Guidelines on CV Risk Assessment Go Low-Tech

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CHICAGO – New American College of Cardiology / American Heart Association guidelines on cardiovascular risk assessment in asymptomatic adults may be better remembered for the tests and procedures that received a thumbs-down rather than for those endorsed for routine use.

For example, genetic testing was among the newer, often glamorous tests that have captured intense public and physician interest, yet they were classified as class III – meaning they're deemed not useful and may be harmful. In other words, don't do them in people without symptoms of heart disease.

"Genetic testing is a sexy area right now, but we didn't see it as being ready or as having shown added value," Dr. Sidney C. Smith Jr. said in a press briefing on the new guidelines held during the meeting.

Other tests that were rated class III included advanced lipid testing with measurement of apolipoproteins and particle size and density, MRI for the detection of arterial plaque, measurement of natriuretic peptide levels, and coronary CT angiography.

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"You'll hear a lot of discussion about the value of coronary CT angiography in people who come into the emergency department with chest pain, but that's a very different population," said Dr. Smith, a member of the risk assessment guideline writing committee and immediate past chair of the ACC/AHA task force on practice guidelines.

Stress echocardiography, measures of arterial stiffness, and assessment of flow-mediated dilation also received class III status, noted Dr. Smith, professor of medicine and director of the center for cardiovascular science and medicine at the University of North Carolina, Chapel Hill.

In his Ancel Keys Memorial Lecture delivered at the AHA conference, Dr. Philip Greenland, chair of the guideline writing committee, explained that new diagnostic tests have to clear a high bar: They must show evidence of added value beyond that provided by the Framingham Risk Score or another global cardiovascular risk score plus assessment of family history, which are the only class I recommendations in the new report, meaning they should be performed in all adults.

The family history is a new class I recommendation. A positive family history under the Framingham definition is a first-generation male relative with a cardiovascular event at age 50 or younger, or by age 60 or younger in a female relative.

The new guidelines state that a global cardiovascular risk score and family history are essential for everyone, preferably starting at age 20, and should be repeated every 5 years.

For a new risk marker to be considered as useful for risk prediction, it must be shown to be a statistically independent predictor after an accounting for established risk factors. Beyond that, it must also be shown to change predictive risk sufficiently to alter recommended therapy. And then it must be shown that using the novel marker to sort patients and treat them accordingly would actually yield better clinical outcomes than if the marker had not been used, said Dr. Greenland, professor of medicine and preventive medicine at Northwestern University in Chicago.

"This is a big question for almost all of our biomarkers in cardiovascular medicine, where we can perhaps show improvement in prediction, but it's not quite so clear we can show improvement in clinical outcomes," he said. "Generally speaking, we haven't seen much evidence of improvement of risk prediction with the new markers when

you look at the whole picture. The one exception, I would say, is measurement of coronary artery calcium. I came to this as a major skeptic about coronary calcium, and only after seeing some data did I come to believe that coronary calcium might actually have clinical impact. But even with coronary calcium, I think we're too early in the evaluation process to recommend routine use beyond standard risk measurement."

Indeed, coronary artery calcium scoring gets a class IIa recommendation (meaning it's reasonable for cardiovascular risk assessment) only in asymptomatic adults who are at intermediate risk, as defined by their global Framingham-type risk assessment, with an estimated 10%-20% risk of a cardiovascular event in the next 10 years. Coronary calcium scoring gets a lesser IIb rating (meaning it 'may be considered appropriate') in patients who are at low to intermediate risk, as defined by an estimated 6%-10% risk of an event over 10 years. In patients with less than a 6% 10-year risk, it gets a class III rating.

Investigators in MESA (Multi-Ethnic Study of Atherosclerosis) found that adding coronary artery calcium scores to standard cardiovascular risk factors improved risk discrimination from 77% to 82%, which the committee deemed clinically meaningful, Dr. Smith noted.

Measurement of C-reactive protein, another hot topic, is rated class III (no benefit) in asymptomatic adults who are defined as high-risk by the Adult Treatment Panel III standard of a greater than 20% 10-year risk. Similarly, CRP is class III in low-risk men younger than age 50 and in low-risk women younger than age 60.

However, CRP gets a class IIa recommendation as a guide to deciding on statin therapy in men aged 50 or older and in women aged 60 and older with an LDL cholesterol level of less than 130 mg/dL. It gets a class IIb recommendation in asymptomatic men and women aged 50 and 60 years, respectively, or younger.

The full 54-page guideline was released online in Circulation during the conference, and it is available at http://circ.ahajournals.org/cgi/reprint/CIR.0b013e3182051b4cv1.

Dr. Smith declared having no relevant financial interests. Dr. Greenland disclosed serving as a consultant to Pfizer, General Electric, and Toshiba. ■