

The Impact of COVID-19 on the Incidence and Management of Ischemic Stroke in Eastern Health Hospitals

Objective

To determine whether presentation to hospital with ischemic stroke (IS) had decreased and whether thrombolysis rates had deteriorated during the first six months of COVID-19.

Practice Points

1. Best practice for IS is administration of intravenous thrombolytics (tPA) within 4.5 hours of stroke onset.
2. Before the pandemic in Eastern Health (EH), nearly half of the patients with IS were treated at the Health Sciences Centre (HSC) and the other half at St. Clare's Mercy Hospital (SCM), and the hospitals in Carbonear, Clarenville and Burin.
3. Thrombolysis rate in IS at HSC had improved in recent years, whereas the rates in the other four hospitals were below 10%.

Data (PI: P.B. Parfrey)

Patient level data were obtained from the NL Centre for Health Information (NLCHI) project 340 examining stroke care. Patients who presented to hospital with IS from Apr – Dec (six months) of fiscal year 2020–21 during the COVID-19 pandemic (which started on 16 Mar 2020) were compared to the six years before the pandemic and to 2019–20.

Results

Table 1. Number of Ischemic Strokes and Thrombolysis Rates Before and During COVID-19 by Hospital

Hospital	2014–2020		2019–2020		Q1 + Q2 2020/21	
	N IS	% Thrombolysis	N IS	% Thrombolysis	N IS	% Thrombolysis
HSC	1,469	10.9	286	16.1	131	19.1
SCM	685	8.6	111	9.0	32	6.3
Carbonear	425	8.5	69	8.7	18	5.6
Clarenville	261	8.8	48	4.2	23	0
Burin	176	8.0	20	5.0	12	0

- In the six years 2014–2020, there were, on average, 503 IS/year, with 534 in 2019–20. During the first six months of COVID-19, there were 216 IS, 35 (14%) less than the anticipated numbers using incidence from the last six years and 51 (19%) less than anticipated using incidence from 2019–20.
- During COVID-19, the proportion of IS that presented to the HSC was 61% of the total, whereas before COVID-19, this proportion was 49%.

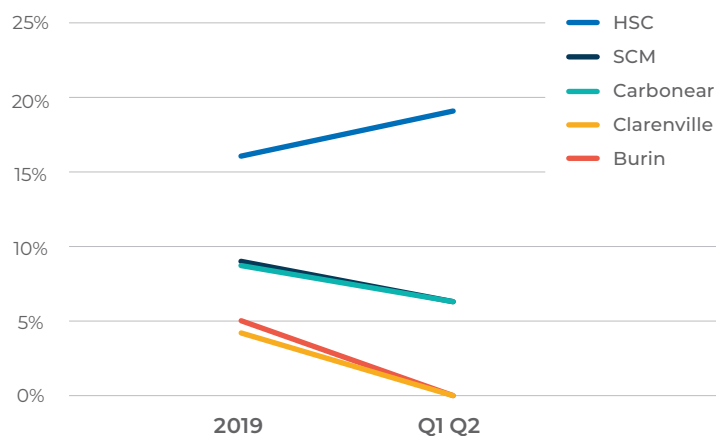


Figure 1. Change in Thrombolysis Rate During COVID-19 Compared to the Year Before COVID-19

- Compared to 2019–20, the thrombolysis rate at HSC increased from 16.1% to 19.1% during COVID-19, whereas at the other four hospitals it decreased.
- In fact, the rate was 3.5% in the four hospitals during COVID-19, with only three of 85 IS patients receiving tPA.

Conclusions

1. During COVID-19, the incidence of IS presenting to the five adult acute care hospitals of EH decreased by 14–19%.
2. tPA use increased during COVID-19 at the HSC but decreased in the other four hospitals. Fortunately, the majority of patients went to HSC. Unfortunately, hospitals with low prior use of tPA had lower quality of care during the pandemic.