

Researchers make a significant breakthrough in the treatment of stroke

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In the largest clinical stroke 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.

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

"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,"

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," says Dr. Rick Swartz, MD, Ph.D., clinician-researcher at the University of Toronto, co-principal investigator, and stroke neurologist at Sunnybrook Health Sciences Centre. "That's a big advantage, saving critical time and complication. TNK could potentially be administered wherever the patient is seen first, at a medical center or small hospital,"

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 enrollments during the pandemic when health systems were under significant stress. The study involved 22 primary and comprehensive stroke centers across Canada.

More information: Bijoy K Menon et al, Intravenous tenecteplase compared with alteplase for acute ischaemic stroke in Canada (AcT): a pragmatic, multicentre, open-label, registry-linked, randomised, controlled, non-inferiority trial, *The Lancet* (2022). [DOI: 10.1016/S0140-6736\(22\)01054-6](https://doi.org/10.1016/S0140-6736(22)01054-6)

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