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Charles Morse

Daniel Moylan

Daniel Joffe

Michael Knapp

Ahmad Sweid

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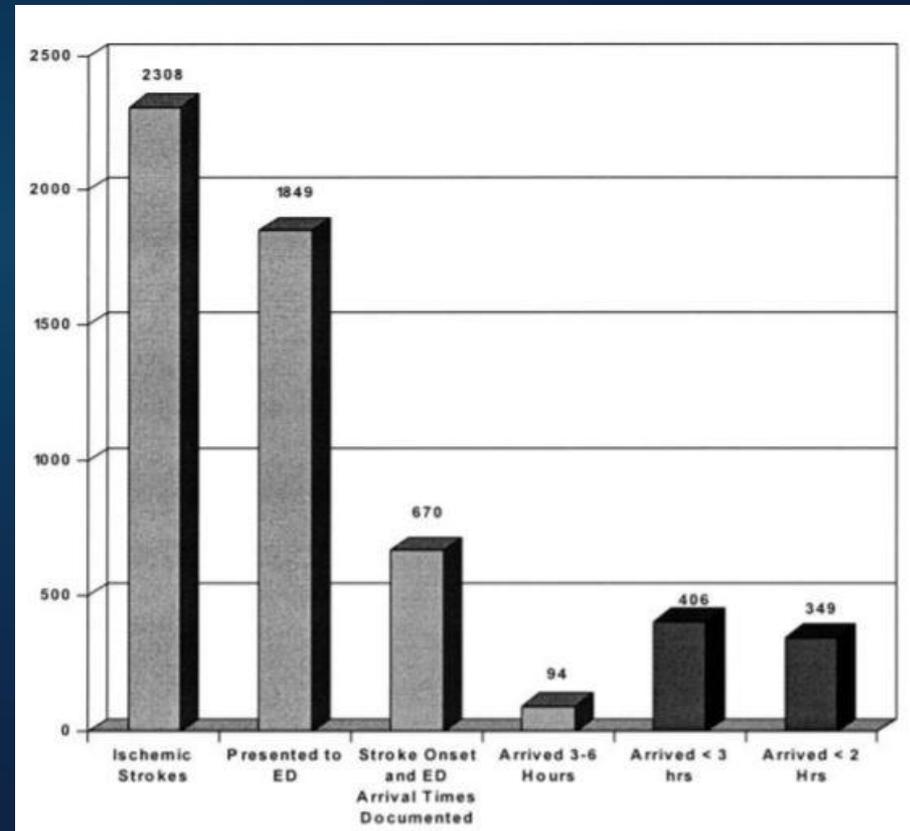
Evaluating the Effect of Telestroke Intervention on Patient Treatment and Outcomes

Charles Morse, Daniel Moylan**, Daniel Joffe**, Michael Knapp, and Ahmad Sweid*

(*) indicates primary project advisor

(**) indicates another student who is declaring the same project as primary for SI

- Acute ischemic strokes (AIS) are a prominent cause of death ^{1, 2, 3}
- Proximity to primary stroke center is vital ^{1, 3, 4}
- Telemedical intervention can overcome this barrier ^{4, 5, 6, 7}



AIS patient's presentation to the ED. *Adapted from Kleindorfer, D., et al. (2004).*

- Previous studies have shown adherence to accepted stroke treatment guidelines with telestroke ^{8, 9, 10, 11}
- Few studies have:
 - Used extensive patient cohorts ^{8, 9, 10, 11}
 - Longitudinally tracked patients throughout entire hospital stay



Research Question & Hypothesis

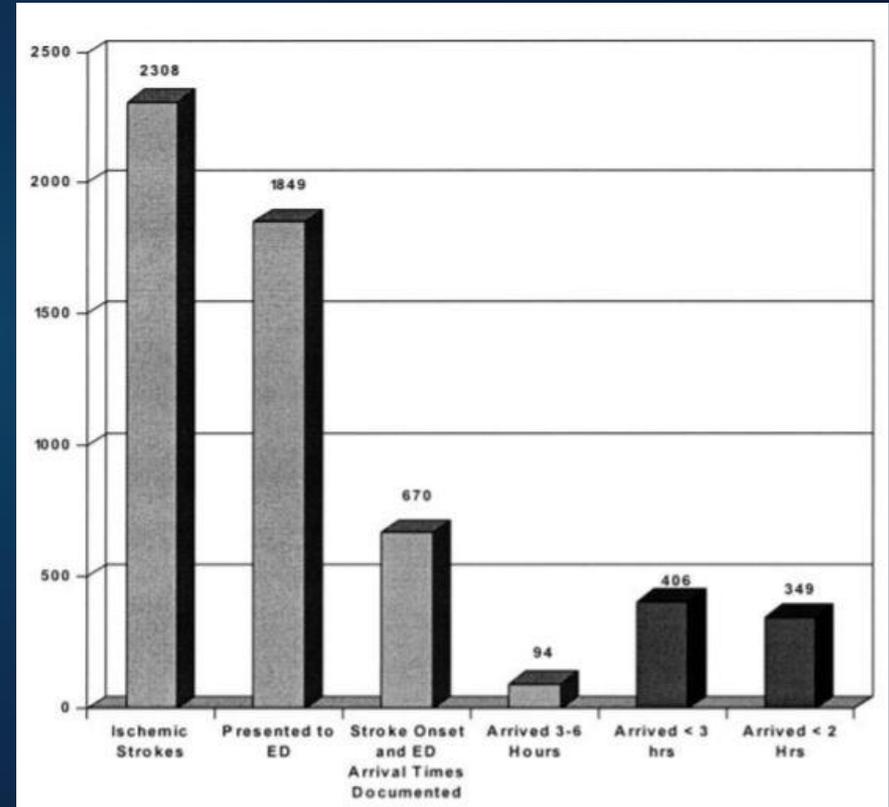
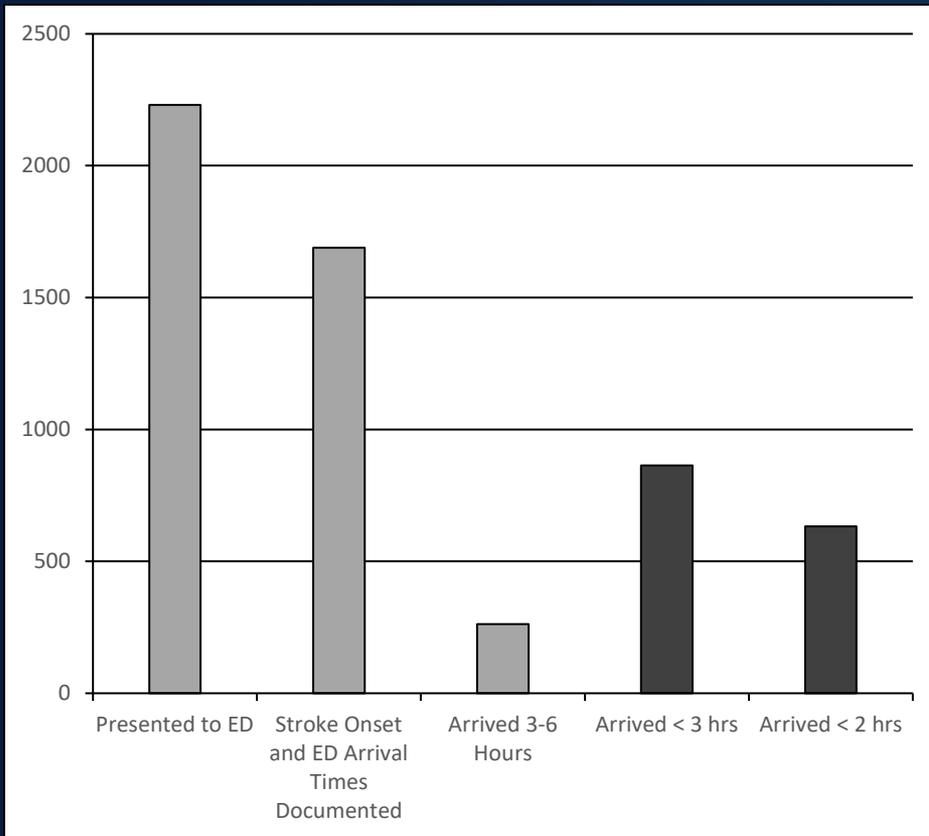
- Research Question
 - How does telestroke intervention affect the treatment and outcomes of patients who are not within proximity to a primary stroke center?
- Hypothesis
 - Through telestroke intervention, patients will receive treatment more rapidly and therefore have reduced mortality rates and neurological sequelae as a result of AIS.

- Study is a retrospective chart review of a database for subjects who received telestroke consultation from 2015-2019
- Cohort size of 9,694 patients
- Independent Variable: Utilization of telestroke intervention
- Comparison Group: Standard of care
- Dependent Variables: Time of t-PA administration, LOS, Complications, Mortality, NIHSS

Approach & Results

- Analysis
 - Multivariable logistic regression to control for confounding variables
 - Utilization of Student's T-test to assess significance of data
- Findings
 - Average onset to consult time: 227.13 minutes (within 4.5 hours)
 - 195 (2.1%) patients experienced a major complication
 - 155 (1.7%) patients expired despite treatment

Approach & Results



AIS patient's presentation to the ED. Adapted from Kleindorfer, D., et al. (2004).

Conclusions

- Confirmation that quicker access to consultation results in more positive outcomes
- Similar tPA usage rates to other studies ^{3, 4, 5}
 - Far exceed national average
- This study will push the field towards more widespread use of telemedicine

Future Directions

- Research
 - Continued analysis of data pool
 - Drafting of manuscript for publication
- Implementation
 - Insight into use of telemedicine for other rapid onset conditions
 - Survey caretakers or survivors about experience

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