

Heart **WATCH** S P R I N G 2 0 1 1

A PHYSICIAN NEWSLETTER PRODUCED BY THE TEXAS HEART INSTITUTE



 **TEXAS HEART[®] INSTITUTE**
at St. Luke's Episcopal Hospital

Large-scale Database Study Shows Advantages of Endovascular Repair of Descending Thoracic Aortic Aneurysms

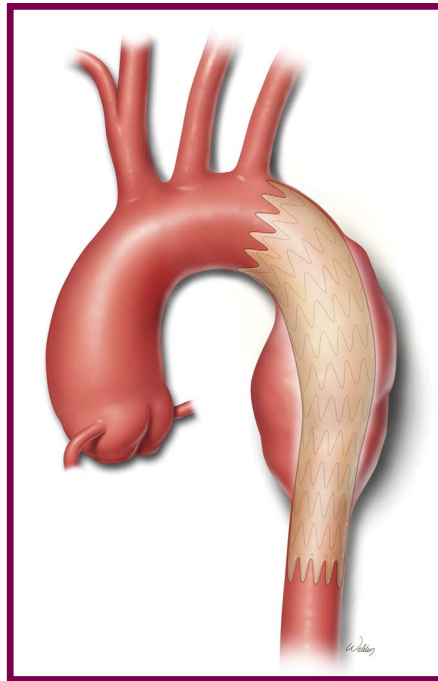
Abstract: Data collected from US hospitals suggest that endovascular intervention may produce better short-term outcomes than open surgery for the repair of descending thoracic aortic aneurysms.

Descending thoracic

aortic aneurysms (DTAAs) arise in the portion of the aorta between the left subclavian artery and the diaphragm. As with all aortic aneurysms, DTAAs that are large (generally, >6.5 cm in diameter) or that expand rapidly (>1 cm/year) pose a risk of rupture and necessitate intervention. Open surgical repair was the only method of intervention until 2005, when the US Food and Drug Administration approved the use of endoprosthesis for thoracic endovascular aneurysm repair (TEVAR) in the descending aorta.

Researchers at the Texas Heart Institute at St. Luke's Episcopal Hospital (THI at St. Luke's) compared the safety and effectiveness of open repair versus TEVAR for DTAA repair. Joseph S. Coselli, MD, Chief of Adult Cardiac Surgery at THI at St. Luke's and Chief of the Division of Cardiothoracic Surgery and Professor of Surgery in the Michael E. DeBakey Department of Surgery at Baylor College of Medicine (BCM); Faisal G. Bakaeen, MD, a cardiothoracic surgeon at THI at St. Luke's, Chief of Cardiothoracic Surgery at the Michael E. DeBakey VA Medical Center, and Associate Professor of Surgery at BCM; Raja Gopaldas, MD, a cardiovascular surgical resident at THI at St. Luke's and first author of the study report (*J Thorac Cardiovasc Surg* 2010;140:1001-10); and their colleagues used data from the US Nationwide Inpatient Sample to examine the outcomes of 11,669 DTAA repairs—9106 by open repair and 2563 by TEVAR—performed at non-federal US hospitals in 2006 and 2007.

Because treatments were not assigned at random, TEVAR and open repair patients differed in their baseline characteristics. For example, TEVAR patients were an average of 10 years older than open repair patients and, thus, were more likely to have had their procedure paid for by Medicare rather than by private insurance. Additionally, TEVAR patients had more preoperative comorbidities. Furthermore, blacks and women composed a greater proportion of the TEVAR patients than the open repair patients, and TEVAR patients tended to be in a lower income quartile. Regression analysis was used



Drawing of a completed endovascular repair of a descending aortic aneurysm.

to adjust for these baseline differences in comparing the outcomes of TEVAR and open repair.

“The main outcomes we examined were in-hospital mortality and hospital length of stay,” says Dr. Bakaeen. “We found that the choice of approach did not affect in-hospital mortality, which was 2.3% for both groups. However, TEVAR patients had a shorter average hospital stay than patients who underwent open repair (7.6 days versus 8.8 days).”

Analyses of other outcomes revealed additional differences between the 2 groups. Patients who underwent TEVAR were more likely to have a routine discharge (ie, to be discharged home without special aftercare) than patients who underwent open repair. Furthermore, TEVAR was associated with a lower rate of in-hospital complications, which was mainly attributable to fewer procedure-related, neurologic, and respiratory complications among the

TEVAR patients. Hospital costs, however, were similar for the 2 approaches.

“Our results indicate that TEVAR is generally associated with a faster recovery and fewer complications,” says Dr. Coselli. “Although this technique is typically reserved for patients for whom open surgery is riskier—that is, patients who are older or who have substantial comorbidity—it could also benefit many other types of patients with DTAA. However, we cannot be certain of this until longer-term studies are conducted that examine data regarding readmissions, long-term costs, subsequent interventions, and findings from repeated imaging.” ●

For more information:

Dr. Joseph S. Coselli

832.355.9910

Dr. Faisal G. Bakaeen

713.794.7892

FORMER FIRST LADY LAURA BUSH RECEIVES 2011 DENTON A. COOLEY LEADERSHIP AWARD

On January 27, the Texas Heart Institute (THI) honored former First Lady Laura Bush with the 2011 Denton A. Cooley Leadership Award. Mrs. Bush was recognized for her extraordinary efforts to raise awareness of heart disease among women. The award was presented by THI President Emeritus Dr. Denton A. Cooley and THI President Dr. James T. Willerson at the Institute's annual gala. Since 2003, Mrs. Bush has served as founding ambassador for The Heart Truth® campaign, attending events nationwide and working to promote knowledge of the threat that heart disease poses to women's health. Guests at the gala wore red, the Heart Truth® campaign's signature color, as a tribute to Mrs. Bush's work. The Denton A. Cooley Leadership Award is given each year to recognize an individual's outstanding contributions to society; previous honorees include Michael E. DeBakey, C. Everett Koop, and Walter Cronkite.

Survival Rates are Similar for Men and Women With a Continuous Flow Ventricular Assist Device

Abstract: A substudy of a heart-assist device trial found similar survival rates for men and women within 18 months of device implantation but lower transplantation rates for women.

Left ventricular assist

devices (LVADs) have been used successfully in heart failure patients as destination therapy and bridges to transplantation, and the effect of LVAD support on patient outcomes has been the subject of several studies. However, much less is known about the effects of LVAD support in women than men because the larger trials have involved pulsatile LVADs. The large volume-displacement chambers in these pumps limit their placement into the typically smaller chest cavities of women. Thus, women have made up a small percentage (8% to 20%) of the patients in these trials.

The HeartMate II (Thoratec Corporation, Inc., Pleasanton, CA) is a new-generation LVAD that provides continuous flow via an axial-flow pump that is compact enough to be implanted in smaller patients, including many women who are not candidates for pulsatile LVADs. To study the outcomes of continuous flow LVAD support in women, Roberta C. Bogaev, MD, Medical Director of Heart Failure and Transplant at the Texas Heart Institute at St. Luke's Episcopal Hospital, and other HeartMate II Clinical Investigators compared the survival outcomes, the quality of life, and adverse events in women (n=104) and men (n=361) with advanced heart failure during the first 18 months of LVAD support with the HeartMate II as a bridge to transplantation (*J Heart Lung Transplant* 2011; e-pub ahead of print). This sex-based study was conducted as a subanalysis of data from a multicenter trial of the HeartMate II.

The study group comprised 465 heart failure patients enrolled at 35 centers. The mean age of men and women was similar (52 years vs 50 years, respectively). However, several other baseline characteristics differed significantly. As expected, women had significantly smaller body surface areas (BSAs) than men (1.76 ± 0.27 vs 2.05 ± 0.23 m²; $P < 0.001$). In addition, women had a lower prevalence of ischemic cardiomyopathy and were less likely to have an implantable cardioverter defibrillator than men.

The outcome analysis of the study showed that survival was similar in men and women during the first 18 months of LVAD support



The HeartMate II left ventricular assist device.

(73% vs 73%; $P = 0.855$). Furthermore, no differences were seen between the sexes in survival rates at 30, 180, or 365 days after LVAD implantation. However, there was a significant difference in the rate of transplantation. Only 40% of women underwent heart transplantation during the 18-month period, whereas 55% of men received a new heart ($P = 0.001$). Furthermore, significantly more women than men remained on LVAD support at 18 months (36% vs 23%; $P = 0.007$), presumably because of the lower transplantation rates and similar survival rates in women.

"It could be speculated that the BSA affected the rate of transplantation in women; however, we found no differences in BSA between women who underwent transplantation and those who remained on LVAD support," says Dr. Bogaev. "Moreover, in a BSA-matched analysis, we found that more smaller-sized men underwent transplantation than did women, suggesting that the lack of smaller donors is not a factor."

Quality of life measures, as well as functional capacity, improved similarly in men and women after LVAD placement. After 6 months of LVAD support, both men and women showed significant improvement in symptoms of heart failure, and the distance walked in the 6-minute walk test increased for both groups.

Adverse events were similar for men and women, with 2 significant exceptions. First, hemorrhagic stroke occurred more frequently in women than in men (0.10 vs 0.04 events/patient-year; $P = 0.02$). Second, fewer device-related infections were seen in women ($P = 0.006$).

"We have shown that support with the continuous flow HeartMate II is associated with similar survival rates in men and women," states Dr. Bogaev. "However, we need to learn why there were differences in stroke, infection, and transplantation rates between the 2 groups." ●

For more information:

Dr. Roberta Bogaev
832.355.3977

Contents

Large-scale Database Study Shows Advantages of Endovascular Repair of Descending Thoracic Aortic Aneurysms	1
Survival Rates are Similar for Men and Women With a Continuous Flow Ventricular Assist Device	2
Heart-Type Fatty Acid Binding Protein is an Independent Predictor of Postoperative Mortality and Ventricular Dysfunction	3
A New Catheter-based Procedure Can Eliminate a Main Source of Blood Clots Originating in the Heart	4
Rare Genetic Copy Number Variants Are Identified in Patients With Thoracic Aortic Aneurysms and Dissections	5
Antitachycardia Pacing Is Clinically Beneficial for Primary Prevention in Patients With Implantable Cardioverter Defibrillators	6
Calendar	7

Heart-Type Fatty Acid Binding Protein is an Independent Predictor of Postoperative Mortality and Ventricular Dysfunction

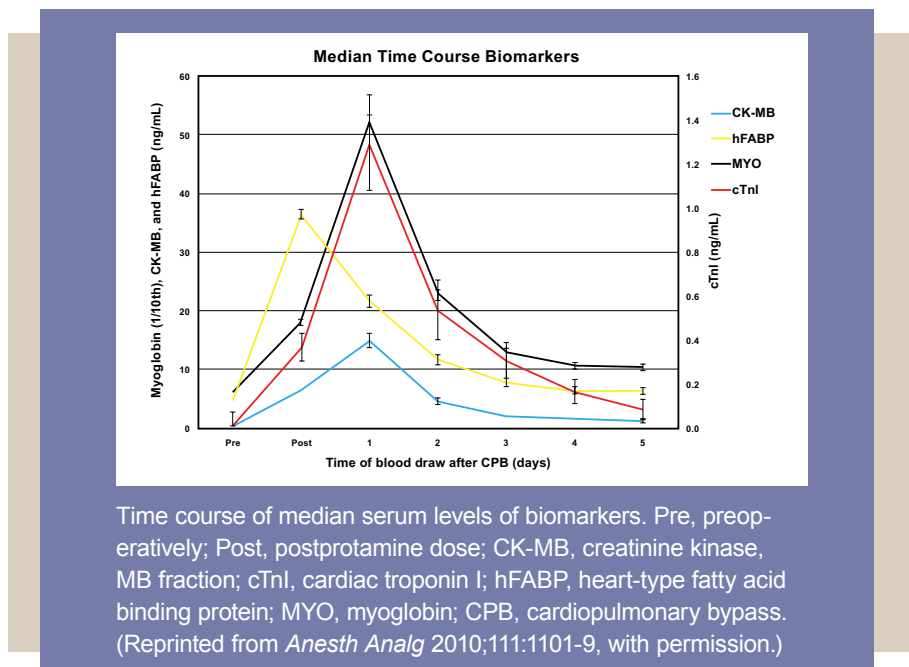
Abstract: Heart-type fatty acid binding protein is superior to traditional markers of myocardial injury in predicting mortality after coronary artery bypass graft surgery.

Up to 15% of cardiac surgical patients have a perioperative myocardial infarction (MI). Diagnosing myocardial injury in such patients can be challenging because serum levels of traditional biomarkers of cardiac injury, such as cardiac troponin I (cTnI) and creatinine kinase, MB (CK-MB), can increase even after routine cardiac surgery. Thus, identifying a highly specific and sensitive marker for use in this population is important.

Heart-type fatty acid binding protein (hFABP) is a small cytosolic protein that transports fatty acids and is found in high concentrations in the myocardium. Released into the circulation early after myocardial injury, hFABP is a sensitive marker of MI and an indicator of increased risk of cardiac events in nonsurgical patients. Whether these findings extend to cardiac surgical patients is unknown. Thus, a prospective study involving 1298 patients was undertaken to test the hypothesis that hFABP is superior to traditional cardiac markers in predicting myocardial injury after coronary artery bypass graft (CABG) surgery (*Anesth Analg* 2010;111:1101-9). The study was conducted at the Texas Heart Institute at St. Luke's Episcopal Hospital (THI at St. Luke's) and Brigham and Women's Hospital as part of the CABG Genomics Program.

"We measured the serum levels of 4 biomarkers of cardiac injury—hFABP, cTnI, CK-MB, and myoglobin—at 7 perioperative time points (see Figure) and examined the association between each biomarker and all-cause mortality for up to 5 years, hospital stay, and ventricular dysfunction," states Charles D. Collard, MD, head of the study at THI, Chief of the Division of Cardiovascular Anesthesiology at THI at St. Luke's, and Professor of Anesthesiology at Baylor College of Medicine.

The study showed that hFABP was better than the other 3 markers at predicting all-cause mortality for up to 5 years. After adjusting for clinical predictors, the researchers found that both postoperative day (POD) 1 levels and peak levels of hFABP were independent predictors of 5-year mortality ($P<0.0001$). The mean concentration of hFABP on POD 1 was 21.0 ng/mL



Time course of median serum levels of biomarkers. Pre, preoperatively; Post, postprotamine dose; CK-MB, creatinine kinase, MB fraction; cTnI, cardiac troponin I; hFABP, heart-type fatty acid binding protein; MYO, myoglobin; CPB, cardiopulmonary bypass. (Reprinted from *Anesth Analg* 2010;111:1101-9, with permission.)

in 5-year survivors and 26.3 ng/mL in nonsurvivors ($P<0.001$). Additionally, hFABP had a 95% (95% confidence interval [CI], 94%-96%) negative predictive value and a 13% (95% CI, 9%-19%) positive predictive value for mortality. Moreover, patients who had hFABP levels that peaked after the primary post-cardiopulmonary bypass (CPB) peak were at increased risk for mortality ($P=0.001$).

"This later peak in hFABP levels is an important indicator of ongoing myocardial injury. We found that the unique increase in hFABP levels after the primary post-CPB peak identified patients at an increased risk of not only mortality but also an extended hospital stay," says Dr. Collard. "Although hFABP predicted hospital stay, it was not superior to the other markers; however, the predictive post-CPB peak was seen only with hFABP."

To validate the connection between these findings and clinically relevant myocardial injury, the researchers studied hFABP levels and the development of postoperative ventricular dysfunction. They found that peak post-

operative levels of hFABP were independent predictors of ventricular dysfunction. Although cTnI levels also independently predicted ventricular dysfunction, hFABP levels on POD 1 were significantly better predictors.

"The need for an accurate biomarker for myocardial injury in the perioperative setting is significant because of the often indeterminate results seen with the diagnostic tools we use in ambulatory patients," says Dr. Collard. "The faster release and clearing of hFABP makes it a more sensitive marker for ongoing or recurring myocardial injury and may allow for earlier re-intervention to restore perfusion and reduce the loss of heart muscle and function. This point-of-care test has the potential to improve the risk-stratification and treatment of patients after cardiac surgery." ●

For more information:

Dr. Charles D. Collard
832.355.2666

A New Catheter-based Procedure Can Eliminate a Main Source of Blood Clots Originating in the Heart

Abstract: A procedure involving the LARIAT Suture Delivery Device can be used to ligate the left atrial appendage, a known source of thrombus, in certain patient populations.

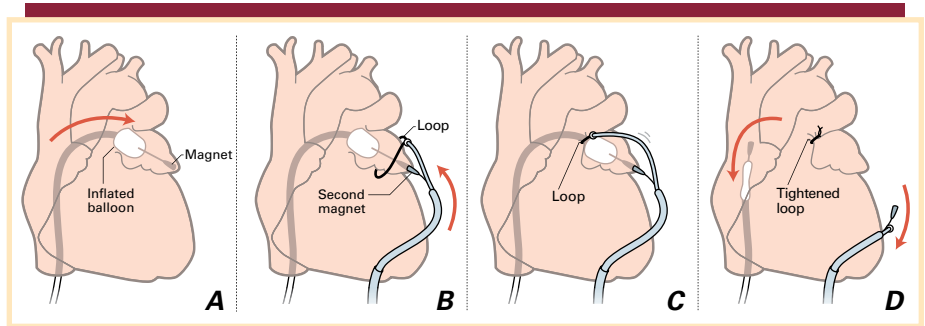
Atrial fibrillation (AF)

is the most common sustained arrhythmia, during which the atria beat rapidly and irregularly. Atrial fibrillation can cause shortness of breath, lethargy, palpitations, stagnation of blood in the atria, and many other problems associated with reduced cardiac output. However, the most serious threat of AF is thromboembolism, which may result in a stroke. Approximately 6 million adults in the United States have been diagnosed with AF, and AF-related strokes account for about one-quarter of all strokes in elderly patients.

Patients with AF are usually treated with drugs that control heart rate or rhythm. However, antiarrhythmic drugs are not consistently effective and can have side effects, as can anti-coagulant medications that are used to prevent thromboembolism. Some patients may not be able to tolerate long-term anticoagulant therapy or may experience therapy-related complications. The current surgical standard for treating AF is the Maze procedure, a complicated operation that usually necessitates cardiopulmonary bypass. Thus, there is increasing interest in developing other strategies that may prevent stroke in patients with AF.

The Texas Heart Institute at St. Luke's Episcopal Hospital (THI at St. Luke's) is the first hospital in Texas and one of only a few in the nation to treat patients with a new catheter-based procedure that uses sutures to tie off the left atrial appendage (LAA)—a known source of thromboemboli. The procedure involves the use of the new LARIAT Suture Delivery Device (SentreHEART, Palo Alto, CA), which was invented by William E. Cohn, MD, Director of Minimally Invasive Surgical Technology at THI at St. Luke's. The LARIAT was cleared in 2009 by the US Food and Drug Administration for soft tissue approximation and ligation and is also cleared for use in Europe.

"Minimally invasive procedures generally mean less discomfort and more rapid recovery," says Jie Cheng, MD, PhD, Director of the Cardiac Electrophysiology Research Laboratory at THI at St. Luke's, who has performed the procedure. "This kind of innovation is not only



Closing the left atrial appendage with the LARIAT device. (A) The first of 2 magnet-tipped guide wires enters the heart via a balloon catheter that is passed through the femoral vein and inflated. (B) The second guide wire is introduced through a small hole made beneath the rib cage. The 2 magnets connect the guide wires so that a pretied suture loop can be passed over them and around the balloon and the left atrial appendage. (C) After the loop is tightened, (D) the balloon is deflated and the guide wires are withdrawn, leaving the tightened loop in place. (Drawing courtesy of Jay Carr, *Houston Chronicle*, and Dr. William Cohn.)

beneficial for the patients but also has the potential to decrease health care costs. The procedure may provide further protection for patients with AF, especially those who are unable to take long-term anticoagulants."

The procedure to close the LAA is performed in the catheterization laboratory. During the procedure, a 4.3-mm puncture hole is made in the pericardium. A guide wire fitted with a strong magnet is threaded through the hole, and another is threaded through the femoral vein and used to establish a track to the LAA. Cardiologists then use the LARIAT to follow the track and, in so doing, slip a pretied suture loop over the LAA. The loop is then tightened under X-ray and ultrasound guidance, occluding the LAA.

"It is very satisfying to see the LARIAT progress from a crude prototype to a fully evolved medical tool that is being used to help patients on a daily basis," says Dr. Cohn. "We hope that by tying off the LAA, we will be able to reduce the incidence of devastating thromboembolic events in patients with AF."

The procedure was used for the first time in January 2011 at THI at St. Luke's in 2 high-risk

patients who had no other treatment options. Dr. Cheng performed the procedures with the assistance of Randy Lee, MD, from the University of California in San Francisco, a cardiologist who helped develop the procedure. Each procedure took about an hour to perform.

"Patients with AF have limited options for long-term protection against stroke," says Dr. Cheng. "This is particularly true for patients who may not be able to tolerate many of the available anticoagulant drugs or who have had complications taking them. The ability to percutaneously close a known source of thromboemboli in patients with AF offers an attractive option for those patients who possibly need it the most." ●

For more information:

Dr. Jie Cheng
713.541.9955

Dr. William E. Cohn
832.355.3000

Dr. Cohn is a cofounder of SentreHEART.

Rare Genetic Copy Number Variants Are Identified in Patients With Thoracic Aortic Aneurysms and Dissections

Abstract: In patients with aortic aneurysms and dissections, rare copy number variants disrupt genes involved in vascular smooth muscle cell adhesion and contractility.

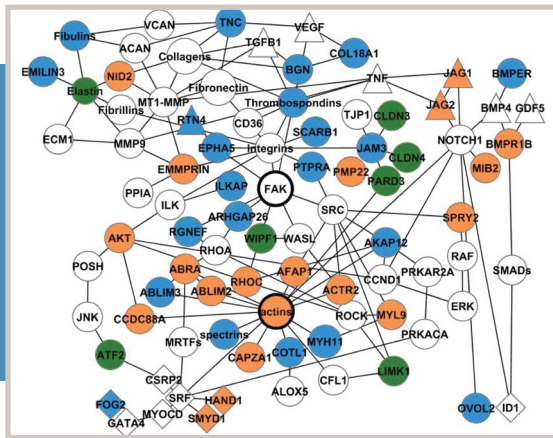
Thoracic aortic aneurysms and dissections (TAAD) are a significant cause of mortality in the United States. The pathologic hallmark of TAAD is degeneration of the medial layer of the aorta, which is normally composed of lamellar smooth muscle cells (SMCs) surrounded by extracellular matrix. Although timely surgical repair can prevent death from TAAD, enlargement of the aorta is usually asymptomatic until aortic dissection occurs, and no reliable biomarkers are available. Developing

reported that rare copy number variations (CNVs)—abnormal copy numbers of 1 or more large regions of DNA—disrupt genes involved in SMC adhesion and contractility in patients with STAAD and FTAAD (Prakash et al. *Am J Hum Genet* 2010;87:743-56).

“These CNVs have been shown to confer increased risk for other common multifactorial diseases,” says Dr. LeMaire. “We hypothesized that a large number of rare CNVs may contribute to the development of TAAD.”

In addition, TAAD-associated CNVs were enriched for genes involved in vascular SMC adhesion and contractility. In the discovery, replication, and FTAAD cohorts, CNVs disrupted 50 genes that interact in a common network (see *Figure*). Interestingly, several of the genes identified have previously been shown to cause or predispose individuals to aortic aneurysms.

“Our findings strongly support a common underlying mechanism for the pathogenesis of TAAD, whereby any 1 of multiple rare variants



Genes identified within TAAD-associated CNVs are part of a network that includes extracellular matrix, intercellular junctions, the actin cytoskeleton, and nuclear transcription factors. Genes are colored according to the cohort in which they were found: green (FTAAD), orange (discovery), or blue (replication); lines indicate functional or physical interactions between gene products. Not all genes are shown. (Reprinted from *Am J Hum Genet* 2010; 87:743-56, with permission.)

a genetic strategy for the prospective identification of patients at risk for TAAD may be critical for preventing sudden death in these patients.

Familial TAAD (FTAAD) accounts for 20% of all TAAD cases, whereas 80% of cases are sporadic (STAAD). Many of the mutations known to cause TAAD or predispose patients to it are single-gene mutations that affect SMC contractility. However, only 20% of patients with FTAAD carry one of these known mutations, suggesting that additional loci remain to be identified. Scott LeMaire, MD, a cardiovascular surgeon at the Texas Heart Institute at St. Luke’s Episcopal Hospital (THI at St. Luke’s) and Professor and Director of Research in the Division of Cardiothoracic Surgery at Baylor College of Medicine, and Dianna Milewicz, MD, PhD, a staff physician at THI at St. Luke’s and Professor and Director of the Division of Medical Genetics at The University of Texas Health Science Center at Houston, recently

The researchers examined CNVs in a discovery cohort (418 STAAD patients), a replication cohort (387 STAAD patients), an FTAAD cohort (88 probands with at least 2 relatives affected with TAAD), and a control cohort (6809 genotypes). Using software programs to extract allele frequency information from patient genotypes, the researchers examined CNVs that overlap with known genes. To determine whether specific cellular functions were disrupted by the CNVs, they performed gene ontology and pathway analysis of the genes contained in the CNVs.

“We identified rare CNVs in 13% of STAAD cases in both the discovery and replication cohorts and a significantly higher number of CNVs [23%; $P=0.03$] in FTAAD cases,” states Dr. Milewicz. “Although the association between any single rare variant and TAAD did not reach genome-wide significance except for one CNV, we observed recurrent rare events in TAAD patients that were not identified in the controls.”

predispose patients to TAAD by disrupting SMC function,” says Dr. LeMaire. “Because 13% of STAAD patients harbor rare CNVs, these genetic variants may contribute to a greater proportion of TAAD cases than do single gene mutations.” This finding has important implications for the development of genetic screening techniques. ●

For more information:

Dr. Scott A. LeMaire

832.355.9910

Dr. Dianna Milewicz

713.500.6715

Antitachycardia Pacing Is Clinically Beneficial for Primary Prevention in Patients With Implantable Cardioverter Defibrillators

Abstract: Antitachycardia pacing terminates most episodes of ventricular tachycardia and reduces painful shocks in patients who receive ICDs for primary prevention indications.

Implantable cardioverter

defibrillators (ICDs) can be used to terminate ventricular tachycardia (VT) in high-risk patients with ventricular systolic dysfunction and congestive heart failure. The ICDs terminate VT either by shock therapy or by antitachycardia pacing (ATP), but shock therapy—although effective—is a painful method of terminating VT. Alternatively, with ATP, overdrive pacing is used to terminate VT, and shocks are administered only if ATP is unsuccessful. Studies have shown that ATP successfully terminates slow and fast VTs, but these trials included primarily patients who received ICDs for secondary prevention indications or for inducible VT. It has been suggested that because of the lower incidence of ventricular arrhythmias in the primary prevention population, ATP is not necessary in these patients. However, because ICDs are being increasingly used for primary prevention indications, further study is warranted to determine whether programming ICDs for ATP therapy could terminate most VT episodes and reduce the number of painful shocks administered to these patients.

For this reason, investigators at the Texas Heart Institute at St. Luke's Episcopal Hospital (THI at St. Luke's) conducted a prospective, nonrandomized, multicenter study to determine whether empiric ATP programming of ICDs or cardiac resynchronization therapy (CRT) devices could successfully terminate VT without accelerating it to ventricular fibrillation (VF) in patients who received the devices for primary prevention indications.

The Programming Ventricular Tachycardia Therapy in Patients with a Primary Prevention ICD Indication (PROVE) Trial (*J Cardiovasc Electrophysiol* 2010;21:1349-54) included patients who received an ICD or a CRT device from St. Jude Medical (Sylmar, CA) for a primary prevention indication. A total of 830 patients in the study population (men, 73%; mean age, 67.3 ± 12 years) received devices programmed to deliver ATP for VT cycle lengths of 270–330 ms. Follow-up evaluation was performed at 3, 6, and 12 months. The primary endpoint was the

rate of successful VT termination. Secondary endpoints included the incidence of VT or VF and the frequency of inappropriate shocks or VT that accelerated to VF.

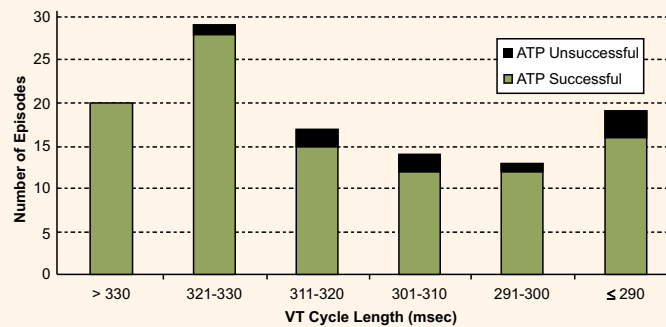
“Our results showed that the incidence of VT is, in fact, significant in this patient population,” says Mohammad Saeed, MD, a staff cardiac electrophysiologist at THI at St. Luke's and first author of the study report. “Of the 112 VT episodes (in 71 patients) for which ATP was attempted, 103 were successfully terminated. Three VT episodes were accelerated to VF by ATP, and those required ICD shock. The other 6 episodes terminated either spontaneously or after ICD shock.”

No significant differences in ATP success rates were observed among patients who received a single-chamber ICD, a dual-chamber ICD, or a CRT device ($P=0.24$).

“We can draw several important conclusions from the PROVE trial,” says Ali Massumi, MD, Director of the Center for Cardiac Arrhythmias and Electrophysiology at THI at St. Luke's and senior author of the study report. “First, in the primary prevention population, many of the episodes that result in ICD or CRT intervention

are due to VT, and ATP is a successful therapy for terminating these episodes. Second, empiric ATP programming is an effective and painless way of terminating VT in this patient population. And finally, ATP appears to be effective, irrespective of heart failure etiology, degree of heart failure, or VT cycle length.”

“An increasing number of patients are receiving ICDs and CRT devices for primary prevention indications, and VT does occur more frequently in these patients than previously thought,” says Dr. Saeed. “If clinicians were to program the devices for empiric ATP therapy at the time of implantation, many VT episodes could be terminated, saving these patients from potentially painful shocks. We believe that device programming may help reduce the number of inappropriate shocks administered in this patient population.” ●



Antitachycardia pacing (ATP) and ventricular tachycardia (VT) cycle length. Antitachycardia pacing was highly effective for terminating VT, regardless of VT cycle length. (Adapted from Saeed M, et al. *J Cardiovasc Electrophysiol* 2010;21:1349-54, with permission)

For more information:

Dr. Mohammad Saeed

Dr. Ali Massumi

713.529.5530

TEXAS HEART INSTITUTE

Scientific Publications

Mail Code 1-194

P.O. Box 20345

Houston, TX 77225-0345

texasheart.org

HeartWATCH

EDITORIAL BOARD

Roberta C. Bogaev, MD
Benjamin Y. C. Cheong, MD
William E. Cohn, MD
Patrick J. Hogan, MD
Scott A. LeMaire, MD
George J. Reul, MD
James M. Wilson, MD

ADVISORY COMMITTEE

Denton A. Cooley, MD
Joseph S. Coselli, MD
O. H. Frazier, MD
Zvonimir Krajcer, MD
James T. Willerson, MD

EDITORS

Rebecca Bartow, PhD
Alexandra Buckley
Christie Chambers, MA, ELS
Virginia Fairchild
Marianne Mallia, ELS
Stephen N. Palmer, PhD, ELS
Nicole Stancel, PhD
Angela Townley Odensky

PRODUCTION ARTISTS

Melissa J. Mayo
James Philpot

Editorial Office, 832.355.6630

For physician referrals,
call 1.800.872.9355

© 2011 TEXAS HEART INSTITUTE
at St. Luke's Episcopal Hospital, Houston, Texas



Cover: Glass heart donated by Mr. & Mrs. Isaac Arnold, Jr., for the Celebration of Hearts display in the [Wallace D. Wilson Museum](#) of the Texas Heart Institute at St. Luke's Episcopal Hospital—The Denton A. Cooley Building.

Calendar of Events

TEXAS HEART INSTITUTE CONTINUING MEDICAL EDUCATION SYMPOSIA

3rd Annual Denton A. Cooley Lectureship in Cardiovascular Surgery

“Denton A. Cooley: A Legendary Surgical Leader”

Texas Heart Institute
April 8, 2011 • Houston, Texas
Lecturer: Frank C. Spencer, MD
www.texasheart.org/cme

Houston Echo Review 2011: Boot Camp for Echo Board

Texas Heart Institute
April 15–16, 2011 • Houston, Texas
Program Director: Raymond Stainback, MD
www.texasheart.org/cme

8th Current Trends in Aortic and Cardiothoracic Surgery

Intercontinental Hotel
April 29–30, 2011 • Houston, Texas
Program Director: Joseph S. Coselli, MD
www.texasheart.org/cme

For information about Texas Heart Institute CME activities, please e-mail cme@heart.thi.tmc.edu or call 713-218-2200. To view or complete selected online CME courses (certificates are available online), please visit www.cme.texasheart.org. New courses are added regularly.

SELECTED UPCOMING LOCAL, NATIONAL, AND INTERNATIONAL MEETINGS

International Society for Heart and Lung Transplantation 31st Anniversary Meeting and Scientific Sessions

April 13–16, 2011 • San Diego, California
www.ishlt.org

American Surgical Association 131st Annual Meeting

April 14–16, 2011 • Boca Raton, Florida
www.americansurgical.info

Society of Cardiovascular Anesthesiologists 33rd Annual Meeting and Workshops

April 30–May 4, 2011 • Savannah, Georgia
www.scahq.org

Heart Rhythm Society 32nd Annual Scientific Sessions

May 4–7, 2011 • San Francisco, California
www.hrsonline.org/sessions

American Association for Thoracic Surgery

91st Annual Meeting
May 7–11, 2011 • Philadelphia, Pennsylvania
www.aats.org/annualmeeting



For 20 consecutive years, the Texas Heart Institute at St. Luke's Episcopal Hospital has been ranked among the top 10 heart centers in the United States by *U.S. News & World Report's* annual guide to “America's Best Hospitals.”