
RSNA Press Release

CT Angiography Highly Accurate, Multicenter Trials Show

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CHICAGO – Computed tomography (CT) angiography is as accurate as an invasive angiogram in detecting coronary artery disease, according to the findings of the first two prospective multicenter 64-slice scanner trials presented today at the annual meeting of the Radiological Society of North America (RSNA).

"These two trials with comparable results clearly set the stage for the widespread adoption of and reimbursement for coronary artery CT examinations," said Gerald D. Dodd III, M.D., chair of the Department of Radiology at the University of Texas Health Science Center in San Antonio.

For the Coronary Artery Evaluation Using 64-Row Multidetector Computed Tomography Angiography (CORE-64) Trial, researchers at nine international centers studied 291 patients who were scheduled to undergo invasive coronary angiography for suspected or unknown coronary artery disease. The study found that 64-slice multidetector CT angiography was highly accurate in detecting blockages of greater than 50 percent, with a sensitivity of 85 percent and a specificity of 90 percent. The noninvasive exam was equal in accuracy to invasive angiography in its ability to identify patients to be referred for angioplasty or bypass surgery.

"Reliable assessment of the presence of coronary blockages and accurate prediction of coronary revascularizations are feasible with 64-slice CT coronary angiography," said presenter Marc Dewey, M.D., radiologist at Humboldt University Berlin, Charité, Germany. "Patients with low to intermediate risk of having coronary blockages are most likely to benefit from coronary CT angiography, since in those patients the necessity of invasive angiography is greatly reduced."

At A Glance

- Two multicenter trials presented at RSNA 2007 have found that CT angiography is comparable to invasive coronary angiography in detecting coronary blockages.
- The CORE-64 Trial evaluated 291 patients at nine international centers and found that 64-slice multidetector CT angiography was highly accurate in detecting coronary blockages of greater than 50 percent.
- The ACCURACY Trial found that noninvasive coronary CT angiography is highly accurate in detecting coronary blockages in chest pain patients referred for invasive coronary angiography and is also an effective noninvasive method to exclude obstructive coronary blockages.

The Assessment by Coronary Computed Tomographic Angiography of Individuals Undergoing Invasive Coronary Angiography (ACCURACY) Trial compared 64-row coronary computed tomographic angiography (CCTA) to quantitative coronary angiography (QCA). The results demonstrated that CCTA is highly accurate in detecting coronary blockages in chest pain patients referred for invasive coronary angiography and is also an effective noninvasive method to exclude obstructive coronary blockages.

Sixteen institutions performed CCTA on 232 patients with typical or atypical chest pain prior to invasive coronary angiography. Findings were then compared to those of QCA, the reference standard used to quantify the results of the invasive coronary angiography.

A total of 82 blockages greater than 50 percent in 49 patients and 31 blockages greater than 70 percent were detected in 28 patients by QCA. Per-patient sensitivity and specificity of CCTA were 93 percent and 82 percent, respectively, for blockages greater than 50 percent, and 91 percent and 84 percent for blockages greater than 70 percent. In addition, negative predictive value was 97 to 99 percent.

"In a population of chest pain patients with a low to intermediate prevalence of obstructive coronary artery blockages, CCTA performed highly accurately compared to invasive coronary angiography," said presenter James K. Min, M.D., assistant professor of radiology and medicine at New York Presbyterian Hospital and director of the Cardiac Computed Tomography Laboratory and Cornell University Medical Center. "These findings demonstrate the high diagnostic performance of CCTA."

Note: Copies of RSNA 2007 news releases and electronic images will be available online at RSNA.org/press07 beginning Monday, Nov. 26.

RSNA is an association of more than 41,000 radiologists, radiation oncologists, medical physicists and related scientists committed to excellence in patient care through education and research. The Society is based in Oak Brook, Ill. (RSNA.org)

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