

# Appropriate Use Eludes Nuclear Cardiologists

BY BRUCE JANCIN

FROM THE ANNUAL MEETING OF  
THE AMERICAN SOCIETY OF  
NUCLEAR CARDIOLOGY

DENVER – The majority of nuclear cardiology labs are not utilizing the American College of Cardiology appropriate use criteria for myocardial perfusion imaging, according to the preliminary results of an American Society of Nuclear Cardiology membership survey.

The revelation that only 48% of nuclear cardiology imaging labs employ the ACC appropriate use criteria is disturbing. It comes at a time when nuclear cardiologists are already drawing heat from payers, clinicians, patients, and Congress for perceived overutilization of testing and a casual attitude toward patient exposure to radiation.

The ACC's appropriate use criteria (AUC) program is a high-profile quality improvement initiative. The myocardial perfusion imaging AUC were developed jointly by the ACC, ASNC, and other key specialty societies. Myocardial perfusion imaging (MPI) was the first topic selected for the program, which has since gone on to develop AUC for other common cardiovascular tests and procedures. MPI was selected to go first because of concerns raised by the explosive growth and substantial regional variation in the procedures. The initial version of the MPI AUC was published in 2005, with an updated rendition appearing 2 years ago (*J. Am. Coll. Cardiol.* 2009;53:2201-9).

ASNC President Leslee J. Shaw, Ph.D., presented the preliminary membership survey results during her presidential address. She also took that occasion to unveil an ambitious new multifaceted ASNC campaign called "Excellence in Imaging." The program is designed to improve the practice of nuclear cardiology through education and advocacy, and by fostering high-quality research



that demonstrates nuclear imaging's clinical value. ASNC members who take the Excellence in Imaging pledge commit themselves to following the AUC.

"By taking a proactive stance on defining quality in nuclear cardiology and demonstrating our members' commitment to these defined quality measures, ASNC will lead the discussion about appropriate use and set the standards by which our patients receive optimal care," promised Dr. Shaw, professor of medicine at Emory University, Atlanta.

"What the survey results say to me is that we need to do a better job of providing you with tools where you can see the value in improving your process of care, and how the AUC can be utilized to actually identify appropriate patient referral patterns and track your success. This is increasingly going to be a performance metric. Your rating for appropriate test candidates is going to be used as a quality metric," she explained.

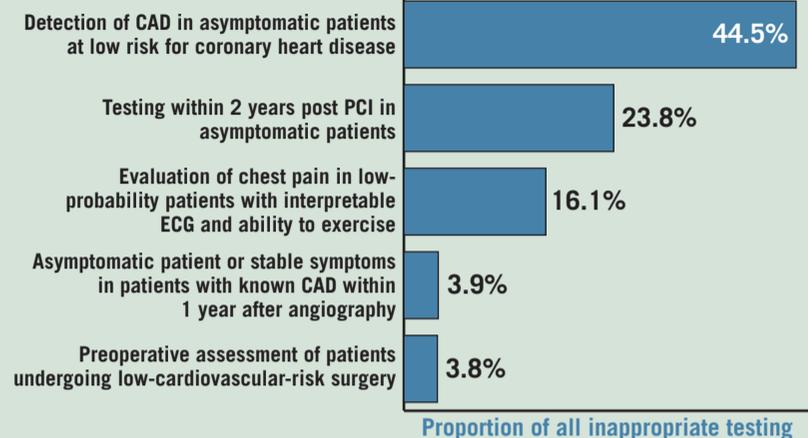
The educational portion of the Excellence in Imaging campaign will include continuing medical education that is designed to raise the quality of imaging by ASNC members, and webinars for referring physicians aimed at fostering appropriate referral patterns. Clinical decision support tools are being developed for smart phones to assist referring

physicians in selecting the optimal test for a given patient, rather than leaving the testing decision to be made downstream when the patient arrives at the nuclear cardiology clinic. There will also be public education efforts to dispel widespread misconceptions about radiation safety.

Dr. Manuel D. Cerqueira later observed that shifting the timing of appropriate test decision making to the point when testing is ordered by referring physicians is "easy to say, hard to do."

No matter how many conversations he has with emergency department physicians at outlying hospitals about not sending him low-risk, inappropriate can-

## Top Five Inappropriate Indications for SPECT MPI



Note: Based on a study of 6,351 patients.  
Source: *J. Am. Coll. Cardiol.* 2010;55:156-62

didates for imaging procedures involving ionizing radiation exposure when there are better nonradioactive tests available, they continue to do so.

"They're worried about liability, they're worried about their 1-year contract that gets reviewed by the hospital, and they're worried about the pressure the hospital puts on them to do more procedures that are lucrative for the hospital," said Dr. Cerqueira, professor of radiology and medicine at the Cleveland Clinic Foundation.

In a separate presentation, Dr. Robert C. Hendel, who chaired the writing group for the updated MPI AUC, said a dozen studies presented in the past 5 years show that 10%-15% of all MPIs are inappropriate, as defined by the AUC.

"Basically, if it's an inappropriate indication, by definition the risks exceed the benefits. The best radiation safety we can do is not to perform the test – not to expose the patient – when it's not necessary," explained Dr. Hendel, professor of medicine and radiology at the University of Miami.

He led a six-center study called SPECT-MPI involving roughly 6,000 consecutive patients who underwent single photon emission CT. Overall, inappropriate use of the procedure occurred in 14.4% of patients, with rates ranging

from 4% to 22% among the practices.

The SPECT-MPI study identified the major problem areas for inappropriate utilization. Topping the list was the use of MPI to detect CAD in asymptomatic patients at low risk for coronary heart disease; this accounted for 45% of all inappropriate tests and 6% of total testing.

The five most common inappropriate-use indications accounted for 92% of all inappropriate tests. (See graphic.) If all testing done for these five inappropriate reasons were to be eliminated, total imaging volume would be reduced by 12.4% (*J. Am. Coll. Cardiol.* 2010;55:156-62).

"Imaging in Focus" is an ACC-sponsored national quality improvement initiative aimed at helping cardiovascular physicians to reduce inappropriate imaging in a collaborative, nonconfrontational way through the use of webinars, blogs, and other tools. It's designed as a learning community whose stated goal is to achieve a 50% reduction in inappropriate imaging in 3 years. Dr. Hendel announced that the program has already resoundingly surpassed that target. In its first year of operation, imaging centers participating in Imaging in Focus reduced their inappropriate imaging by 50% from a baseline rate of 10%.

None of the speakers has relevant financial interests. ■

**'Your rating for appropriate test candidates is going to be used as a quality metric.'**

DR. SHAW

## Left Anterior Fascicular Block Voids Exercise ECG Results

BY BRUCE JANCIN

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DENVER – The presence of left anterior fascicular block on a resting ECG indicates an ECG exercise stress test will have significantly diminished diagnostic accuracy, according to a retrospective study.

Thus, this finding on the resting ECG warrants giving serious consideration to adding an imaging modality such as single-pho-

ton emission computed tomography (SPECT) myocardial perfusion imaging to the patient's exercise stress test, Dr. Tarek M. Mousa said at the meeting.

He presented a retrospective study of 1,403 patients who underwent both a maximal treadmill exercise stress ECG test and SPECT myocardial perfusion imaging in search of inducible myocardial ischemia. In all, 62 patients (4.4%) had left anterior fascicular block (LAFB) on their resting ECG, including 24 who had both LAFB and

VITALS

**Major Finding:** Exercise ECG stress test showed a sensitivity of 39% for myocardial ischemia in patients with LAFB on their resting ECG, compared with 70% in the patients without LAFB.

**Data Source:** Retrospective study of 1,403 patients who underwent both maximal treadmill exercise stress ECG test and SPECT myocardial perfusion imaging in search of inducible myocardial ischemia.

**Disclosures:** Dr. Mousa declared having no financial conflicts.

right bundle branch block.

The exercise ECG stress test showed greatly reduced sensitivity for myocardial ischemia in patients with LAFB on their

resting ECG: 39% as compared with 70% in the 1,341 patients without LAFB.

On the other hand, a finding of greater than 1 mm of exer-

cise-induced ST-segment depression in at least two contiguous leads had significantly greater specificity as an indicator of inducible myocardial ischemia when it occurred in the setting of LAFB: 96% as compared with 79% in controls, added Dr. Mousa of New York Hospital Queens in Flushing.

The presence or absence of right bundle branch block in patients with LAFB on their resting ECG did not affect the diagnostic accuracy of their ECG exercise stress test. ■