

New methods needed to ID cardiac catheterization candidates

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It's time to re-think how patients are selected for cardiac catheterization, say doctors at Duke University Medical Center, after reporting in a new study that the invasive procedure found no significant coronary artery disease in nearly 60 percent of chest pain patients with no prior heart disease.

"Our data show that up to two thirds of the patients undergoing invasive cardiac catheterization are found not have significant obstructive disease," says Manesh Patel, MD, a cardiologist with the Duke Heart Center. He's the lead author of the study published in the March 11 issue of the [New England Journal of Medicine](#).

"We're spending a lot of energy and money to evaluate chest pain which often leads to cardiac catheterization, which, we now know, often finds that patients don't have significant obstructive disease," Patel says. "Our research shows that our methods for identifying patients at risk for obstructive disease need significant improvement."

More than 10 million Americans experience chest pain each year and many undergo testing like cardiac catheterization to determine if blocked arteries are the culprit. It's standard care for people who experience heart attack or unstable chest pain. The invasive test is not cheap, nor is it without some risk. But it allows doctors to visualize the vessels and arteries leading to the heart.

The main goal of cardiac catheterization is to identify the presence,

location, and severity of coronary atherosclerosis, Patel says. "This is done with the understanding that some patients with severe obstruction may benefit from [angioplasty](#) or [bypass surgery](#) to relieve symptoms and to reduce the risk of a [heart attack](#) or death."

The researchers identified two million people who underwent [cardiac catheterization](#) at 663 hospitals nationwide over a four-year-period.

About a fifth of those patients had stable chest pain without a previous diagnosis of heart disease. Most of them had undergone a noninvasive test before catheterization, but only 38 percent of patients turned out to have significant obstructive disease.

What is needed, Patel stresses, is a re-evaluation of the entire decision-making process of caring for patients with chest pain. That runs the gamut from how patients' histories are taken, how risk factors are assessed, to the role of diagnostic testing.

Patel and other Duke researchers who co-authored the *NEJM* paper are working on several efforts to address these concerns. They include national standards on appropriate use of technology, and clinical trials to evaluate different non invasive imaging technologies.

Provided by Duke University Medical Center

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