

# Emotions Drive Angioplasty Rates in Stable CAD

*All physicians recommended PCI in hypothetical setting despite knowledge that there's no benefit.*

BY MICHELE G. SULLIVAN  
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WASHINGTON — When it comes to recommending angioplasty for stable coronary artery disease, evidence can take a backseat to worry, guilt, and the fear of legal liability.

"It appears that both cardiologists and primary care physicians [PCPs] have trouble balancing these psychological and emotional factors with scientific evidence in decision making, and this leads them to recommending more tests and procedures," which eventually culminate in a trip to the cardiac catheterization lab, Dr. Grace Lin said at a conference sponsored by the American Heart Association. Once there, if any lesions at all are identified, "the die is cast" for percutaneous coronary intervention (PCI), she said.

Dr. Lin drew these conclusions from a series of six focus-group meetings she held with 28 primary care providers and 20 cardiologists (13 interventional and 7 non-interventional). She presented each group with three case scenarios based on actual patients with symptoms of stable coronary artery disease (CAD), and asked the participants to describe how they would arrive at a treatment recommendation.

All of the physicians lived in California; their mean duration of practice was 17 years. To help identify any regional differences, she drew one-third from San Francisco, one-third from the city's suburbs, and one-third from a rural county.

"We also interviewed PCPs and cardiologists separately, to encourage frank discussion," said Dr. Lin of the University of California, San Francisco.

Group discussions were set around three case scenarios representing minimally symptomatic or asymptomatic patients for whom the current evidence

shows no benefit of PCI over optimal medical therapy. She described one of the cases: a 45-year-old male with a family history of myocardial infarction. The patient worked out three times each week and was asymptomatic. His wife, however, was worried about his family history and bought him a coronary calcium scan for his birthday. The scan showed a calcium score of 745.

His stress test showed ST-segment depressions of 1-2 mm. A catheterization revealed a tight lesion in the left anterior descending artery.

Dr. Lin asked the group to discuss a range of recommendations, from reassurance and risk reduction interventions to medical therapy, PCI, and coronary artery bypass grafting.

All of the physicians in each group ended up recommending PCI for all three of the hypothetical patients, Dr. Lin said—despite their acknowledgement that no clinical evidence supported the procedure as more beneficial than medical therapy in either the short or long term.

Several major themes emerged from the physician discussions: guilt over the possibility of missing a potentially lethal lesion, patient expectation of testing and intervention, and liability fears.

The fear of guilt arising from a missed lesion was a particularly strong motivator for more tests and interventions. One primary care physician spoke quite eloquently of this, said Dr. Lin. "I had a healthy 42-year-old who dropped dead while jogging. I'm always afraid of missing that widow-maker lesion."

A cardiologist expressed a similar view. Despite the data suggesting that PCI is no better than medical therapy for these patients, "I don't think you can ignore a lesion, because then, if something happens, it's your fault."



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**The study "demonstrates the tendency of physicians to look for solutions based on action," said Dr. Grace Lin.**

"This belief was shared by most of the physicians in our groups," Dr. Lin said. "I think it demonstrates the tendency of physicians to look for solutions based on action."

Interestingly, the participants stuck to their recommendations despite their intellectual understanding of the clinical evidence. According to one cardiologist, "I think we know we are not necessarily preventing heart attacks by treating asymptomatic stenosis with PCI. We are going to prevent future heart attacks with lipid-lowering drugs, aspirin, and ACE inhibitors. But nonetheless, when that patient leaves with an open artery—that is the best that my interventional partners can deliver."

Physicians aren't alone in wanting some concrete action in these cases, Dr. Lin said. "Patient expectations are a frequent reason for testing. Both our PCPs and cardiologists said their patients expected testing regardless of what they themselves thought of it."

One cardiologist put it this way: "If the patient is worried enough to come in and see me, we need to do this testing to reassure him."

Concerns about medicolegal liability also strongly influenced the decision making. A PCP noted, "We all would feel more comfortable treating more patients

medically if we weren't afraid of being sued. With a jury of laypeople, it's hard to justify not stenting despite the evidence, and because of that it's hard to just treat medically and not be afraid of a lawsuit."

Again, Dr. Lin observed, physicians felt very strongly about this despite evidence to the contrary. "There are no data linking additional testing with fewer lawsuits."

All of these factors "culminate in a cascade effect where screening leads to more testing and eventually to the cath lab," she said, citing a PCP who referred to the hypothetical patient's elevated calcium load. "This guy's wife has bought him much more than a scan—she has bought him an entrée to the whole garden path of testing. Any equivocal test and he's ending up in the cath lab."

"This demonstrates that once a patient has any positive screen, it's very difficult to prevent a referral to a cardiologist and eventually, to the cath lab," Dr. Lin said. "Once he reaches there, the cardiologists told us that if any amenable lesion is found, that person is almost certain to get a PCI."

The culture of the catheterization lab also plays into this inevitable progression. A cardiologist explained, "By this time the die is cast. In our practice, where we don't get paid per procedure, we would have difficulty getting out of the lab because the cath lab staff wouldn't let us out unless we did something with that lesion."

The cascade of emotion and worry is what appears to drive the patient with stable CAD to a PCI, Dr. Lin said. Even balancing the possible complications of the procedure with the evidence that it probably yields no additional benefit wasn't enough to sway physicians to medical therapy alone.

"One cardiologist put it like this," she said. "If you do the procedure and there's a complication, that's a complication. But if you don't do it and there's an event—that's a mistake." ■

## After-Hours MI Patients Have Longer Door-to-Balloon Waits

BY MICHELE G. SULLIVAN  
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WASHINGTON — Door-to-balloon times are significantly longer for those whose heart attacks land them in the emergency department after regular working hours than if they arrive during a weekday, Dr. Nowwar Mustafa said at a conference sponsored by the American Heart Association.

Despite presenting at a hospital with a round-the-clock cardiac catheterization lab, night and weekend patients still experienced significant delays in receiving percutaneous coronary intervention (PCI), compared with weekday patients, said Dr. Mustafa, of Christiana Hospital, Newark, Del.

Dr. Mustafa identified three periods of crucial delay in assessing and treating patients who arrived from 7 p.m. to 7 a.m. on a weeknight or from 7 p.m. on a Friday

to 7 a.m. the following Monday. "The only time in which there was no significant delay compared to weekday patients was their time to first EKG," he said. "At every other time interval the differences were significantly longer."

He retrospectively analyzed time delays for 893 consecutive patients who presented to the hospital's emergency department with ST-segment elevation myocardial infarction during 2002-2006. All received emergent PCI. The mean door-to-balloon time was 85 minutes, and 67% of the group fell within the recommended 90-minute treatment window.

He measured four time intervals: door to first ECG; first ECG to treatment deci-

sion; treatment decision to leaving the emergency department (ED); and leaving the ED to balloon inflation.

The time to first ECG was not significantly different between those who arrived during regular hours and those who did not

(9.5 minutes vs. 8 minutes). At all other intervals, patients who arrived after-hours were significantly delayed: ECG to decision, 20 vs. 16 minutes; decision to leaving the ED, 15 vs. 10 minutes; and leaving the ED

to balloon inflation, 48 vs. 42 minutes. Those delays added up, Dr. Mustafa said. The mean door-to-balloon time was significantly longer in the off-hours group (92 vs. 78 minutes). The portion of those who fell within the 90-minute treatment

window was also significantly smaller (58% vs. 76%).

The hang-up appeared to be the time it took to get a cardiologist consult, he said. "During regular working hours the cath lab staff is in-house, and after working hours, the staff is on-call and ready to start the case within 30 minutes of notification. But the decision to take the patient to cath lab is made by the on-call cardiologist. During regular working hours, we have a cardiologist in-house, but this is not necessarily the case after hours."

Dr. Mustafa will evaluate patient outcomes in these groups to determine whether the delays affected mortality.

But in a recent, separate study, delays in door-to-balloon time were associated with an increase of up to 60% in mortality (N. Engl. J. Med. 2007;356:1099-109). "The curves separated early, on the second day of hospitalization, and persisted for an entire year," he said. ■



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**DR. MUSTAFA**