

Miracle on Ice Conference Attracts Nationwide Interest

In 2006, when the Minneapolis Heart Institute®'s Cool It program helped pioneer the use of therapeutic hypothermia for patients resuscitated after a cardiac arrest, it combined a novel treatment with a novel approach to delivery. By adapting the streamlined processes and collaborative systems established by the Level One Heart Attack Program, the Minneapolis Heart Institute® at Abbott Northwestern Hospital was able to implement a unique state-wide strategy to initiate and manage this complex treatment.

That novel approach has garnered attention from physicians and other health care providers from around the country, and the Minneapolis Heart Institute® is responding with articles, presentations, consultations and a recent national conference on the topic.

The conference, Miracle on Ice: Therapeutic Hypothermia for Cardiac Arrest Patients, was held in December 2009, attracting participants from all over the country and speakers from leading centers like the University of Pennsylvania, Massachusetts General Hospital, University of Arizona and Maine Medical Center.

Michael Mooney, MD, cardiologist and lead on the Cool It team, said he and his colleagues were astounded at the level of interest in the conference. "I think there is growing awareness of how important this therapy is and a recognition that many more programs could be offering it.

"This is an area where, historically, there has not been good news. We're achieving survival rates of 60 percent when before the survival was 18 percent. But it's very effort-intensive to get a program like this started, manage these complicated patients and address their ongoing longitudinal needs."

INTEGRATING THERAPEUTIC HYPOTHERMIA WITH CATHETERIZATION

According to Barbara Tate Unger, RN, development director, Systems of Cardiovascular Emergency Care, "The medical community recognizes the significance of establishing a program like Cool It within a system of care in a regional network. As a result, there is great interest in the science of therapeutic hypothermia as well as the mechanics of setting up a program."

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The Cool It Program is the first in the country to integrate emergency angioplasty and therapeutic hypothermia in the catheterization lab.

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Pioneer in Endovascular Surgery Joins the Minneapolis Heart Institute®

Andrew Cragg, MD, considers himself a problem-solver, and his new role as director of Endovascular Research at the Minneapolis Heart Institute® offers him the opportunity to do just that.

The position also means he'll maintain an active role in patient care, contributing to an area at the Minneapolis Heart Institute® that is growing in staff, patient volume and service offerings.

The vascular/endovascular group has expanded from four to seven vascular specialists in the past two years, all of whom have experience in endovascular therapies. The group provides comprehensive care to all patients with vascular disease on an inpatient and outpatient basis, including procedures that were previously not available in the Twin Cities, such as complex aortic surgery and hyperbaric oxygen therapy for patients with non-healing wounds.

Cragg, who most recently served as co-director of the Fairview Southdale Heart, Stroke and Vascular Center, has practiced endovascular intervention in Minneapolis for the past 18 years. He also has authored more than 170 scientific papers, abstracts, chapters and books in his field. He holds more than 130 issued and published U.S. patents for novel devices in the field of minimally invasive surgery and intervention.

INNOVATIONS IN VASCULAR, SPINE, STROKE AND WEIGHT LOSS TREATMENTS

During the course of his career, Cragg has pioneered and introduced into practice many of the catheter-delivered technologies used by surgeons and interventionalists around the world.

"I've always been involved in solving clinical problems we face in our field," said Cragg. "My clinical interests led to the vascular field at a time when researchers were at the forefront of developing minimally invasive technologies."



Andrew Cragg, MD

According to Cragg, he was fortunate to be at the right place at the right time. "Dr. Amplatz was my mentor in the laboratory, so I got off the ground as a medical student working in device development." Kurt Amplatz, MD, is the former University of Minnesota radiologist and researcher whose work has greatly advanced catheter-delivered interventions and therapies.

Among the vascular devices that Cragg has helped to develop are nitinol stents for narrowed blood vessels, aortic endografts for repairing aortic aneurysms, and an injectable polymer that has become the standard of care for treating arterial venous malformations.

"My early interest in endovascular devices has expanded over the years to apply the same principles to other clinical areas," said Cragg. His other contributions include a widely used minimally invasive technique for outpatient spinal fusion surgery, a device in trial in Europe that more rapidly treats stroke by opening blocked cerebral arteries in minutes, and a soon-to-begin trial of a weight loss device that can be inserted on an outpatient basis.

"And that's bringing me back to aortic aneurysms. Now I'm looking at ways to make the treatment even less invasive than it is now," he said.

Cragg also noted the valuable contribution that the Minneapolis Heart Institute Foundation is making in cutting-edge cardiovascular research. In the vascular area, it is funding research on the use of stem cells and growth factors in growing new blood vessels as a treatment for critical limb ischemia. Other studies are examining new treatments for aortic aneurysms and blocked arteries. "We have the latest technologies in the country under investigative protocols here," said Cragg.

PROVIDING ONE-STOP ACCESS TO TREAT COMPLEX PROBLEMS

In the patient care arena, Cragg is focusing on aortic aneurysms, peripheral artery disease and arteriosclerosis. "My goal is to provide one-stop access for getting these complex problems treated expediently and well, and to return patients quickly to the care of their primary physicians. That means having good communication with primary care physicians so the continuity of care is maintained and the patient is well-served."

He has found that the physical layout and facilities of the Minneapolis Heart Institute® contribute to this. "The clinic where patients are seen and treated, the operating rooms and the cath labs are all integrated so it's easy to see patients, order tests and get results in the same day. I've also been pleased with the level of close interaction among the cardiologists, surgeons, radiologists and others. That's good for patients."

Cragg believes that the culture he has observed at the Minneapolis Heart Institute® will support his work with patients and primary care physicians. "There is a dogma that culture dictates behavior, and I think there is a real culture here of commitment to patients."

Abbott Northwestern's Vascular Center

Abbott Northwestern's Vascular Center provides comprehensive care to patients with peripheral artery disease, carotid artery disease, abdominal and thoracic aortic aneurysm, deep vein thrombosis, chronic venous insufficiency, varicose veins, non-healing wounds and need for dialysis access.

The Vascular Center provides individualized management plans for these conditions that incorporate nutrition counseling, wound care and other services. It also offers the latest in diagnostic and treatment capabilities to address the entire spectrum of vascular needs. The vascular/endovascular specialists evaluate patients at the Minneapolis Heart Institute® and at four outreach sites: Cambridge, Edina, Faribault and Waconia. For information or to refer a patient, call 612-863-6800.



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Tate Unger and other Minneapolis Heart Institute® staff wrote an article about integrating therapeutic hypothermia treatment in a catheterization lab while preserving door-to-balloon times (*Cath Lab Digest*, November 2009). "We've demonstrated that we can do both – treat the blockage with a balloon catheter and apply a cooling device within six minutes. That has really gotten the attention of cath labs around the country," she said.

Mooney noted that the Minneapolis Heart Institute®'s accomplishments in this area



Barb Tate Unger, RN, and Michael Mooney, MD

reflect Minnesota's well-organized and highly collaborative health care environment. "There is a spirit of cooperation that helps us do what's best for patients."

Emergency medical services (EMS) and nursing leadership have also been important to program development. "We have excellent EMS in Minnesota, and the nursing leadership here is very capable, whether it's in the Emergency Department in a community hospital or the nursing leaders at the Minneapolis Heart Institute® and Abbott Northwestern Hospital who have implemented the program."

"YOU CAN'T STOP AT THE CATH LAB"

The Miracle on Ice conference also highlighted the need for centers that offer this level of service to develop a comprehensive response, from pre-hospital care to neurological rehabilitation.

"You can't stop at the cath lab," said Tate Unger. "You need the team of cardiology and neurology specialists who can provide immediate diagnostic and treatment support, all the way through to a neurocognitive recovery plan."

The conference included speakers reflecting a range of disciplines and interests, including cardiology, nursing, neurological critical care and rehabilitation. "I think the conference

participants appreciated the discussions and interaction about caring for a cardiac arrest patient from the EMS, ED, hospital and rehabilitation perspective," said Mooney. "It's very clear that this is a story that needs to be told from multiple perspectives if you are going to get it right."

About the Cool It Program

Cool It is a facilitated collaboration among cardiologists, emergency medicine and intensive care physicians, EMS, critical care nurses and pharmacists to treat cardiac arrest patients with therapeutic hypothermia. It includes a systematic approach and a standardized protocol to apply cooling as soon as possible after cardiac arrest and safely manage patients throughout their treatment and recovery. About half of Cool It patients are treated as part of Abbott Northwestern's Level One Heart Attack Program. It is the first program in the country to provide emergency angioplasty and therapeutic hypothermia at the same time. For more information about Cool It, call 612-863-3900 or visit mplsheart.com.

Managing Heart Failure: A Conversation with David Feldman, MD, PhD

While advances in technology, drug therapies and surgical interventions have improved care and extended lives for those with heart failure, David Feldman, MD, PhD, believes that the importance of early intervention and primary care in managing heart failure can't be overlooked.

That's why Feldman's clinical practice and research interests focus on the polar ends of the disease spectrum: slowing the progression of heart disease to delay or prevent heart failure and managing difficult heart failure and end-stage disease.

Feldman joined the Minneapolis Heart Institute® in 2009 as the medical director of the Heart Failure, Ventricular Assist Device (VAD) and Cardiac Transplant Program. He was the director of the Heart Failure and Cardiac Transplant Program at Ohio State University Medical Center for six years before moving to Minnesota. He received his medical training at Washington University in St. Louis, Mo., and Duke University in Durham, N.C., and he has a doctorate in molecular biology.

HEART FAILURE: A GROWING POPULATION WITH COMPLEX NEEDS

As a heart failure/transplant specialist with a commitment to collaborating with primary care physicians, Feldman is acutely aware of



the challenges that primary care physicians face in caring for patients with heart failure.

“For one thing, there is a huge population of heart failure patients,” he said, noting that there are nearly 700,000 new cases of heart failure diagnosed each year. “The other challenge is that heart failure patients require a significant amount of time. Most primary care practices are not set up to provide 30 to 60-minute appointments, yet that is what these patients often need.

“And that's what we can offer to our primary care colleagues. By working collaboratively with us, the primary care physician can maintain those relationships with the heart failure patients when they are doing well, and we'll welcome the patients back when they are not doing well.”

Treating heart failure is also complicated by a lack of awareness about the condition and its effects. Feldman said that many people mistakenly believe that all heart failure can easily be managed with a medication. “With heart failure, one of the things that people often forget is the very significant mortality. In fact, the heart failure mortality rate exceeds that of HIV-AIDS and most cancers. Class III heart failure has a one-year mortality rate of 10 to 30 percent; after five years it is 50 percent.”

Because of the significant mortality rate, Feldman said that he and his colleagues welcome referrals “earlier, rather than later.” He also noted that in addition to medications, heart failure specialists at the Minneapolis Heart Institute® can offer clinical trials, stem cell therapy, specialized surgeries, ventricular assist devices and cardiac transplantation.

AGGRESSIVE MANAGEMENT IN EARLY STAGE HEART DISEASE

The high mortality rate also drives Feldman's interest in aggressive management of hypertension and other heart failure risk factors. He has published articles in the *Journal of Family Practice* and other peer-review journals addressing the issues of patient compliance and optimal blood pressure management in the primary care setting.



David Feldman, MD, PhD

“The fact is, 75 percent of heart failure patients have hypertension before they develop heart failure,” said Feldman. “With the high number of new heart failure cases each year, we need to make every effort to stop heart disease from progressing to heart failure.”

Feldman has also been involved in supporting the systems that the Minneapolis Heart Institute® has developed to respond to cardiac emergencies. He noted that the broad experience and specialized expertise that heart failure/transplant specialists bring to managing critically ill patients complements the work that the Minneapolis Heart Institute® is doing in managing patients who arrive in cardiogenic shock and are treated with therapeutic hypothermia.

“The bottom line is that transplant specialists are cardiac intensivists,” Feldman said. “We tend to cast a wider net because we have to provide several levels of care for all post-transplant patients.”



When to Refer a Patient for Heart Failure Consultation

The Center for Advanced Heart Failure Treatment is dedicated to helping primary care physicians manage their heart failure patients while remaining an integral part of the patient's health care team.

Patients referred to the Center benefit from a continuum of care that ranges from diagnosis and patient/family education to comprehensive medical and surgical management that integrates traditional treatment options with those on the forefront of technology. Physicians also have expertise in caring for high-risk patients with obstetric or oncology needs, those with a history of congenital heart disease, patients with pulmonary hypertension and patients who appear to have no other options.

CONSIDER A REFERRAL IF A PATIENT HAS:

- two or more heart failure hospitalizations in a year
- class IV heart failure symptoms
- an ejection fraction less than 30-35 percent
- a history of ventricular fibrillation or ventricular tachycardia
- decreasing medication tolerance with time (hypotension)
- required the use of an inotrope in the last year.

For more information, call 612-863-3900.

National Leader in Cardiovascular Care Retires from the Minneapolis Heart Institute®

The Minneapolis Heart Institute® marked the retirement of one its founders and one of the foremost cardiologists in the world. Robert Van Tassel, MD, retired in January after a 37-year career of cardiovascular leadership.

Van Tassel served thousand of patients at the Minneapolis Heart Institute®, has authored and co-authored more than 50 scientific publications and has made innumerable scientific presentations. He holds 12 patents in the medical device field and has been a founder of seven medical device companies in Minnesota. He also has overseen the growth of the Minneapolis Heart Institute® and the Minneapolis Heart Institute Foundation and spearheaded the campaign that raised \$55 million for construction of the Heart Hospital.

“While clinical excellence is the standard that Dr. Van Tassel set from day one for the Minneapolis Heart Institute®, his innovation in numerous arenas has set another standard that we all will strive for in our careers,” said Kevin Graham, MD, president of the Minneapolis Heart Institute®. “Patients worldwide have benefited from his groundbreaking welding of clinical expertise and technical innovation.”

New Physicians at the Minneapolis Heart Institute®

JASON ALEXANDER, MD, joined the Vascular/Endovascular Surgery Department at the Minneapolis Heart Institute®. Previously, Alexander was with the Vascular and Endovascular Therapy division of the General Surgery Department at Kaiser Permanente® Oakland Medical



Center. He also served as a site director at the University of California San Francisco – East Bay in the General Surgery Residency Program and was co-director of the Northern California Vascular Malformations Clinic. He attended the University of Minnesota Medical School, and completed a residency at Huntington Memorial Hospital in Pasadena, Calif., followed by a fellowship at the Vascular and Endovascular Surgery Division of the University of Southern California. He has won several resident research awards and was named Teacher of the Year at UCSF-East Bay General Surgery.

BARRY CABUAY, MD, joined the Minneapolis Heart Institute®'s as co-director of the Heart Failure, VAD and Cardiac Transplant Program and director of Pulmonary Hypertension. He most recently was at the University of Iowa Hospitals and Clinics in Iowa City, Iowa, where he served as director of



Clinical Research, Cardiomyopathy Treatment Program, medical director of Cardiac Transplant, and co-director of the Pulmonary Hypertension Program. Cubuay completed an externship in Heart Failure and Cardiac Transplant at the Cleveland Clinic Foundation in Cleveland, Ohio and a cardiovascular medicine fellowship at the University of Iowa. He completed an internal medicine internship and residency and earned his medical degree at the University of Louisville Affiliated Hospitals in Louisville, Ken.

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The Summit: Eliminating Untimely Deaths of Women from Heart Disease

April 29

Marquette Hotel – Windows on Minnesota
Minneapolis, Minn.

For information: 612-863-3816.

Landmarks in Cardiology

Thursday-Friday, June 3-4

Thursday-Friday, Oct. 7-8

Topics:

Congestive Heart Failure: Case Reviews

Electrophysiology Update: Indications and Management of Patients

Vascular Update: Carotids/AAA/Endovascular

New Imaging Technologies: CT & MR

Prevention Update

Level 2 and Beyond

For information: 612-863-6986 or kris.flanagan@allina.com.

Evening of Cardiology (Dates may change)

Thursday, Sept. 23 – Alexandria, Minn.

Thursday, Sept. 30 – Waconia, Minn.

Thursday, Nov. 11 – Grand Rapids, Minn.

Thursday, Nov. 18 – Crosby and Aitkin, Minn.

Thursday, Nov. 30 – Northfield, Minn.

For information: 612-863-6986 or kris.flanagan@allina.com.