Miami Valves 2020 Explores Innovative Cardiac Treatment Strategies with an International Perspective

Advances in therapies for structural cardiology were highlighted at Miami Valves 2020, a three-day conference on structural cardiology and associated symposia on percutaneous coronary intervention and electrophysiology, presented by the University of Miami International Medicine Institute at the Miller School of Medicine, and the University of Miami Health System. This is the 18th year of the conference, which has evolved with new technologies and techniques in the field of cardiology from its inception in 2002 as the “Miami International Revascularization Summit.”

Dr. Eduardo de Marchena
“Interventional cardiology is constantly evolving,” said conference director Eduardo de Marchena, M.D., professor of medicine and surgery, associate dean for international medicine, program director of the Eberhard Grube International Structural Heart Training Program, and director of interventional cardiology at the Miller School. “New tools to treat valvular and structural heart disease are being developed at a rapid pace. We also learn from our colleagues about best practices and the optimal use of our current tools.” Some of these innovations were brought to Florida by the UM International Medicine Institute as part of clinical trials.

More than 350 professionals from North and South America, Europe, Australia and Asia attended Miami Valves 2020, held January 16-18 at the Marriott Miami Biscayne Bay. The conference metrics reflected the breadth of the field, with attendees representing 81 academic institutions and private medical practices drawn from 23 U.S states and 13 countries. Additionally, there were 55 faculty and 60 industry representatives from 30 different companies. The oral abstract and poster presentation sessions featured more than 50 abstracts by Miller School students, residents and fellows as well as national and international universities.

The plenary sessions were in structural cardiology, and Dr. de Marchena restructured the program to be case based with didactic lectures supported by challenging cases presented by the faculty. This new program gave the audience valuable insight from the thought leaders in the field in popular sessions such as “Challenging Cases from Master Operators” and “My Ugliest TAVR.”
Percutaneous Coronary Intervention Symposium

The conference included a Percutaneous Coronary Intervention (PCI) Symposium directed by Mauricio G. Cohen, M.D., professor of medicine and director of the Cardiac Catheterization Laboratory, and an Electrophysiology Symposium directed by Raul D. Mitrani, M.D., professor of clinical medicine and director of clinical cardiac electrophysiology.

“We had a very informative PCI symposium at Miami Valves with excellent presenters from Emory University, Pennsylvania State University, Columbia University, University of Hawaii, and UT Southwestern University,” said Dr. Cohen. “We discussed important topics, such as the management of left main coronary disease, cardiogenic shock and chronic total occlusions.”

Wissam Jaber, M.D., from Emory University, shared his vast experience in the management of pulmonary embolism with catheter-based treatments, and Subhash Banerjee, M.D., of the University of Texas Southwestern, discussed what cardiologists should know about peripheral vascular interventions. “The symposium was a complete success,” said Dr. Cohen. “The room was completely full, with people standing in the back.”

Ali Ghodsizad, M.D., Ph.D., assistant professor of surgery, led the first pre-conference symposium on mechanical and circulatory support for the heart.

“The symposium was a huge success,” said Dr. Ghodsizad, who created the session with Dr. de Marchena and Matthias Loebe, M.D., Ph.D., the Miller School’s program director for thoracic transplantation and mechanical circulatory support. “The meeting focused on hands-on MCS and TAVR training in 2020.”
Joseph Lamelas, M.D., chief of cardiothoracic surgery, showed innovations in minimally invasive cardiac surgery at a Friday panel session on challenging heart valve cases. “Surgery will always be an option, and in some patients it may be the only option,” he said. “I am a member of the ‘save the sternum society’ and use a minimally invasive approach even with high-risk patients.”

**Latin American Perspectives**

Drawing on the UM International Medicine Institute’s deep relationships with Latin American institutions, Miami Valves 2020 featured leading clinicians and researchers from the region.

Antonio Dager, M.D., from the Angiografia de Occidente of Cali, Colombia, a participant in Miami Valves since its inception, presented new techniques in treating patients with pure aortic insufficiency.
Temistocles Diaz, M.D., of Panama, presented several cases and a new catheter designed to improve cardiac efficiency in patients with advanced heart failure. “We are planning a clinical trial in the United States with more than 250 patients, and are eager to see the results,” said Dr. Diaz.

Other panelists discussed the first clinical use of Millipede’s Transcatheter IRIS Complete Annuloplasty Ring at the Italian Hospital in Asuncion, Paraguay. Two patients suffering from clinically significant mitral valve regurgitation and heart failure were successfully treated using the catheter-based system. Since then, Millipede has been acquired by Boston Scientific.

Lifetime Achievement Award

On Thursday, a Lifetime Achievement Award was presented to William W. O’Neill, M.D., medical director of structural heart disease at Henry Ford Health System in Detroit. Since an early trial in 1980, Dr. O’Neill has been a leader in interventional cardiology. He is also the former executive dean for clinical affairs at the Miller School.

“We have to balance the scientific and clinical perspectives,” Dr. O’Neill said in a Thursday talk. “Sometimes that means putting new devices in patients with the highest risks. But if we don’t get the science right, we will continue to argue about how best to treat patients. As clinical scientists, we have to find an ethical balance in managing our patients.”

Presenting Challenging Cases

Throughout the conference, specialists presented a wide range
of challenging cases, involving calcification of the valves, difficult anatomies, and other issues, including one session on “My Ugliest Structural Cases.”

Camilo Gomez, M.D, Eberhard Grube International Structural Heart fellow at UM, presented a case not previously reported in the literature of an aortic valve-in-valve for a direct flow prosthesis failure.

A Miller School fellow, Paul Olorunfemi, M.D., presented the case of a woman with Chagas disease who developed a severe mitral valve problem and was on a continuous IV medicine to keep her heart pumping. After a mitral clip was inserted, she was able to be taken off medication and is now living independently.

Saibal Kar, M.D., from Los Robles Hospital and Medical Center in Thousand Oaks, California, presented a follow-up on the COAPT Trial with his presentation: “What Have We Learned from Mitral FR and COAPT at 3 Years? What Patients are More Likely to Benefit from Edge to Edge Repair?”

Brijeshwar Maini, M.D., of Florida Atlantic University, discussed the use of the Carillon mitral repair valve in a 67-year-old female patient with non-ischemic cardiomyopathy. The Carillon clinical trial is ongoing at UM and is currently enrolling new patients. Dr. Cohen is the principal investigator.

Nicolas Van Mieghem, M.D., Ph.D., from Erasmus Medical Center in Rotterdam, The Netherlands, said he appreciated the case-focused sessions. “They spurred discussions among the expert panelists, getting us thinking about different ways of
approaching patients with valve issues,” he said. “Along with the excellent lectures, the focus on these interactive cases makes Miami Valves a unique learning experience.”

**Advances in TAVR**

Dr. de Marchena opened the conference with a discussion on advances in transcatheter aortic valve replacement (TAVR), including new devices designed to treat aortic, mitral and tricuspid valve problems. For instance, manufacturers have developed self-expanding mitral valves and are adding “skirts” to replacement aortic valves to reduce leaks and regurgitation.

“The most important study in our field last year showed that TAVR interventions are as safe or better than conventional surgical treatment,” said Dr. de Marchena, referring to a multicenter study, “Transcatheter Aortic Valve Replacement with a Self-Expanding Valve in Low-Risk Patients,” published last March in the *New England Journal of Medicine*. “We are offering this procedure to qualified patients with severe aortic stenosis who are considered low risk for open heart surgery,” he added. The study’s lead author and principal investigator, Jeffery Popma, M.D., of Beth Israel Deaconess Medical Center, presented on “TAVR for Low Risk Aortic Stenosis Patients” along with an expert panel.

Since being approved for extreme-risk patients in 2012, TAVR procedures now include intermediate- and some low-risk patients, with 63,361 cases reported in the U.S. in 2018. “We have seen 390 percent growth in the U.S. since 2014,” said Dr. de Marchena. “Very few other things are growing that fast, not even the stock market.”
While outcomes have improved significantly, Dr. de Marchena noted that 92 percent of TAVR patients are white, with only 4.1 percent black and 5.2 percent Hispanic. “This is a glaring health disparity that needs to be addressed,” he added.

He also noted considerable progress in tricuspid valve therapy, including the development of a TriValve Registry. “Patients are improving significantly with this valve-clipping technology,” he said.

During the following panel discussion, Dr. Van Mieghem highlighted the benefits of 3D printing and virtual device implantation. “This technology allows you to better determine the sizes of the orifices and the best way to anchor devices without creating obstructions,” he said.

**Surgical Approaches**

Noting the importance of patient-centered care, Dr. de Marchena said TAVR has fostered collaboration among the Miller School’s multidisciplinary heart team. “Our cardiologists work very closely with our surgeons, passing cases back and forth, depending on what’s most appropriate for that individual.”

For example, Dr. Lamelas said minimally invasive surgery can effectively treat patients with significant calcification surrounding the mitral valve, bicuspid valve issues or problems with the ascending aorta. “Younger patients with degenerative valve disease can benefit from a mitral valve repair,” he added. “While a typical heart surgeon might do five of these cases a year, our UHealth team does about five to 10 valve repair procedures every week.”
Addressing Atrial Fibrillation

Dr. Jeffrey Goldberger speaks at Miami Valves.

At Friday’s Electrophysiology Symposium, Jeffrey J. Goldberger, M.D., M.B.A., chief of the Cardiovascular Division at UM, discussed risk factor modification strategies for controlling atrial fibrillation (AFib). “Managing this heart rhythm disorder is an important part of treatment for patients with heart valve disease,” he said. “Ablation is the best tool we have now, but it is only successful in about 50 percent of patients.”

Alternatively, Dr. Goldberger suggested a physician-led program to manage patients’ weight, sleep apnea, hypertension, diabetes, hyperlipidemia, and exercise. He cited studies from Australia that show weight loss can reduce the severity of AFib symptoms.

Currently, Dr. Goldberger is co-leading a Miller School study on the use of liraglutide, a weight-loss medication to reduce
epicardial fat. Thirty patients will receive the medication and the other 30 will receive liraglutide and a risk factor modification program. “We believe that weight loss can play a role in reducing AFib risk,” he said. “We are excited about what we will learn from this study.”