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Low risk for heart attack? Could an ultrasound hold the answer?

By adding the results of an imaging technique to the traditional risk factors for coronary heart disease, doctors at Baylor College of Medicine in Houston found they were able to improve prediction of heart attacks in people previously considered low risk.

The findings are being presented today at the American Heart Association's Scientific Sessions in New Orleans.

Researchers used ultrasound imaging to view the carotid intima media thickness (C-IMT), or thickness of the artery walls.

"The ultrasound added another dimension to the risk factor score and showed us that those with thick arteries in the higher end of low risk group actually are at intermediate risk for coronary heart disease," said Dr. Vijay Nambi, assistant professor of medicine - atherosclerosis and vascular medicine at BCM and lead author of the study.

Risk prediction is traditionally divided into three groups: low, intermediate and high risk. Low risk is defined as having a less than a 10 percent chance of having coronary heart disease in the next 10 years. Intermediate is a 10 percent to 20 percent chance of a coronary event, and high risk is anything greater than 20 percent. This percentage is calculated by doctors using a score based on traditional risk factors which include age, gender, HDL cholesterol (good cholesterol), total cholesterol, hypertension and smoking.

Nambi and his colleagues followed more than 13,000 people already taking part in the Atherosclerosis Risk in Communities study, a large scale study designed to investigate the etiology and natural history of atherosclerosis. Participants in the current study were followed for almost 14 years. After adding imaging to the traditional risk factors, those in the higher end

of the low risk group (estimated 10-year risk of 5 percent to 10 percent) were found to have a greater chance of having a heart attack especially if imaging revealed them to have a thicker C-IMT. Nambi said that about 4 percent of those who fell in the zero percent to 5 percent estimated risk had a heart attack, while more than 13 percent of those in the 5 percent to 10 percent suffered from coronary heart events. Furthermore, he pointed out that in the 5 percent to 10 percent risk group, those with the thickest arteries had approximately a 17 percent risk for coronary heart events when followed for 14 years.

"There is a big difference between 4 percent and 13 percent," said Nambi. "These results show us that we need to take a closer look at some of those individuals in the low risk category and even reconsider the definition of "low risk."

"Our goal is to target those in the most need," said Dr. Christie Ballantyne, chief of atherosclerosis and vascular medicine and professor of medicine at BCM. "Being able to pinpoint those more likely to have a heart attack will allow us to take early, more effective preventive action to stop a heart attack before it happens."

Ballantyne, a co-author in this study, is also the director of the Center for Cardiovascular Disease Prevention at the Methodist DeBakey Heart & Vascular Center.

Others who took part in the study include Drs. Lloyd Chambless, University of North Carolina at Chapel Hill; Aaron R. Folsom, University of Minnesota School of Public Health; Yijuan Hu, University of North Carolina; Tom Mosley, University of Mississippi Medical Center; and Kelly Volcik and Eric Boerwinkle, both of The University of Texas Health Sciences Center at Houston.

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