



CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

Acute Stroke Management **Seventh Edition, Update 2022**

Box 4C: Imaging Selection Criteria for Endovascular Therapy for Patients Arriving 6-24 Hours After Symptom Onset or Last Known Well Time

*Heran M, Shamy M (Writing Group Chairs)
on behalf of the Canadian Stroke Best Practice Recommendations
Acute Stroke Management Writing Group and in collaboration with the
Canadian Stroke Consortium*

© 2022 Heart and Stroke Foundation of Canada

Box 4C Imaging Selection Criteria for Endovascular Therapy for Patients Arriving 6-24 Hours After Symptom Onset or Last Known Well Time

System Access

1. On-site stroke imaging with 24-hour access, seven days a week, including a CT scanner (i.e., third generation or higher helical scanner) with programming for CTA; and ability to perform multiphase CTA or CTP imaging.
2. Sites using CTP perfusion imaging should use software that provides quantifiable measurements of ischemic core and penumbra.
3. The location of occlusion is defined by CTA performed from aortic arch to the vertex of the head. Inclusion of the aortic structures allows planning and assessment of the technical feasibility of an endovascular approach to the occluded intracranial artery.

Anterior Circulation

1. Presence of an intracranial artery occlusion in the anterior circulation on CTA including occlusion of the terminal internal carotid artery or proximal MCA)
AND
2. Presence of a small to moderate ischemic core on unenhanced CT, usually consistent with an ASPECTS score of ≥ 6 for the anterior circulation
AND (one of the following 3, 4, or 5)
3. Presence of moderate to good pial collateral filling on CTA (ESCAPE Trial criteria, as defined by multiphase CTA or assessment of the raw data set acquired from CTP), or evidence of CTP mismatch.
OR
4. Presence of small to moderate ischemic core on CTP as measured by ischemic core volume < 70 ml, mismatch ratio ≥ 1.8 and mismatch volume ≥ 15 ml (DEFUSE3 trial criteria).
OR
5. Ischemic core volume < 51 mL in patients < 80 years old or ischemic core volume < 31 mL in patients ≥ 80 years old (DAWN trial criteria).

Posterior circulation

1. Patients presenting with an intracranial occlusion of the posterior circulation (e.g., the basilar artery) may be considered for EVT based on expected risks and benefits, after consultation with a physician with stroke expertise and with the treating neurointerventionalist, along with the patient and family, or substitute decision-makers.
 - a. Decisions should be based on expert opinion after considering multiple factors, including initial imaging features including quality, clinical presentation, medical therapies including thrombolysis, health status, delay in expected time of arrival at EVT centre, and patient goals of care.

Note: ASPECTS is one tool to estimate core: A small-to-moderate ischemic core can be defined by ASPECTS of 6 or higher on NCCT or areas of low cerebral blood volume or cerebral blood flow maps on CTP imaging.