

Clinical trial reveals risky clot busters do not benefit most patients suffering from deep vein thrombosis

December 11 2017

A clinical trial almost 10 years in the making has revealed that risky, but powerful, clot busting drugs and medical devices do not improve outcomes for patients experiencing deep vein thrombosis (DVT), nor do they prevent the development of post-thrombotic syndrome (PTS) when compared with conventional blood thinning medications. The results of the Acute Venous Thrombosis: Thrombus Removal with Adjunctive Catheter-Directed Thrombolysis (ATTRACT) study are published in the *New England Journal of Medicine*.

Approximately 50,000 Canadians are diagnosed every year with DVT, and up to 40% of these [patients](#) will go on to develop PTS, a complication that can leave them with chronic limb pain and swelling that can impede their daily activities. It had been hypothesized that the inability of blood thinners to remove the acute blood [clot](#) might be overcome by employing clot busters as an adjuvant therapy.

"We found no particular advantage to employing clot busters and do not believe they should be applied to the majority of patients who present with acute DVT. Moreover, clot busters are associated with a higher risk for dangerous bleeding," said Dr. Susan Kahn of the Centre for Clinical Epidemiology at the Lady Davis Institute of the Jewish General Hospital. She is an internationally recognized expert in the treatment of DVT and Director of the Hospital's Centre of Excellence in Thrombosis and Anticoagulation Care (CETAC). Dr. Kahn, who is also a professor of

medicine at McGill University in the department of Epidemiology, Biostatistics and Occupational Health, chaired the Clinical Outcomes Committee for the ATTRACT Trial and is a member of the trial's steering committee.

The ATTRACT study – a randomized controlled trial primarily funded by the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health (NIH) – was designed to determine whether performing the procedure as part of initial treatment for patients when they are first diagnosed with DVT would reduce the number of people who later develop the syndrome. It was initiated in 2008, following a call to action on DVT and, specifically, for research into the benefits and risks of removing clots issued by the then-Acting Surgeon General of the United States, Dr. Steven K. Galson.

The study involved 692 patients at 56 clinical sites, randomly assigned to receive blood thinners alone or blood thinners and the procedure. Each patient was followed for two years. Complications developed in 157 of 336 (47%) of people who underwent the procedure and 171 of 355 (48%) of people who did not, a difference that is not statistically significant. The procedure did reduce the severity of PTS, easing patients' long-term symptoms. About 24% of people on [blood](#) thinners alone experienced moderate to severe pain and swelling, but only 18% of people who were treated with [blood thinners](#) and clot busters did so.

The researchers noted a worrisome increase in the number of people who developed major bleeding after undergoing the procedure. While the numbers were small – one patient (0.3%) on standard treatment experienced a bleed, compared with six (1.7%) among those who received [clot busting drugs](#) – the potential for catastrophic bleeding is why these drugs are usually reserved for life-threatening emergencies such as heart attacks and strokes. Furthermore, the [procedure](#) is expensive and often requires a hospital stay.

"There is a suggestion that this intervention is effective in reducing more severe cases of PTS, but this calls for further study," said Dr. Kahn.

"The practice at the JGH has been to offer such treatments only in rare cases of very extensive DVT of the leg and, on occasion, of the arm, where the swelling is so significant that we fear the onset of limb gangrene. We are confident that we have been using these therapies properly and will continue with our existing protocols. This study's results also highlight that new approaches to preventing PTS are needed."

More information: Suresh Vedantham et al. Pharmacomechanical Catheter-Directed Thrombolysis for Deep-Vein Thrombosis, *New England Journal of Medicine* (2017). [DOI: 10.1056/NEJMoa1615066](https://doi.org/10.1056/NEJMoa1615066)

Provided by McGill University

Citation: Clinical trial reveals risky clot busters do not benefit most patients suffering from deep vein thrombosis (2017, December 11) retrieved 26 April 2024 from <https://medicalxpress.com/news/2017-12-clinical-trial-reveals-risky-clot.html>

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