

Complete angioplasty safe for certain heart attack survivors

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Patients who experience the deadliest form of heart attack—ST segment elevation myocardial infarction (STEMI)—and suffer from substantial narrowing in multiple heart arteries may benefit from receiving angioplasty in constricted arteries not affected by the heart attack, thereby reducing the need for future angioplasty, according to research presented at the American College of Cardiology's 64th Annual Scientific Session.

The study is the largest prospective, controlled trial to evaluate whether patients should receive preventive [angioplasty](#), also known as complete revascularization, after receiving emergency angioplasty in response to a [heart attack](#). A total of 627 STEMI patients in Denmark who survived an initial angioplasty procedure were randomized to receive either standard follow-up care or complete revascularization two days after the emergency procedure.

After an average of 27 months, 17 percent of the patients who received standard care returned for unplanned angioplasty or bypass surgery compared to only 5 percent of the patients who received complete revascularization. Rates of heart attack and death were comparable between the two groups.

Of the patients who returned for unplanned angioplasty, more than 40 percent of patients in both groups were considered urgent revascularizations.

"Our results show that it is safe to do a complete revascularization in this particular patient population," said Thomas Engstr&ostroke;m, M.D., Ph.D., senior consultant at the University of Copenhagen and the study's lead author. "We think this approach should be implemented in the guidelines, as it may help patients avoid returning for future angioplasty in an urgent manner."

While this approach was found to reduce the likelihood of unplanned angioplasty or bypass, the study authors were surprised to find there were no significant differences in rates of death or repeat heart attacks.

"The neutral impact from complete revascularization on death and repeat heart attacks is informative for physicians [because] if their patients have other risk factors, like poor compliance with dual antiplatelet medical therapy or a need for complex angioplasty that may lead to unsuccessful results, a more conservative approach can be taken without increasing the risk for death or heart attacks," he said.

Each year nearly 250,000 Americans experience STEMI, a severe form of heart attack that requires immediate angioplasty and is caused by prolonged blockage of blood supply in the heart. About 40 percent of STEMI patients are found to have narrowing of other coronary arteries in addition to the one with the blockage that caused their heart attack—a condition called multivessel disease. Multivessel disease can substantially increase the risk of death and other cardiac events, such as repeat heart attacks or need for urgent angioplasty. According to the study authors, there is no consensus regarding treatment of multivessel disease; therefore, approaches to reduce the risk are needed.

Angioplasty is a non-surgical procedure in which a balloon is fed into the blood vessels through a catheter and inflated to open narrowed or blocked arteries, allowing blood to flow. A stent is often placed at the site of blockage to open the artery. If the blockage is too severe, a

patient will undergo [heart bypass surgery](#) to replace damaged arteries with blood vessels from another area of the body.

The trial, which took place in Denmark, included patients who underwent successful angioplasty for STEMI and had multivessel disease with narrowing of at least 50 percent, as well as a fractional flow reserve of less than 0.80 measured with a guide wire-based procedure that can accurately measure blood pressure and flow through a specific part of the coronary artery.

The results add to mounting evidence showing preventive revascularization to be beneficial in certain patients. Current U.S. guidelines recommend a more gradual approach in which angioplasty is performed once [patients](#) begin to experience symptoms related to multivessel disease.

Engstr&ostroke;m said research is needed to look into whether or not complete angioplasty can be conducted earlier than two days post-STEMI. The researchers' rationale for this timeframe—two days after the initial procedure—was to let the patient's body recover and to allow for more accurate identification of arteries in need of angioplasty.

Provided by American College of Cardiology

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