Academic Year-end Changeover and Stroke Outcomes

Tai Hwan Park, MD,* Donald A. Redelmeier, MD, FRCPC,† Shudong Li, PhD,‡ Jitphapa Pongmoragot, MD,§ and Gustavo Saposnik, MD, MSc, FAHA, FRCPC,§ on behalf of the Investigators of the Registry of the Canadian Stroke network (RCSN) for the Stroke Outcomes Research (SORCan) Working Group[1]

Background: Lower quality of care and poorer outcomes are suspected when new trainees (eg, residents) start in July in teaching hospitals, the so-called "the July effect." We evaluated outcomes and processes of care among patients with an acute ischemic stroke (AIS) admitted in July versus other 11 months of the year. *Methods:* We evaluated AIS patients admitted to 11 tertiary stroke centers in Ontario, Canada between July 1, 2003, and March 31, 2008, identified from the Registry of the Canadian Stroke Network. The main outcomes were death at 30 days and poor functional outcome defined as death at 30 days or a modified Rankin Scale 3-5 at discharge. *Results:* Of 10,319 eligible AIS patients, 882 (8.5%) were admitted in July and 9437 during the remaining months. There was no difference in baseline characteristics or stroke severity between the 2 groups. Patients admitted in July were less likely to receive thrombolysis (12% vs. 16%; odds ratio (OR), .72; 95% confidence interval (CI), .59-.89), dysphagia screening (64% vs. 68%; OR, .86; 95% CI, .74-.99), and stroke unit care (62% vs. 68%; OR, .78; 95% CI, .68-.90). July admission was not associated with either of higher death at 30 days (adjusted OR, .88; 95% CI, .74-1.03) or poor functional outcome (adjusted OR, .92; 95% CI, .74-1.14). Results remained consistent in the sensitivity analysis by including both July and August as part of the "July effect." *Conclusions:* AIS patients admitted to tertiary stroke centers during July had similar outcomes despite slightly less frequent thrombolysis and stroke unit care. **Key Words:** Outcomes—care quality—process measures—thrombolysis—acute ischemic stroke.
© 2015 by National Stroke Association

From the *Department of Neurology, Seoul Medical Center, Seoul, Korea; †Clinical Epidemiology Program, Sunnybrook Health Sciences Centre, Sunnybrook Hospital, Toronto, Ontario, Canada; ‡Institute for Clinical Evaluative Sciences, Toronto, Ontario, Canada; and §Division of Neurology, Department of Medicine, Stroke Outcomes Research Centre, St Michael's Hospital, Toronto, Ontario, Canada.
[1] www.sorcan.ca

Received August 11, 2014; revision received September 5, 2014; accepted September 23, 2014.

The authors have no conflicts of interest or disclosures.

T.H.P. contributed to study concept, design, acquisition of data, and primary writing. J.P. contributed to the acquisition of data. D.A.R. contributed to revision of the article. S.L. contributed to statistical analysis and interpretation. G.S. contributed to study concept, design, interpretation, critical revision of the article for important intellectual content, and had full access to all the data in the study, and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Dr. Gustavo Saposnik is supported by the Distinguished Clinician Scientist Award by Heart and Stroke Foundation of Canada (HSFC) following peer-review competition. This study was supported by the Institute for Clinical Evaluative Sciences (ICES), which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC). The opinions, results and conclusions reported in this paper are those of the authors and are independent from the funding sources. No endorsement by ICES or the MOHLTC is intended or should be inferred.

Address correspondence to Gustavo Saposnik, MD, FAHA, FRCPC, Division of Neurology, Department of Medicine, Stroke Outcome Research Center, St Michael's Hospital, University of Toronto, 55 Queen St E, Toronto, Ontario M5C 1R6, Canada. E-mail: saposnikg@smh.ca.

1052-3057/$ - see front matter
© 2015 by National Stroke Association
http://dx.doi.org/10.1016/j.jstrokecerebrovasdis.2014.09.030

At the beginning of academic year, physicians recently graduated from medical schools begin their training and assume responsibilities for patient care in teaching hospitals. Starting physicians or interns in teaching hospitals, although supervised by attending physician, usually bear the first-line duty for managing patients. Thus, less experienced staff having new roles may influence access to care and contribute to adverse outcomes in patients managed at the beginning of academic year—the so-called "July Effect."[1-3]

Increase of medication errors and in-hospital mortality in July has been reported from teaching hospitals.[4,5] A recent study evaluated mortality in acute myocardial infarction also reported a 20% higher mortality in high risk patients who admitted in July than those who admitted in May.[6] In contrast, other studies observed no association between July admission and intensive care mortality[7,8] or adverse outcome.[9-13]

Stroke is a leading cause of death and disability worldwide,[14] and a medical emergency. Rapid triage and diagnostic/therapeutic decisions are needed in acute stroke care. Management of acute stroke in teaching hospitals may follow standardized protocol,[15] but the treatment of time-sensitive conditions depends on physicians' training and experience. Besides, more than half of the strokes are expected to be managed at teaching hospitals.[16-17] However, limited information is available on the so-called "July effect" in stroke care and outcome.[18]

Our aim was to determine whether acute ischemic stroke (AIS) patients admitted in July had the following: (1) a higher mortality; (2) poorer functional outcomes; and (3) lower utilization of specialized care compared with patients admitted other months of the year.

Methods

Data Sources

We conducted a retrospective cohort study using the data from the Registry of the Canadian Stroke Network (RCSN). The RCSN is a clinical database of more than 40,000 patients diagnosed with an acute stroke or transient ischemic attack. The phase 3 of the RCSN began in July 2003 and involved continuous prospective data on all consecutive patients seen in the emergency department (ED) or admitted to hospital with stroke in participating institutions in the provinces of Ontario (population = 12,160,282 in 2006) and Nova Scotia (population = 913,462 in 2006) Canada.

Hospital readmissions and ED visits were identified through the Canadian Institute for Health Information and the National Ambulatory Care Reporting System, respectively. Demographic data, including date of birth, gender, and date of decease, are provided by the Registered Persons Database.

Participants

We included patients who were 18 years of age or older with a primary diagnosis of an AIS and admitted to the tertiary stroke centers in Ontario (n = 11) between July 1, 2003, and March 31, 2008. Patients admitted to institutions in Ontario only were included in this study because of availability of administrative data linkages.

We excluded patients with missing data on outcome or functional status at discharge (n = 96). Patients with transient ischemic attack were not included in this study as they have different outcomes (eg, risk of death and disability). Patients with hemorrhagic strokes were also not included because they are likely to receive different care pathways and surgical procedures. For individuals with more than 1 ischemic stroke event during the study time frame, only the first event was included.

Exposure

Patients in the exposure group were admitted at the beginning of the academic year (from July 1 to July 31) to acute care institutions participating in the RCSN. The control group consisted of patients admitted in all other months of the study period except July.

Outcome Measures

The 2 main outcomes were death that occurred within 30 days after the stroke admission and poor functional outcome defined as death at 30 days or disability at discharge. Disability was defined as having a modified Rankin Scale (mRS) 3-5. For all included patients, the mRS was abstracted from patient charts according to the neurologic assessment at discharge. We also analyzed 5 additional secondary clinical outcomes, including the following: (1) death at 3 months; (2) institutionalization at discharge; (3) length of hospital stay; (4) hospital readmissions or presentation to the ED within 30 days from discharge (any reason); and (5) hospital readmission within 30 days from discharge due to stroke.

Process and Performance Measures

We selected 10 key process measures as proposed by the Canadian Stroke Quality of Care Study Expert Panel,[19] and the American Heart Association/American College of Cardiologists Quality of Care and Outcomes Research in CVD and Stroke Working Groups.[20]

Specifically, thrombolysis among candidates who met the present criteria for thrombolysis, antithrombotic medication within 48 hours of admission, discharge use of anticoagulation for atrial fibrillation, dysphagia screening, admission to designated stroke units, management by stroke neurologist, discharge use of statins, discharge use of antithrombotics, physiotherapy, and carotid imaging study during hospitalization. We compared these process measures between patients admitted in July with those admitted in other months.

Download English Version:

https://daneshyari.com/en/article/5873228

Download Persian Version:

https://daneshyari.com/article/5873228

Daneshyari.com