B.4

Stroke care and neurological emergency response simulation (SCaNERS): high-fidelity acute stroke simulation and its impact on knowledge retention

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Background: Stroke simulation-based training has been associated with improved stroke quality metrics. The purpose of this study was to assess whether high-fidelity acute stroke simulation participation led to better knowledge retention one month post simulation in off-service residents. Methods: Off-service residents were provided with non-mandatory pre-simulation pre-reading on stroke. Immediately before stroke simulation, they completed a questionnaire to test their knowledge on a set of 8 questions related to stroke. Immediately post-stroke simulation, they were provided with a debrief including teaching on stroke. After the debrief and one month later, they completed the same questionnaire again. Results: There were a total of 16 off-service resident participants. Wilcoxon signed ranks test was performed. There was a significant difference between pre-simulation and immediate post-simulation scores on the knowledge retention questionnaire ($p = 0.008$). There was a significant difference between pre-simulation and one-month post-simulation on the knowledge retention questionnaire ($p = 0.007$). There was no difference between immediate post-simulation and one-month post-simulation on the knowledge retention questionnaire ($p = 0.77$). Conclusions: Participants performed better on the questionnaire after the simulation, and this improved performance was retained at one month. This is the first study to demonstrate delayed knowledge retention in stroke simulation literature.

B.5

Video-based prehospital teletriage for acute stroke: primary results from a regional pilot-study

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Background: Only limited data exist on the potential benefit of prehospital video-based teletriage for patients with acute stroke. Methods: During a 6-month period, all patients from a defined geographical catchment area with a 911 call for acute stroke were screened by the paramedic team on site. Those with known symptom onset of <6h underwent video-based teletriage for transfer to either the closest tertiary (for suspected LVO occlusion) or to the closest secondary stroke centers. Patients referred for thrombectomy by same the secondary stroke centers without teletriage during the same period served as control. Results: Overall, 33 patients were teletriaged and 23 (70%) were bypassed to the tertiary center. Of the latter, 13 (median NIHSS 19) underwent thrombectomy (+/- iv thrombolysis). During the same period, 22 patients (median NIHSS 17) were referred for thrombectomy without teletriage. The median time from 911 to thrombectomy was 129 [IQR 51] min after teletriage, as compared to 196 [74] min in controls ($p=0.015$). The median NIHSS at 24h was 6 in the teletriage group versus 14.5 in controls ($p=0.07$). Conclusions: Video-based prehospital teletriage for acute stroke is feasible, reliably identifies patients without LVO stroke and significantly improves the delay between stroke alert and thrombectomy in eligible LVO stroke patients.

B.6

Long-term risk of subsequent stroke after transient ischemic attack or minor stroke: a systematic review and meta-analysis

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Background: After a transient ischemic attack (TIA) or minor stroke, the long-term risk of subsequent stroke is uncertain. Methods: Electronic databases were searched for observational studies reporting subsequent stroke during a minimum follow-up of 1 year in patients with TIA or minor stroke. Unpublished data on number of stroke events and exact person-time at risk contributed by all patients during discrete time intervals of follow-up were requested from the authors of included studies. This information was used to calculate the incidence of stroke in individual studies, and results across studies were pooled using random-effects meta-analysis. Results: Fifteen independent cohorts involving 129794 patients were included in the analysis. The pooled incidence rate of subsequent stroke per 100 person-years was 6.4 events in the first year and 2.0 events in the second through tenth years, with cumulative incidences of 14% at 5 years and 21% at 10 years. Based on 10 studies with information available on fatal stroke, the pooled case fatality rate of subsequent stroke was 9.5% (95% CI, 5.9 – 13.8). Conclusions: One in five patients is expected to experience a subsequent stroke within 10 years after a TIA or minor stroke, with every tenth patient expected to die from their subsequent stroke.