



Krembil Neuroscience Program: Neurovascular Care and Stroke

Overview

Based at Toronto Western Hospital, Neurovascular Care is part of the Krembil Neuroscience Centre, the largest combined clinical and research neurological science facility in Canada. Designated as one of the first provincial Regional Stroke Centres, the program provides leadership to the province in best practices for stroke care, research and professional education. Excellence in the management of stroke patients is achieved through highly trained medical staff working in teams that support integration of care from prevention to acute care to rehabilitation and community re-engagement through collaborative relationships with other health care organizations in Toronto.

This centre is also site for several research programs including the Toronto Brain Vascular Malformation Study Group, the Registry of the Canadian Stroke Network, and the UHN Stroke Clinic Trials Group. Our stroke team also participates in the Telestroke program, using two-way video conference technology to provide consultation to two northern hospitals through the Ontario Telehealth Network.

Stroke results from the sudden interruption of blood flow to the brain (ischemia), or the rupture of blood vessels in the brain (hemorrhage). In both cases, neurons in the affected area(s) die, causing damage to the brain. Depending on the region of the brain and the number of neurons affected, a stroke could cause a number of problems from difficulty communicating, to changes in personality and behaviour.

UHN Milestones/Innovations

- Established a multidisciplinary stroke unit/expert team in 1994
- Secondary Stroke Prevention Clinic services launched in 1998
- Ontario Stroke System, MOHLTC Regional Stroke Centre and Secondary Stroke Prevention Clinic designations in 2001
- Major contributor to many of the seminal large multicentre stroke trials that have shaped stroke care including NASCET, PROACT, VISP, AbESTT, CASES, ISAT, FASTER, PRoFESS, CREST, CLOSURE I
- One of largest research databases of AVM and Aneurysm Patients
- The largest Canadian training centre for interventional neuroradiology
- Development of an innovative therapy to counteract brain damage caused by stroke. (2002)

Scope of Work

- *Acute Stroke Program*
 - Emergency care within the first few hours of a stroke
 - Rapid-diagnostic imaging and treatment
 - Coordinated team and case managed care
 - Opportunities to participate in research
- *Stroke Prevention Clinic*
 - Referral for evaluation
 - Risk reduction of stroke or transient ischemic attack (TIA)
 - Provision of health and well-being programs
 - Opportunities to participate in research

- *Arterial Venous Malformation and Aneurysm Clinics*
 - Assessment by an expert team of neurosurgeons, neuroradiologists and radiation specialists
 - Surgical and non-surgical interventions
- *Interventional Neuroradiology Program*
 - Treatment for tumor, arteriovenous malformation (AVM) and stroke

Integration of Care

Physicians, clinicians and other staff members that make up the Krembil Neuroscience program believe the best patient care involves the integration of modalities. Patients may receive care through consultation from:

- Neurosurgeons
- Neurologists
- Interventional neuroradiologists
- Acute care practitioners
- Stroke nurse clinicians
- Multidisciplinary stroke team (physiotherapists, occupational therapists, speech-language pathologists, dieticians, neuropsychologists, social workers)

<p>Basic science research includes investigations into:</p> <ul style="list-style-type: none"> • Calcium-regulated signaling pathways • Understanding and modulation of the molecular organization of synapses • Anoxic cell damage • Thrombolytic therapy in stroke • Testing neuroprotective strategies in in-vivo models of focal and global cerebral ischemia 	<p>Clinical science research includes investigations into:</p> <ul style="list-style-type: none"> • Clinical trials in drug therapies • Patient registries • Health informatics • Medical education needs and case management needs of patients/families and caregivers
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