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TECHNOLOGIES DIAGNOSE CORONARY DISEASE IN ONE HEARTBEAT

Research Also Identifies Predictors of Procedural Success

ATLANTA, GA (March 14, 2006) — As a growing number of Americans are diagnosed with heart conditions each year, it is becoming increasingly important that new heart-specific diagnostic technologies are developed that are easier and more effective than previous standards. Emerging technologies to diagnose heart disease and a more systematic way to predict the long-term success of cardiac procedures are among the topics of studies presented today at the American College of Cardiology's inaugural *Innovation in Intervention: the i2 Summit 2006*. Innovation in Intervention: i2 Summit is an annual meeting for practicing cardiovascular interventionalists sponsored by the American College of Cardiology in partnership with the Society for Cardiovascular Angiography and Interventions.

One-Beat Whole Heart Imaging Using the 2nd Spec 256-Multislice CT: First Clinical Data (Abstract 2914-117)

The 2nd Spec 256-Multislice CT scanner (computed tomography) represents the next generation of CT scanners to assess coronary artery health and cardiac anatomy and function. The diagnostic tool is designed to non-invasively determine whether significant coronary artery disease is present, completing the whole heart scan in 1.5 seconds without gating and table movement, using the wider coverage of the CT scanner. For comparison, the commonly used 64-slice CT scanner takes approximately 10 seconds to complete a diagnostic scan of the heart.

A team of researchers at Ehime University School of Medicine in Japan tested the efficacy of the 256-Multislice CT on two patients, both of whom had previously experienced

— more —

heart attacks, and determined they could clearly and effectively evaluate the damage from the patients' past heart attacks. By injecting a contrast solution into each patient, researchers were able to see two-dimensional and three-dimensional images of the heart to assess coronary and cardiac function. Coronary artery structure was evaluated, as was the function of the left ventricle, the main pumping chamber of the heart. The volume of blood moved during the heart's diastolic (filling) and systolic (emptying) cycles was determined, and ejection fraction, or pumping capacity, was obtained.

"The 2nd Spec 256-Multislice CT seems to be a promising next generation CT for coronary and cardiac imaging," said Akira Kurata, M.D., Ph.D., of Ehime University School of Medicine and lead author of the study. "We are pleased by the speed of the procedure which allows us to assess patients 'with just one beat of the heart.'"

Comorbidity and Outcome After Percutaneous Coronary Interventions (Abstract 2903-83)

Percutaneous coronary intervention (PCI) is a procedure performed in the cardiac catheterization laboratory to help physicians diagnose heart disease and open arteries in the heart to restore blood flow. When predicting patient survival following PCI, clinicians typically do not evaluate how the presence of other diseases or systemic risk factors, such as kidney disease or simply age, might impact the outcome.

A team of researchers from the Mayo Clinic in Minnesota and the Mid-America Heart Institute in Missouri concluded that these and other factors, coupled with in-hospital complications, add significant information to predict long-term mortality. The study reviewed the records of 7,659 patients undergoing PCI at the Mayo Clinic between 1999 and 2004, and noted the Mayo Clinic Risk Score (MCRS) and the coronary artery disease (CAD)-specific index for determination of other diseases.

The average MCRS score for patients in the study was 6.5. The patients' CAD-specific index scores varied, as 46 percent scored 0-1, 30 percent scored 2-3, and an additional 23 percent scored 4 or higher. The higher the MCRS and CAD-specific index, the higher the risk for a major cardiac event such as a heart attack while in the hospital. The combined MCRS and CAD-specific index scores allowed for better prediction of mortality following PCI than the MCRS alone.

"Taking into consideration other diseases and conditions using the MCRS and CAD-specific index gives doctors more valuable information to help determine how a patient will fare following a PCI procedure," said Mandeep Singh, M.D., the study's lead investigator. "Such health status measures should be regularly included in patient assessments to predict long-term mortality."

The MCRS comprises eight conditions – age; shock; the heart's functional status as determined by the New York Heart Association classification system; congestive heart failure; kidney disease; thrombus (blood clot), the presence of disease in the left ventricle, the main pumping chamber of the heart; the presence of disease in more than one artery in the heart; and whether the procedure is being conducted on an emergency basis. The CAD-specific index assigns weights to individual diseases according to how much they contribute to a patient's prognosis, ranging from 0 to 21.

Delayed Facilitated Percutaneous Intervention Versus Immediate in Reperfused Stemi (Abstract 2804-4)

Quick action is critical when treating patients with ST-elevation myocardial infarction, or heart attack. This study examined outcomes of patients who experienced a successful return of blood flow to the heart following a heart attack, were initially treated with drug therapy, and subsequently underwent percutaneous coronary intervention (PCI, a procedure performed in the cardiac catheterization laboratory to access the heart and major blood vessels to diagnose heart disease and open arteries in the heart to restore blood flow).

Patients at the G.F. Ingrassia Hospital in Italy were randomized to two groups – one group (225 patients) underwent PCI within two hours after drug therapy while the other group's (226 patients) procedure was delayed for 12 hours and completed within 72 hours. Following the procedure, patients in both groups showed similar results in ejection fraction (percentage of blood pumped out of the left ventricle with each heartbeat), CK release (blood test of enzyme level to determine heart muscle damage), and openness of the previously blocked artery that led to the heart attack, all determinants of the PCI's success.

Further, the group of patients whose PCI was delayed showed a significant reduction in complications, including reduced blood supply to the heart, reblockage and bleeding, as well as

significantly reduced evidence of blood clots in the previously blocked artery that led to the heart attack.

"Our data suggest it is safe and effective to delay PCI in patients with ST-elevation myocardial infarction who have been successfully treated pharmacologically," said Pietro Di Pasquale, M.D, of G.F. Ingrassia Hospital and lead author of the study. "In fact, it may be preferable to wait, due to the reduction in complications and repeat PCI. Of course the needs of some patients may warrant more immediate response, so this data should be one of many factors to consider."

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The American College of Cardiology (www.acc.org) represents the majority of board certified cardiovascular physicians in the United States. Its mission is to advocate for quality cardiovascular care through education, research, promotion, development and application of standards and guidelines- and to influence health care policy. ACC.06 and the ACC inaugural i2 Summit, the first-ever meeting for interventional cardiologists, will bring together more than 30,000 cardiologists and cardiovascular specialists to share the newest discoveries in treatment and prevention, while helping the ACC achieve its mission to address and improve issues in cardiovascular medicine.

Innovation in Intervention: i2 Summit is an annual meeting for those practicing coronary and non-coronary interventions. Sponsored by the American College of Cardiology, in partnership with the Society for Cardiovascular Angiography and Interventions and other professional associations, i2 Summit 2006 offers late-breaking interventional clinical trials, peripheral, vascular, coronary and valvular education, live cases from Europe, Asia and the United States, emerging technology / state-of-the-art lectures, expert simulation demonstrations, interactive Laptop Learning and general cardiovascular education at ACC.06, held concurrently with i2 Summit, for a dynamic, complete cardiovascular educational experience. i2 Summit consolidates all clinical, educational, practical and community needs into one event and delivers unsurpassed needs-based learning with true objectivity.