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UCalgary researchers with the Calgary Stroke Program make another breakthrough in the treatment of stroke

Study shows a heart attack drug can become the standard treatment for acute ischemic stroke

Calgary, AB – In the largest stroke clinical trial ever run in Canada, researchers have shown Tenecteplase (TNK), a safe, well tolerated drug, commonly used as a clot buster for heart attacks, is an effective treatment for acute ischemic stroke. Led by researchers with the University of Calgary at the Foothills Medical Centre and Sunnybrook Health Sciences Centre, fully affiliated with the University of Toronto, the study included 1600 patients at hospitals throughout Canada.

“It is truly an important finding that I share with my colleagues from coast to coast. Through this collaboration these findings could revolutionize stroke treatment throughout the world. Tenecteplase is known to be an effective clot dissolving drug. It is very easy to administer which makes it a game changer when seconds count to save brain cells.”

Dr. Bijoy Menon, MD, professor at the University of Calgary, neurologist at the Foothills Medical Centre and co-principal investigator on the study.

Based on current guidelines, Alteplase (tPA) is the recommended drug for acute ischemic stroke patients. The challenge is that the drug is more complex to administer. It takes up to an hour and requires an infusion pump that needs to be monitored. The pump can be cumbersome when transporting a patient within a hospital, or to a major stroke center for treatment.

“One of the reasons Tenecteplase is so effective is that it can be administered as a single immediate dose. That’s a big advantage, saving critical time and complication. TNK could potentially be administered wherever the patient is seen first, at a medical centre or small hospital.”

Dr. Rick Swartz, MD, PhD, clinician-researcher at the University of Toronto, co-principal investigator, and stroke neurologist at Sunnybrook Health Sciences Centre.

The [AcT Trial](#) compared TNK to tPA in a randomized trial. The results published in [The Lancet](#) show that TNK worked as well as, if not better than, the current recommended drug, tPA. TNK attaches itself to the clot for a longer period of time than tPA, which means that blood flow is restored faster and for a longer period of time. Along with discovering a better way to treat acute ischemic stroke, the team also established a more cost effective, and efficient way to conduct clinical trials.

The trial engaged patients and their families in study design and completed all enrolments during the pandemic when health systems were under significant stress. The study involved 22 primary and comprehensive stroke

centers across Canada and was supported by the Canadian Institutes of Health Research (CIHR), Alberta Strategy for Patient-Oriented Research (SPOR), Quality Improvement & Clinical Research Alberta Stroke Program (QuICR), Alberta Innovates, Heart & Stroke and the Canadian Stroke Consortium.

Brain and Mental Health strategy

Led by the Hotchkiss Brain Institute, [Brain and Mental Health](#) is one of six strategic research themes guiding the university towards its Eyes High goals.

Bijoy Menon is a professor in the departments of [Clinical Neurosciences](#), [Radiology](#), and [Community Health Sciences](#) at the [Cumming School of Medicine](#) (CSM) and lead, [Neuro Stroke team](#) of the [Hotchkiss Brain Institute](#) at the CSM. He is a neurologist at the Foothills Medical Centre, Alberta Health Services.

Richard Swartz is an associate professor in the Department of Medicine at the University of Toronto. He is a stroke neurologist at Sunnybrook Health Science Centre and medical director, NE-GTA Regional Stroke Network; director, University of Toronto Stroke Program and co-lead of the Ontario Neurodegenerative Disease Research Initiative (ONDRI) study.

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