

The Impact of COVID-19 on Carotid Artery Testing at St. Clare’s Hospital

Objective

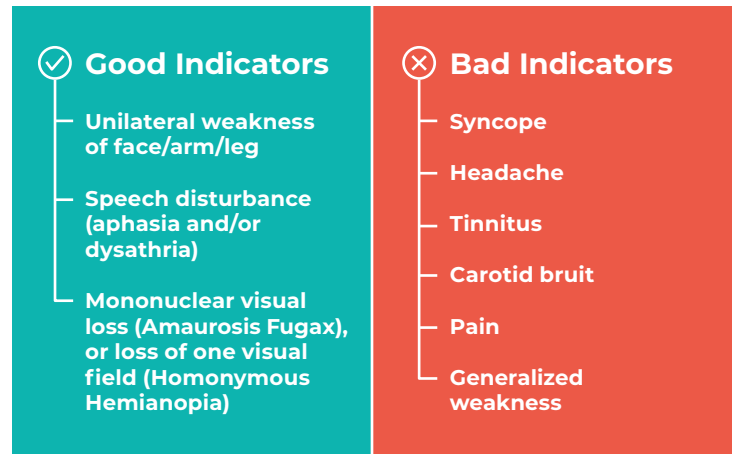
To determine whether the reduction of carotid artery testing during COVID-19 was associated with improved selection of patients for testing and a higher rate of diagnosis of clinically important stenotic disease.

Practice Points

1. People who develop symptoms of a carotid artery territory Transient Ischemic Attack (TIA) require urgent carotid artery imaging to prevent a secondary stroke because detection of stenotic disease can be corrected by revascularization.
2. The use of this test is a concern because nearly half of the patients referred to St. Clare’s Hospital did not have symptoms consistent with a carotid artery territory TIA. Furthermore, patients referred with appropriate symptoms had the same rate of diagnosis of critical/potentially significant arterial disease as those without consistent symptoms, implying a problem with the diagnosis of TIAs.
3. The COVID-19 pandemic started in Eastern Health (EH) on 16 Mar 2020, providing an opportunity to study the effect of decreased access on selection of patients for carotid artery testing. The hypothesis was that during COVID-19, the reduction in testing would be associated with a higher proportion of patients with appropriate symptoms and diagnosed with critical/potentially significant disease.

Data

Data on carotid artery ultrasound were obtained from St. Clare’s Vascular Laboratory for the months Apr – Aug 2020 (5 months) and compared to comparable months in 2019.



Appropriate and inappropriate indicators for carotid artery testing are listed above. Indications were classified as: appropriate based on symptoms of TIA, pre-operative/follow-up, and inappropriate based on symptoms inconsistent with carotid artery territory TIA.

The definition for diagnosis of critical carotid disease was greater than 70% stenosis (an ICA velocity above 230), potentially significant was 50–69% stenosis (126–230 ICA velocity) and the remainder were classified as non-significant.

Results

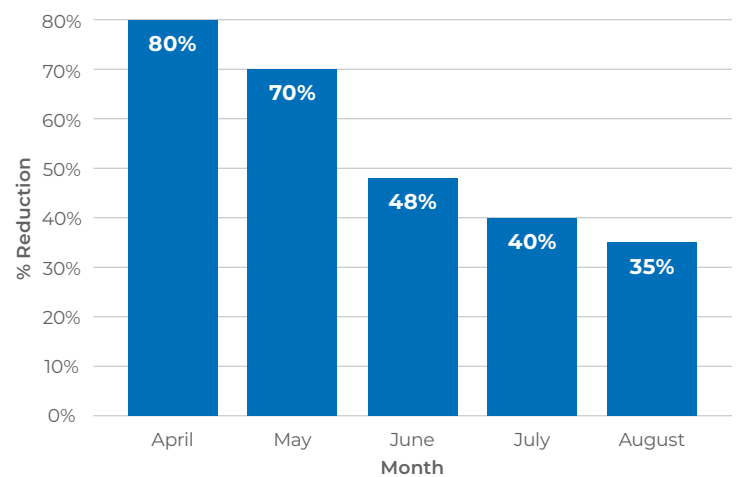


Figure 1. The Reduction in Carotid Artery Testing by Month During COVID-19 Compared to the Same Five Months in 2019

- For the first two months of COVID-19, reduction in testing was greater than 70%, and by month five it was still reduced by 35%.

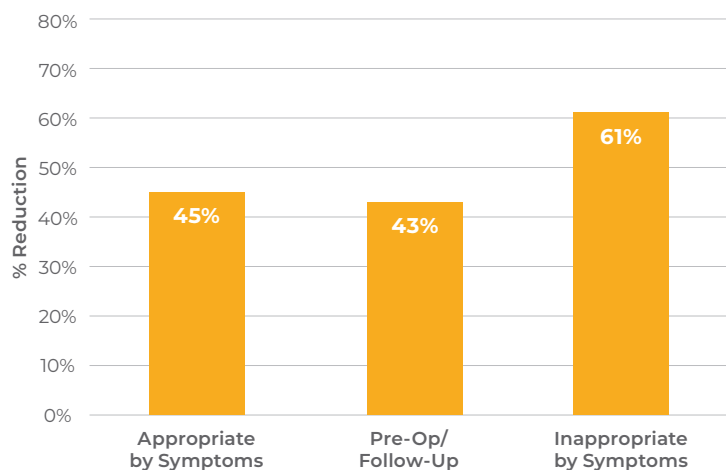


Figure 2. Reduction in Carotid Artery Testing by Indication for the First Five months of COVID-19

- Although the reduction in testing for patients with symptoms inconsistent with a carotid artery TIA was 61%, the reduction in those with appropriate symptoms was 45%.

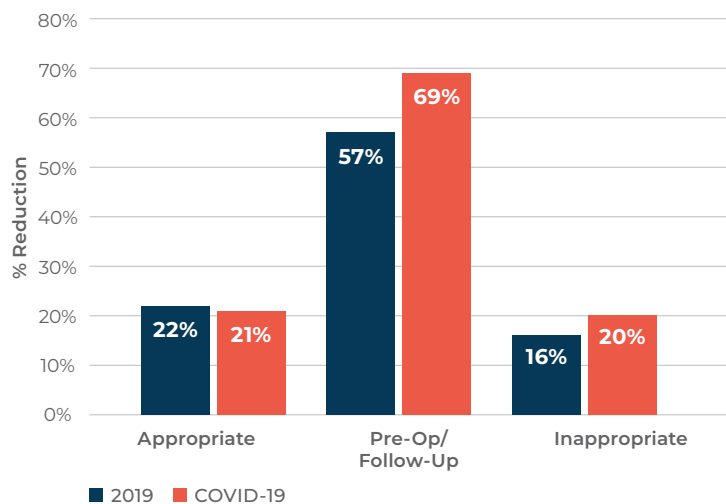


Figure 3. Comparison of Rates of Diagnosis of Critical/Potentially Significant Carotid Disease by Indication for Testing During COVID-19 and in the Same Period of 2019

- There was little indication that the need to select patients improved the diagnosis of critical/potentially significant disease in either those with appropriate or inappropriate indications.

Conclusions

- The 45% reduction in those with appropriate symptoms for a carotid artery TIA implies that either these types of patients when previously referred did not have a TIA or, if they did, doctors were not concerned about secondary stroke prevention.
- The failure to improve the rate of detection of critical/potentially significant disease in those with either inappropriate or appropriate symptoms during a time of rationing implies failure to identify patients at higher risk of having important disease.