

Clot-busters safe for treating moderate pulmonary embolism

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Pulmonary embolism -- the sudden blockage of an artery in the lung -- is estimated to cause over 100,000 deaths each year in the U.S. Although thrombolytics, or "clot-buster" drugs, are currently reserved to treat only the most severe cases of pulmonary embolism, new data suggest that when used at lower doses, these drugs are also safe and effective for more common, moderate cases of pulmonary embolism, according to research presented today at the American College of Cardiology's 61st Annual Scientific Session. The Scientific Session, the premier cardiovascular medical meeting, brings cardiovascular professionals together to further advances in the field.

Researchers found that using half the usual dose of the thrombolytic [drug tissue plasminogen activator](#) (t-PA) not only effectively dissolved clots in patients with moderate [pulmonary embolism](#), but also led to earlier [hospital discharge](#) and reduced the rate of [pulmonary hypertension](#) and recurrent pulmonary embolism without causing bleeding or other major side effects.

Currently, only about 5 percent of pulmonary embolism cases are considered severe enough to be given thrombolytic agents at full dose. While these drugs are effective in dissolving [blood clots](#), they carry a 2 percent to 6 percent risk of causing dangerous bleeding inside the [brain](#). The vast majority of pulmonary embolism cases are considered moderate, and thus are typically treated with anticoagulants (anti-clotting agents). However, even moderate cases can lead to recurring pulmonary embolism, pulmonary [hypertension](#) and other dangerous complications.

"Pulmonary embolism can be more aggressively – and above all, safely – managed with what we call 'safe-dose thrombolysis,'" said Mohsen Sharifi, MD, director of Arizona Cardiovascular Consultants and the study's lead investigator. "Eighty percent, or more, of pulmonary embolism patients would benefit from this treatment."

Other research has investigated the use of thrombolytics for moderate pulmonary embolism, but this is the first study to show that using a lower dose of t-PA and anticoagulants can be safe and effective for such patients. These findings could ultimately change the way doctors handle hundreds of thousands of cases each year.

Pulmonary embolism, a complication of deep vein thrombosis, occurs when a blood clot becomes lodged in a lung artery after traveling there from elsewhere in the body, typically the legs. It can lead to death if left untreated.

Dr. Sharifi said expanding the use of "safe-dose thrombolysis" to more aggressively treat moderate pulmonary embolism could help prevent patients from developing more serious complications later on. He further emphasized the need to lower the dose of anticoagulants given along with t-PA.

"Moderate pulmonary embolism may be the tip of the iceberg," said Dr. Sharifi. "These patients might be doing okay initially, but ultimately, in the subsequent few years, they may develop complications."

The study enrolled 121 patients with moderate pulmonary embolism and gave 61 of them a half-dose of thrombolytic drugs with a modified regimen of anticoagulants. Sixty were given anticoagulants alone. Patients were tracked for 28 months.

In addition to treating severe pulmonary embolism, thrombolysis is

commonly used to dissolve the blood clots that cause heart attacks and strokes.

More information: Dr. Sharifi will present the study "Moderate Pulmonary Embolism Treated with Thrombolysis (MOPETT Study)" on Tuesday, March 27 at 8 a.m. during the Joint ACC/JAMA Late-Breaking Clinical Trials in McCormick Place North: Main Tent.

Provided by American College of Cardiology

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