229-45.
8. Nicola Logallo, Vojtech Novotny, Jörg Assmus. Tenecteplase versus alteplase for management of acute ischaemic stroke (NOR-TEST): a phase 3, randomised, open-label, blinded endpoint trial. *The Lancet Neurology*, 2017; 16(10): 781-788.