

## Supplementing angiograms with other probe saves money as well as lives, study shows

December 15 2010

---

(PhysOrg.com) -- A new interventional heart technology that can help patients avoid needless stenting operations has now been found to also save money as well as lives.

A new interventional heart technology that can help patients avoid needless stenting operations by providing in-depth measurements of [blood flow](#) in the vessels to the heart has now been found to also save money as well as lives, according to a study published Dec. 14 in *Circulation: Journal of the American Heart Association*.

“This is one of those rare situations in which a new technology not only improves outcomes but also saves resources,” said William Fearon, MD, first author of the study and associate professor of cardiovascular medicine.

The technology is known as “fractional flow reserve,” or FFR. It involves inserting a coronary pressure guidewire into the artery instead of relying solely on the traditional coronary angiogram to determine which arteries should be stented for patients with coronary artery disease.

Over the course of a year, FFR saved an average of \$2,000 per patient, according to the study. The overall cost was reduced from approximately \$14,000 to \$12,000.

“What we found was a combination of savings first at the initial

procedure as a result of fewer stents and then further savings due to fewer events during follow-up — fewer heart attacks, fewer blood clots, fewer repeat surgeries,” Fearon said.

The cost of an average stent, which doctors use to prop open clogged arteries, is \$2,000. The pressure wire costs about \$650.

The cost comparison study of the two treatment methods for coronary artery disease was an outgrowth of a 2009 study published in the New England Journal of Medicine called “FAME.” Fearon was co-principal investigator and senior author of that multicenter international study. Researchers in the Circulation trial performed an economic evaluation of the results from the FAME trial.

The FAME trial included about 1,000 patients in the United States and Europe. Patients either suffered from chest pains or were recovering from mild heart attacks. All patients had multiple coronary arteries with narrowing.

About half were treated with the traditional method of using an angiogram to decide which narrowings to stent.

With an angiogram, a catheter is used to inject dye into the arteries, and X-rays are taken, which doctors examine looking for narrowed arteries. Any arteries that look significantly narrowed are then propped open with a stent.

The other half of the patients underwent the angiogram with the additional pressure wire technique. To measure blood flow beyond the areas in the arteries that appear narrowed, the pressure wire was threaded through the same catheter used for the angiogram.

“The pressure wire is a thin wire with a sensor near the tip that can

measure the pressure of blood flow,” Fearon explained. “If the narrowing is truly significant it will cause a drop in blood pressure beyond the narrowing. If the pressure was 80 percent or less than the pressure in front of the narrowing, a stent was implanted.”

Researchers found that patients who received the additional blood flow test received one-third fewer stents than the group examined only with an angiogram. Those patients received 2.7 stents on average. The other half who had their blood flow measured in each artery received only 1.9 stents on average.

But an additional study was needed to provide evidence that the new technique also saved money.

More than 1.2 million of the procedures to unclog the arteries and implant stents, called angioplasty, are performed each year in the United States, according to the American Heart Association. Narrowing of the arteries caused by buildup of atherosclerotic plaque is common. About 40 percent of Americans over the age of 60 have one or more narrowings in the coronary arteries. But most of these aren’t significant enough to limit oxygen supply to the heart and can be treated with medications.

The *Circulation* study was funded by St. Jude Medical, which owns the company Radi Medical Systems Inc. based in Sweden, one of two companies that make the pressure wires used in the study.

Provided by Stanford University Medical Center

Citation: Supplementing angiograms with other probe saves money as well as lives, study shows (2010, December 15) retrieved 27 April 2024 from <https://medicalxpress.com/news/2010-12-supplementing-angiograms-probe-money.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.