

# Stress tests to confirm need for cardiac stent not occurring in most patients, new study finds

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UCSF researchers investigating the appropriate use of procedures to open narrowed coronary arteries -- such as angioplasty and stenting -- found that less than half of Medicare patients had documented noninvasive stress testing prior to elective percutaneous coronary intervention, or PCI, the clinical name for such procedures.

The team analyzed a 20 percent random sample of 2004 Medicare claims data, amounting to 23,887 patients who were 65 years or older. The researchers found that 44.5 percent of the study population underwent stress testing within 90 days prior to receiving elective PCI.

PCI is often used to treat angina and ischemia, both of which occur when there is inadequate blood supply to an area of the heart. PCI can provide quicker relief than medical therapy alone, researchers say, but it also carries an increased risk of repeat revascularization, late-stent thrombosis (formation of blood clots) and a decreased quality of life if performed in patients with minimal symptoms.

Findings are reported in the October 15th issue of the "Journal of the American Medical Association" and online at <http://jama.ama-assn.org>.

"With the increasingly widespread use of PCI in patients with stable coronary artery disease, it is important that the procedure is being done in patients for whom there is reasonable expectation of benefit, patients

with documented ischemia or its symptoms," said Rita Redberg, MD, corresponding author on the paper who is a cardiologist at UCSF Medical Center and director of Women's Cardiovascular Services at the UCSF National Center of Excellence in Women's Health.

Patients with stable coronary artery disease now account for the majority of PCIs done in the United States, according to previous studies published in the journal "Circulation." Given this shift, the researchers note, guidelines have been published jointly by the American College of Cardiology, the American Heart Association and the Society for Cardiovascular Angiography and Intervention recommending that any vessels to be dilated for patients with stable angina must be shown to be "associated with a moderate to severe degree of ischemia on noninvasive testing." Previous studies have shown that patients who receive PCI in accordance with these guidelines have better outcomes.

"This means, in most patients who are not having a heart attack, a noninvasive stress test should take place before physicians make the decision to go forward with invasive procedures like stenting and angioplasty," said Grace Lin, MD, lead author on the paper and associate adjunct professor of medicine at UCSF. "We undertook this study to scrutinize a common procedure to learn how best to direct our resources."

The researchers found that there was significant geographic variation in the rate of stress testing by hospital referral region, with rates ranging from a low of 22.1 percent to a high of 70.6 percent.

Patients who had a prior cardiac catheterization (the passing of a thin flexible tube into the heart to obtain diagnostic information or to provide treatment) were less likely to undergo stress testing prior to elective PCI.

The team also found that patient characteristics were associated with the

likelihood of a patient receiving a stress test prior to PCI. Female sex, age of 85 years or older and having co-existing illnesses such as rheumatic disease, chronic obstructive pulmonary disease, congestive heart failure and coronary artery disease were associated with a decreased likelihood of stress testing prior to PCI. Yet, being of the black race and having a history of chest pain was associated with an increased likelihood of a stress test prior to PCI.

Patients of physicians who performed a higher volume of PCI procedures had slightly lower rates of stress testing. No hospital characteristics were associated with whether patients received stress testing, but taken together, hospital factors such as type of equipment, whether the facility had a catheterization laboratory, a cardiac surgery program or whether it was a teaching hospital did associate with a higher likelihood of stress testing.

"This tells us that where you live, who you see, what race and gender you belong to and what type of facility exists in your area affects whether you will have a stress test prior to receiving a stent or angioplasty." Lin said. "We want to understand why physicians make the decisions they make so we can improve care and encourage more evidence-based practice. Further studies will help elucidate these questions."

Source: University of California - San Francisco

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