Implementation of an Early Mobilization Protocol in Acute Ischemic Stroke Patients Following Thrombolysis

Allison Frazure [1] • Megan Polly [2] • Katie Reckner [3] • Margie Campbell, RN [4] • Jessica Lee, MD [5]

[1]College of Medicine, University of Kentucky • [2]Occupational Therapy, University of Kentucky • [3]Physical Therapy, University of Kentucky • [4]UK HealthCare Neurosciences, UK hospital - Neuroscience • [5]Neurology, University of Kentucky

Abstracts will be considered for both poster and platform presentations

Stroke/Neurovascular

Background: There are approximately 795,000 new and recurrent cases of stroke in the United States each year. Intravenous recombinant tissue plasminogen activator (IV rt-tPA) is considered standard of care treatment for patients presenting with acute ischemic stroke (AIS) symptoms within 4.5 hours. There is limited data regarding the safety of early mobilization of patients with acute ischemic stroke after having received IV rt-tPA. Despite the short half-life of IV rt-tPA (~5 minutes), there remains concern regarding the safety of early mobilization. There is substantial variability regarding mobilization of patients post-tpa among US hospitals, which may delay time to evaluation by physical and occupational therapy (PT/OT). As part of a quality improvement project, we implemented a change in the timing of mobilization of stroke patients post-thrombolysis. This study aims to compare the following between two groups, prior to and following the implementation of a new mobility protocol: the Barthel index (BI) as an outcome measure of function at time of initial evaluation for patients, initial therapy recommendations for discharge compared to final discharge disposition, and impacts on length of stay (LOS).
Methods: This is a retrospective case-control study, conducted as part of a quality improvement project, including all ischemic stroke patients admitted to the University of Kentucky Chandler Medical Center stroke service from November 2017 to July 2018, who received IV rt-tPA. Prior to April 2, 2018, the standard practice at UKMC was to maintain patients on bedrest for 24 hours post-tPA. On April 2, 2018, a new mobility protocol was established based on current available evidence to decrease bedrest time following IV rt-tPA to 1, 6, or 8 hours, dependent on the patient's NIHSS score, presence of severe aphasia, treatment by endovascular procedures, and clinical stability. Group 1 is comprised of patients who admitted prior to mobility protocol changes. Group 2 is comprised of patients admitted following mobility protocol changes.
Results: Mean initial BI for Group 1 was 59.8 □ 46.3 (n=128) and 56.7 + 32.6 for Group 2 (n=85; p= 0.71). The mean time from PT/OT order to assessment in Group 1 was 35 hours 23 minutes and for Group 2, 18 hours 19 minutes ($p<0.0003$). In Group 1, 68% (n=97) of patients' initial recommendations by PT/OT matched the discharge disposition. Less than 1% (n=13) of patients were discharged to lower level of care than initially recommended. In Group 2, 70.5% (n=62) of patients' initial recommendations matched the discharge disposition, and 15.9% (n=14) of patients improved and were discharged to a higher level of rehabilitation than initially recommended. For Group 1 the average LOS was 6 days. With delays removed (PT/OT unable to assess due to intubation/sedation, n=101), the average LOS was 5 days. Following implementation of early mobility protocols in Group 2 (n=81 treated with IV rt-PA), the average LOS was 4.42 days. With delays removed, the average LOS was 3.66 days. Four patients in Group 2 had clinical declines unrelated to early mobilization.
Conclusions: Based on our data, there does not appear to be a decline in discharge outcomes among patients with early mobilization following IV rt-tPA administration. An earlier mobilization protocol based on NIHSS and clinical stability is likely safe and may lead to earlier disposition.