Ontario CT/mCTA Protocol

5 series of images, in the following order:

1. Non-contrast CT Head (axial)
2. CTA neck and head 1.25 – 2 mm (axial)
3. 5 mm MIP Axial CTA head (2\textsuperscript{nd} phase of multiphase)
4. 5 mm MIP Axial CTA head (3\textsuperscript{rd} phase of multiphase)
5. 5 mm MIP Coronal CTA neck and head

Total: Approx. 520 images
Protocol Testing

Protocol testing through ENITS

Initial transfer times, before protocol, of 16 mins

Most recent tests with current protocol: 3 mins
Imaging – Next Steps

1. Continued verification of rapid upload times from a wider variety of centres.
2. Education for District Stroke Centres and other sites potentially transferring for EVT
3. Regional approaches to roll-out may be favoured
Endovascular Treatment for Acute Ischemic Stroke
Where Are We Now and Where Do We Want To Go
by
Dr Grant Stotts
Neurologist, Ottawa Hospital
Medical Director, Champlain Regional Stroke Network
July 5, 2016
To Address these Challenges & Plan Implementation

• OSN Endovascular Thrombectomy (EVT) Working Group has been established
  o Co-Chairs: Dr. Grant Stotts and Dr. Timo Krings

• Members include stroke Neurology and Neurointerventional teams, Regional/District Stroke Centre and referring hospital representatives, EMS, MOH EHS, Telestroke, and CritiCall Ontario

• Collaboration with Canadian Stroke Consortium and National HSF Stroke Best Practice Recommendations
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<thead>
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<th>Organization</th>
<th>Role</th>
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<td>Linda Kelloway</td>
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Implementation Planning Working Group

To develop an implementation strategy to:

• Estimate patient volumes at provincial, LHIN, stroke centre and facility levels to inform planning/impact

• Identify facility capacity (focus on physicians and staff expertise and imaging resources)

• Determine role of Provincial Telestroke Program

• Determine impacts to Emergency Medical Services and current Provincial Paramedic Acute Stroke Protocol

• Develop protocols for treatment and transfer

• Identify strategies for knowledge translation

• Evaluate processes/outcomes (with minimum data set)
EVT Centres in Ontario July, 2016
Current EVT Centres

WITH 24/7 COVERAGE
1. London Health Sciences
2. Ottawa Hospital
3. St Michael’s Hospital
4. Sunnybrook Health Centre
5. Toronto Western Hospital
6. Hamilton Health Sciences

WITHOUT 24/7 COVERAGE
1. Thunder Bay Regional Health Centre
2. Trillium Health Partners
3. Windsor Regional Hospital
4. Kingston General – in planning
Transfer Process for EVT

Subgroup:
Drs. Mandzia, Silver, Stotts, Prpic
Linda Kelloway
Desmond Bohn (Critical)
Endovascular thrombectomy after large-vessel ischaemic stroke: a meta-analysis of individual patient data from five randomised trials


Summary
Background In 2015, five randomised trials showed efficacy of endovascular thrombectomy over standard medical care in patients with acute ischaemic stroke caused by occlusion of arteries of the proximal anterior circulation. In this meta-analysis we, the trial investigators, aimed to pool individual patient data from those trials to address remaining questions about whether the therapy is efficacious across the diverse populations included.

HERMES Collaborators
Highly Effective Reperfusion evaluated in Multiple Endovascular Stroke trials (HERMES)
Overall Treatment Effect
NNT = 2.6
MRS outcome by onset to reperfusion

TIME MATTERS

Graph showing the estimated probability of modified Rankin Scale (mRS) outcomes over time from symptom onset to reperfusion.
Patient Transfer Time Verification

OSN currently partnering with Criticall, Ornge and EMS to identify sites within 2 hour transfer window to EVT centres

Clinical emphasis should still involve rapid thrombolytic treatment

Regional analyses will guide decisions to bypass or treat with tPA first at non-EVT sites

Communication is key in the decision process to transfer
  Multiple factors: imaging (infarct, collateral flow), road conditions, patient wishes
Stroke Code Process at Sites Not Bypassed

Stroke treatment effectiveness is time-dependent
Rapid times to thrombolysis remain important

How would an ideal transfer look?

**Door In/Door Out Time**
Can we aim for 45 min?

- 5 mins for initial assessment/lab draw
- 20 mins to scan – avoid need to return for CTA
- 20 mins to review with telestroke/EVT site
Transfer Process Details

A standardized Drip and Ship Protocol is being investigated. Complication rates are low but require need to address anaphylaxis, hypertension and deterioration in level of consciousness.
Regional Approaches

In addition to provincial strategies
Need for regional approaches

Multiple factors mandate that regional systems will need to be developed:

• EMS coverage
• Distance and number of referring sites.
• Stroke team compositions.
Regional EVT Working Groups

Coordination of:
• EMS systems (urban and rural)
• Radiology
• ED communications
• Repatriation agreements
Regional EVT Working Groups

Ontario strategies can be used as a template
CT/CTA protocol can be used by all sites.
EMS prompt card can be adapted locally.

OSN webinars will be archived.

OSN personnel can be contacted for assistance.