Ankle-Brachial Index Could Become CVD Screen

BY DOUG BRUNK

SAN DIEGO — The prevalence of abnormal ankle-brachial index, plasma fibrinogen, and C-reactive protein is surprisingly high among adults with no known history of heart disease, according to results from a large national study.

The finding sheds new light on predicting one's risk for cardiovascular disease, lead investigator Timothy P. Murphy said in an interview in advance of the annual meeting of the Society of Interventional Radiology, where the study was presented.

"We have some very potent medical treatments that can help people avoid heart attacks, stroke, and coronary-related death," said Dr. Murphy, an interventional radiologist and director of the vascular disease research center at Rhode Island Hospital, Providence. "The question is, who should get those intensive medical therapies and who should not? The medical therapies have side effects and they're also expensive. Not everyone can take them."

Previous studies have shown that a low ankle-brachial index (ABI), elevated plasma fibrinogen, and elevated C-reactive protein (CRP) are associated with a higher risk of cardiovascular disease, but no comparable data have been reported for the prevalence of abnormal ABI, fibrinogen, and CRP in populations not considered at high risk for cardiovascular events.

Dr. Murphy and his associates analyzed data from a cohort of 6,292 men and women aged 40 years and older who participated in the 1999-2004 National Health and Nutrition Examination Survey (NHANES) and who had no known history of heart disease, stroke, diabetes, or atherosclerotic vascular disease. The main goal was to identify the proportion of study participants with an abnormal ABI (defined as less than 0.9 in either leg); elevated plasma fibrinogen (defined as 400 mg/dL or higher), and elevated CRP (defined as greater than 3 mg/L) whose risk for cardiovascular disease was considered to be low or intermediate based on a Framingham risk score of less than 20%.

Of the 6,292 subjects, 91% had a Framingham risk score of less than 20%. Of these, 3% had a low ABI, which translates into about 2.1 million Americans. In addition, 16.9% had elevated fibrinogen and 38.8% had elevated CRP. Dr. Murphy noted that 45% of these subjects had abnormal readings in at least one of the three conditions.

"Maybe we should do screening ABIs before we write off intensive medical therapy for all low- and intermediate-risk people," he commented. "The proposal to use ABI as a screening tool is appealing because there are a number of interventional radiologists, vascular surgeons, and vascular internists using it for that purpose already. … We need to get the word out about this to the primary care community, because that's where most of the patients are."

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He noted that ABI is likely a more specific screening test than serum fibrinogen or CRP because it detects already-established atherosclerotic disease, and added that it remains unclear what happens when physicians begin intensive medical therapy in patients found to have a low ABI. "It's not known if you can reduce the increased risk of cardiovascular disease at that point," Dr. Murphy said. "We think it's likely, but this study does not address that."

He estimated that fewer than 5% of primary care physicians use ABI as a screening tool for cardiovascular disease. "It might take 15-20 minutes to do an ABI," he said. "The problem is, Medicare doesn't reimburse ABI as a screening test in asymptomatic patients. If a patient has symptoms they would be indicated for the ABI and that could be reimbursed."

Dr. Murphy said that he had no conflicts to disclose. ■