

Does Age Play a Role in Providing Stroke Care to Ischemic Stroke Patients via Telestroke?

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Results

- Consultations on ischemic strokes were provided to 857 patients across the network.
- 323 ischemic consultations were for partner sites.
- The distribution of age groups in the network was: 6.2% for <=45, 55.7% for 46-79 and 38.2% for >=80 (fig.1).
- The distribution of age groups in the partner sites was: 7.7% for <=45, 59.1% for 46-79 and 33.1% for >=80 (fig 1).
- The proportion of beam-ins was 21.6% (n=185) across the network and 39.0% (n=126) for partner sites.
- No difference in beam-ins among age groups within the network (20.8% for <=45, 23.7% for 46-79, 18.7% for >=80) (p=.11), or at partner sites (28.0%, 39.8%, 40.2%) (p=.50), respectively.
- Mean NIHSS scores were significantly different for both network and partner sites with the largest difference in the >= 80 age group (Table 1).
- No difference in treatment rate across the network among the three age groups, 17.0% (n=9), 21.6% (n=102) and 22.3% (n=72), youngest to oldest.
- No difference in treatment rate for age groups at partner sites, 16.0% (n=4), 23.1% (n=23) and 31.1% (n=32) (p=.18), youngest to oldest.
- Percentage of patients transferred to a tertiary care center was significantly higher for the two youngest groups, 45.8% (n=11), 43.9% (n=79) compared to the oldest group, 23.5% (n=23) (p= 0.002), regardless of treatment (Fig. 2).

Figure 1: Percentage of Ischemic Consults by Age for Network and Partner Telestroke Sites

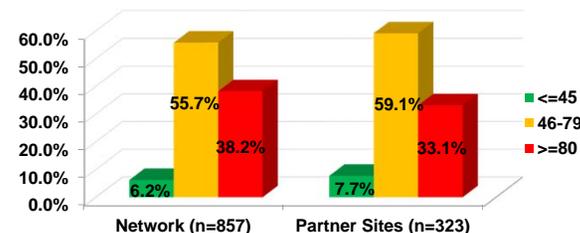
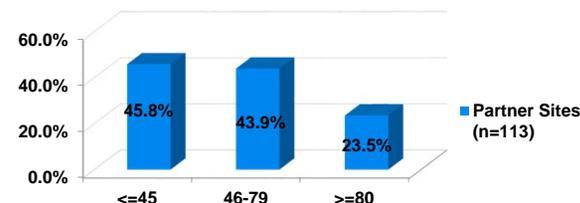


Figure 2: Percentage of Transfers by Age for Partner Telestroke Sites



Background of Study

It is known that thrombolytic treatment rate is higher in young ischemic patients compared to older aged patients. However, no such data is available for ischemic patients treated via telestroke. Since telestroke is becoming a very important tool to provide care to ischemic patients in remote areas, we wanted to examine whether age played a role in the care delivered to these patients.

Methods

- A retrospective data review was conducted on ischemic stroke patients discharged from telestroke network hospitals from December 2010 to December 2012, with a consult from a neurologist (via phone or beam-in using a robot).
- The network consists of 2 tertiary care centers (hub) and 14 partner hospital sites.
- The following data points were gathered: Age (<=45, 46-79, >=80 years), NIHSS on presentation, thrombolytic treatment with or without intervention, beam-ins, and for partner hospitals, transfer status to a hub.
- We performed chi-square analyses and ANOVA to determine statistically significant differences of treatment, beam-in rate, transfer rate and mean NIHSS scores among age groups for both network and partner hospitals.

Table 1: Patient Care Aspects Among Age Groups For Network and Partner Sites

	Network				Partner Sites			
	<=45	46-79	>=80	p-value	<=45	46-79	>=80	p-value
Beam-ins Among Consults (%n)	20.8% (11)	23.7% (113)	18.7% (61)	p=.23	28.0% (7)	39.8% (76)	40.2% (43)	p=.50
Thrombolytic Treatment Among Beam-ins (%n)	17.0% (9)	21.6% (102)	22.3% (72)	p=.68	16.0% (4)	23.1% (43)	31.3% (32)	p=.18
Admit NIHSS Score Among Consults (mean, SD)	4.68 (5.0)	6.35 (6.9)	9.55 (8.2)	p<.000	3.7 (3.0)	6.0 (6.2)	11.3 (9.1)	p<.000
Admit NIHSS Score Among Beam-ins (mean, SD)	6.0 (5.1)	7.8 (6.9)	10.9 (7.9)	p=.02	5.2 (3.3)	6.8 (6.1)	12.4 (8.2)	p<.000
Transfers Among Ischemic Consults (%n)	n/a	n/a	n/a	n/a	45.8% (11)	43.9% (79)	23.5% (23)	p=.002**

**significant differences between 46-79 and >=80; <=45 and >=80

Conclusions

- While treatment rates were high, at least >16% among all groups, they were highest in the oldest age group (>=80); however they were not significantly different among the 3 age groups treated via telestroke.
- Although strokes were more severe in older patients, transfer rate to hub was highest among young stroke patients.
- High treatment rates in all age groups via telestroke proves it to be a very important tool in providing the highest level of care to acute stroke patients in rural and critical access hospitals.

