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Increase in Video Evaluations but Not Complications Over Time in a Large Stroke Network

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Background/Objectives

- Telestroke technology allows evaluation of stroke patients remotely¹.
- We sought to determine if there was any change in the standard of care and evaluation of stroke patients over time and whether there were differences in discharge status or complication rates between those who were evaluated using telestroke technology and those who were not.

Methods

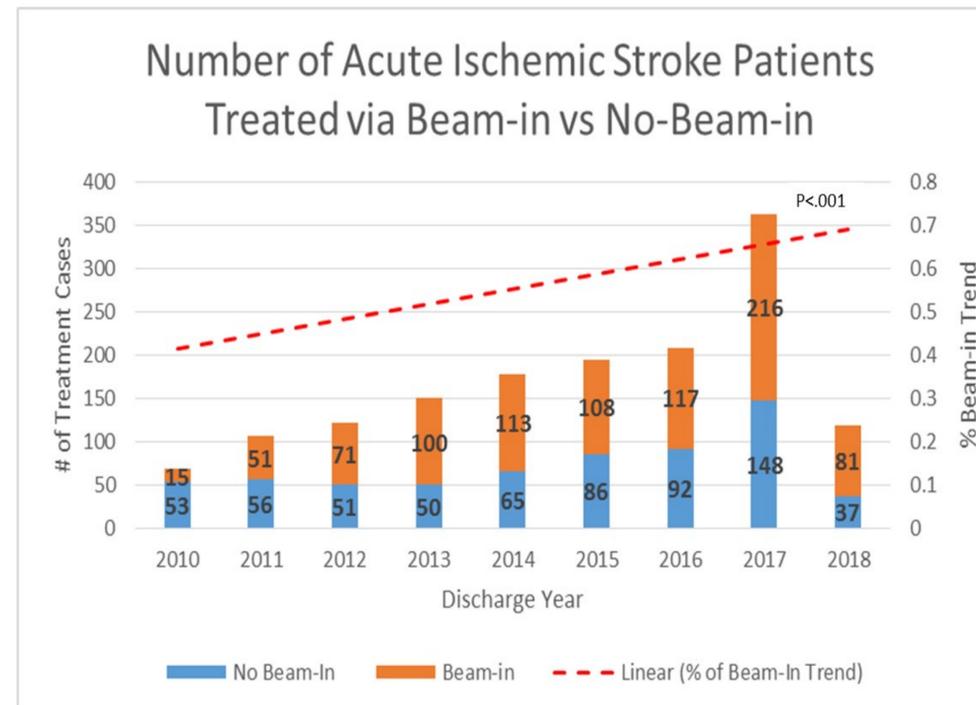
- Data from April 2010 to May 2018 from a large stroke network were used.
- Acute ischemic stroke patients who presented to the emergency departments (ED) with last-known-well-to-door less than 4.5 hours and were treated with IV-alteplase were included.
- The number of facilities ranged from 7 in 2010 to 18 in 2017.
- Primary outcomes included the number and percentage of cases that were treated using video evaluation (Beam-In) versus conventional care (no Beam-In) over time, as well as discharge status and complications, which included symptomatic intracranial hemorrhage, life threatening systemic hemorrhage or other serious complications.
- Chi-squared or Linear By Linear Association were used to compare categorical variables.

References

1. Weschler, L.R., Demaerschalk, B.M. (2016). Telemedicine quality and outcomes in stroke: A scientific statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 48, e3-e25.

Results

- A total of 1,510 patients were treated from 2010 to 2018, 57.7 % (n=872) via Beam-In and 42.3% (n=638) with conventional care.
- The number of Beam-Ins increased over time, and there was a significant increase in the percentage of patients treated via Beam-Ins (p<.001) (Figure).
- For patients treated via Beam-In, fewer discharged home (38.0% vs 50.4%), more transferred to acute care facilities (37.6% vs 14.0%) and fewer discharged to hospice or expired (5.9% vs 12.7%) compared to those treated via conventional care (p<.001) (Table).
- There was no significant difference in percentage of symptomatic intracranial hemorrhage, life threatening systemic hemorrhage or other serious complications (Table).



Outcomes of Patients Treated Via Beam-in Versus Conventional Care

Outcomes	Beam-In	No Beam-In	P-Value
Discharge Status (n=1,466), % (n)			
Home	38.0 (313)	50.4 (321)	<.001
Acute Care Facility	37.6 (318)	14.0 (87)	
IRF	8.6 (73)	9.7 (60)	
SNF	8.8 (74)	12.0 (75)	
Hospice/Expired	5.9 (50)	12.7 (79)	
Other	1.1 (9)	1.1% (7)	
Any Complications (n=1,171), % (n)	3.9 (21)	3.7 (23)	0.836

Authors have nothing to disclose.

Conclusions

Stroke care has evolved from traditional bedside care to more video evaluations in patients who received alteplase without increase in complications or discharges to hospice or in-hospital mortality.