Transcatheter Solutions for Mitral/Tricuspid Valves


The COVID-19 pandemic will certainly be remembered as the most distinctive and dramatic event of 2020. It has durably changed our everyday life, as well as professional roles and expectations. Although several articles of this issue focus on the versatility of interventional cardiology during the still ongoing pandemic, the remaining reports are dedicated to what represents the next frontier of our subspecialty: the percutaneous treatment of the atrioventricular valves.

In contrast to the now well established technique of transcatheter aortic valve replacement, percutaneous management of mitral and tricuspid valves is fraught with substantial anatomic variability, varying pathophysiologies, challenging imaging, distinct learning curves to reach procedural proficiency, and even contradictory data. This milieu continues to promote not only a level of uncertainty that still surrounds these procedures but also immense excitement in tackling the challenges ahead to mature these technologies. Moving forward, one can appreciate that several treatment modalities, including leaflet approximation, (direct or indirect) annuloplasty, and valve replacement, will likely be needed in our procedural armamentarium to fully address the needs of this still undertreated heterogeneous population of patients.

Despite the necessary constraints dictated by the development of the pandemic, important milestones have already been reached this year in this domain. Fueled by encouraging results, both the TriClip (Abbott) and the Pascal (Edwards Lifesciences) systems have obtained CE Mark approval almost simultaneously for treating tricuspid regurgitation. Additionally, after several years of experimental and clinical development, the Tendyne (Abbott) transapical system was approved last February in Europe as the first commercial transcatheter mitral valve replacement system. The United States and Canada have also benefitted from these recent advancements, with the approval of the fourth generation of the MitraClip (MitraClip G4; Abbott) for limited commercial use.

Despite ongoing technical refinements across a range of percutaneous mitral and tricuspid technologies, complexity and broader applicability remain as challenges. This issue of *Cardiac Interventions Today* provides an updated overview of the most recent developments and applications concerning the interventional treatment of the atrioventricular valves.

We begin our Mitral and Tricuspid coverage with an article by Andreas Schaefer, MD, and Lenard Conradi, MD, who discuss the emerging role of transcatheter mitral valve implantation (TMVI) in clinical practice. They provide an analysis of treatment options for mitral regurgitation and discuss how TMVI can complement and extend the current therapeutic options for mitral valve disease.

Faeez M. Ali, MD, and Neil P. Fam, MD, review the recent technical advancements of transcatheter mitral valve repair as well as its advantages and limitations compared to TMVI.

Our focus on tricuspid interventions begins with a discussion by Karl-Patrik Kresoja, MD, and Philipp Lurz, MD, on how and when various imaging modalities should be used during transcatheter tricuspid valve intervention and the anatomic and clinical characteristics that help guide patient selection. Laura Young, MD; Samir R. Kapadia, MD; and Amar Krishnaswamy, MD, then provide us with a look at the anatomic challenges and transcatheter solutions for tricuspid regurgitation.

As part of our COVID-19 coverage, Sara C. Martinez, MD, shares her center's experience in dealing with the pandemic on the front lines, focusing on what changes had to be implemented to deal with the changed world within the cath lab.

Our Today's Practice article focuses on adaptability as a permanent attribute of health care, making the case that creating a culture of adaptability emanates from leadership embracing change.

We close with an interview featuring Alaide Chieffo, MD, who offers insight into the COVID-19 pandemic, cardiovascular complications from the virus, advice for cath labs, and more.

We hope that you find this issue to be a timely and valuable addition to your practice. ■

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