Aortic and Mitral Valves

Percutaneous valve therapy is one of the most exciting developments in cardiovascular medicine. This issue highlights developments in transcatheter aortic valve implantation (TAVI) and percutaneous mitral valve repair.

Our feature begins with an update on transcatheter aortic and mitral valves by Alain Cribier, MD; Vasilis Babaliaros, MD; and David Liff, MD. This article provides an overview of valves that are currently available and the latest findings on those that are still under investigation.

Martyn Thomas, MD, FRCP, examines TAVI using the Edwards Sapien device (Edwards Lifesciences, Irvine, CA) for treating patients with symptomatic aortic valve stenosis. On the other side of the table, we have the latest data on the CoreValve revalving system (Medtronic, Inc., Minneapolis, MN) by Jeffrey J. Popma, MD; Roger Laham, MD; Robert Hagberg, MD; and Kamal Khabbaz, MD. Both articles report on new device developments and trial data, as well as indications for proper patient selection, approaches to access, and a comparison to surgical implantation for the Sapien and CoreValve devices, respectively.

Comprehensive patient screening is key to TAVI success because it is imperative to be aware of any challenging vascular anatomy before intervention. Itsik Ben-Dor, MD; Gabriel Maluenda, MD; Ron Waksman, MD; Lowell F. Satler, MD; Gaby Weissman, MD; Nelson Puig; and Augusto D. Pichard, MD, share their insights on the proper imaging modalities and signs of suitable anatomy in order to select appropriate patients to undergo a TAVI procedure.

Over time, as valves begin to degenerate in situ, many interventionists are turning to TAVI procedures to implement a valve-in-valve technique. Lucas W. Henn, MD; Raj R. Makkar, MD, FACC, FSCAI; and Gregory P. Fontana, MD, FACS, FACC, describe this mode of prosthetic aortic and mitral valve repair.

As an alternative to prosthetic valves, the MitraClip system (Abbott Vascular, Santa Clara, CA) is a novel transcatheter approach to treating heart valve disease. D. Scott Lim, MD, shares data from the EVEREST trials that are hoped to demonstrate that this device is a safe percutaneous option for patients who are too high risk for a surgical approach. To this end, Mehmet Cilingiroglu, MD, FESC, FACC, FSCAI; Gretchen Gary; Michael H. Salinger, MD, FACC, FSCAI; and I provide a detailed description of how to perform percutaneous mitral leaflet repair using the MitraClip device with the aid of advanced imaging modalities.

Wes R. Pedersen, MD, FACC, FSCAI; Irvin F. Goldenberg, MD, FACC, FSCAI; and I demonstrate the many valuable applications of balloon aortic valvuloplasty in surgical and TAVI procedures and as a standalone technique to treat aortic valve stenosis in an ever-growing elderly patient population.

In this issue, we also have a focus on lesion assessment. Salman A. Arain, MD, describes contemporary fractional flow reserve and what the FAME study tells us about how this practice may benefit patients with multivessel coronary artery disease. Also, Sahil A. Parikh, MD, and Marco A. Costa, MD, PhD, explain the background and potential clinical applications of OCT (optical coherence tomography) in assessing atherosclerotic plaque and percutaneous stent placement.

For our featured interview, David G. Rizik, MD, discusses the possible future direction of drug-eluting stent and lipid-scanning technology, as well as his role as the founder and Medical Director of the Scottsdale Heart Group.

As has always been our goal, we hope to bring timely updates on advances in interventional cardiology. These reviews will provide a synthesis of the vast literature that comes across our desks every month. We look forward to hearing from you about topics we might cover in the future. ■

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