

Learning Objectives

- 1. Understand the time points involved in direct versus transfer of patients with emergent large vessel occlusion to a Comprehensive Stroke Center.
- 2. Learn about factors involved in transport of patients for thrombectomy.

Introduction

With the advent of stroke systems of care and mechanical thrombectomy, appropriate and timely triage and transport have become vital topics. We evaluated transport patterns for stroke patients, analyzing differences in treatment timing related to aspects of transport to our Comprehensive Stroke Center (CSC).

Methods

All patients who underwent thrombectomy for stroke between 07/2011 and 03/2017 at our institution were reviewed. Demographics, comorbidities, time intervals, NIHSS scores, and inpatient outcome were evaluated. Multivariate analyses were performed; p-value 0.05 was significant.

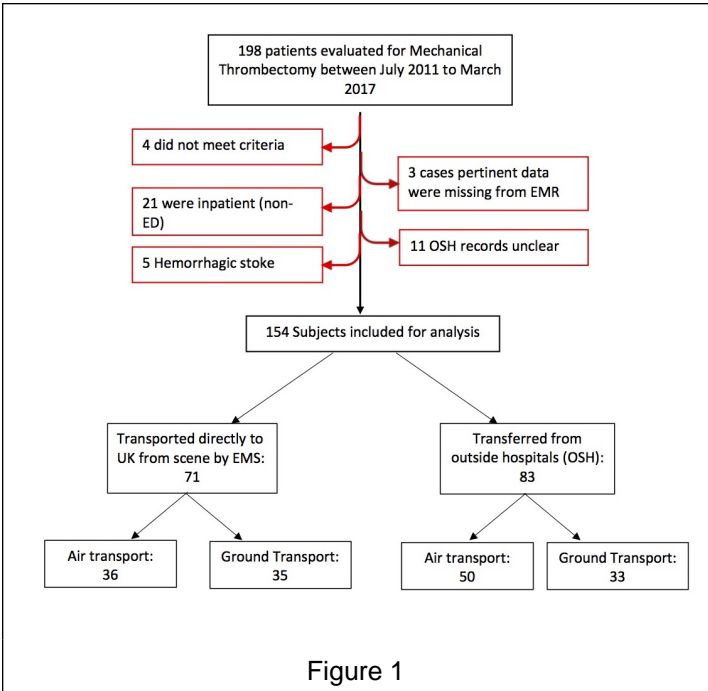


Figure 1

Results

154 patients met criteria, Table 1 includes relevant demographic information. Figure 2 shows the mean time intervals for patients brought directly to the CSC vs. inter-hospital transfers. We sorted counties into geographical regions. About 74% of all our patients came from central and southeastern counties, we evaluated the difference in mean time between Direct to CSC vs Inter-hospital transfer patients by region (Table 2). We also compared the difference in amount of time it took patients to finally reach our CSC from individual counties (Figure3).

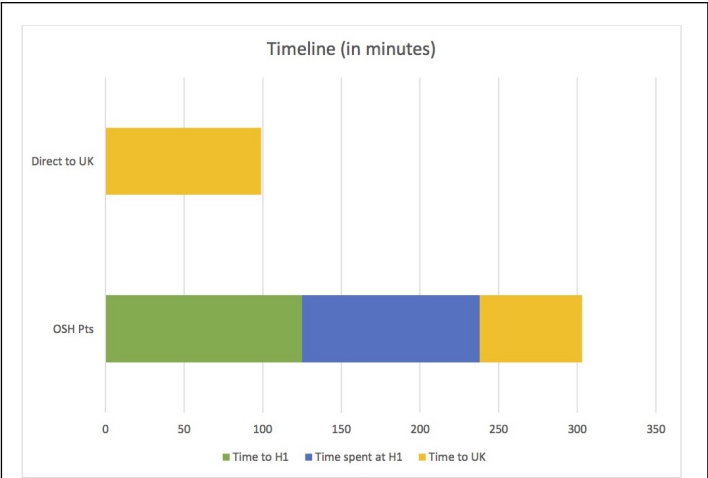


Figure 2

Age (n=154)			
<i>Mean ±SD, years</i>			
20-40 years, n (%)	11 (7%)	62.79 ±14.69	
41-60 years, n (%)	56 (36%)		
61-80 years, n (%)	72 (47%)		
81-95 years, n (%)	15 (10%)		
Gender (n=154)			
Male, n (%)	82 (53%)		
Female, n (%)	72 (47%)		
Body Mass Index (n=152)			
<i>Mean ±SD</i>			
Comorbidities (n=154)			
Hyperlipidemia, n (%)	71 (46%)	29.62 ±6.82	
Hypertension, n (%)	127 (82%)		
History of Stroke, n (%)	26 (17%)		
Type 2 Diabetes, n (%)	39 (25%)		
Heart Disease, n (%)	66 (43%)		
Tobacco Use, n (%)	58 (38%)		
Alcohol Abuse, n (%)	11 (7%)		

Table 1

	Direct to CSC (n)	Inter-hospital transfer(n)	P Value	Mean Difference (95% CI)
Mean time	99.2 (68)	301.8 (76)	<0.0001	202.6 (155.2 - 250.1)
Central counties time	86.2 (47)	327.5 (24)	<0.0001	241.4 (171.5 – 311.3)
Southeastern counties time	117.6 (9)	327.5 (26)	0.0011	209.9 (329.7-90.1)

Total Time between last known normal and arrival at UK (in minutes).

Table 2

Conclusions

Based on our analysis, there is a significant difference in time to treatment of patients from the same region that came directly to a CSC from scene vs. those that went to a outside hospital first. The direct to CSC times were maintained below 100 minutes on average, regardless of distance from CSC. This shows that the distance between patients and a CSC is minimally problematic compared to the delays related to transfers and clinical decision-making. Thus, further research and education is needed to improve stroke awareness and first-responder triage.

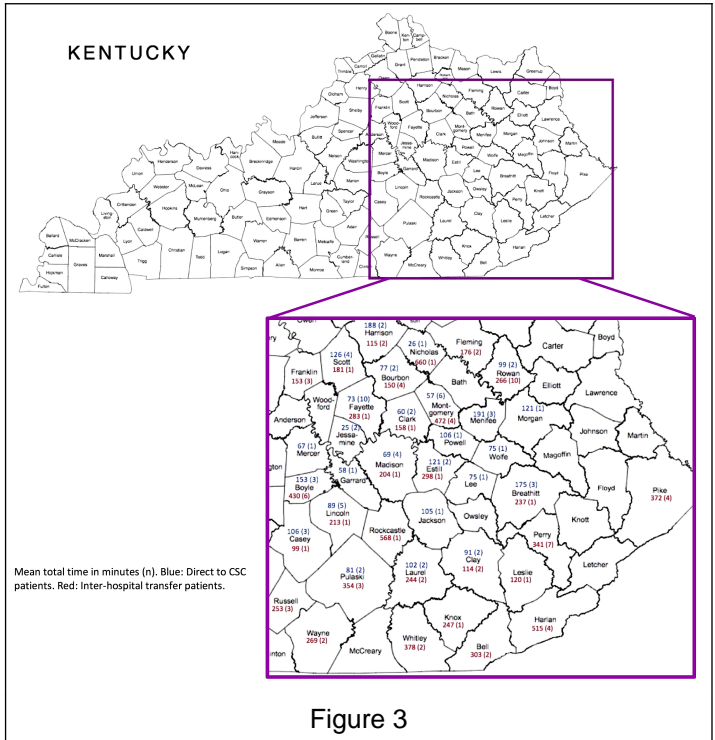


Figure 3