

## Editorial

## Transcatheter interventions in valvular heart disease

## Intervenções transcater em doenças cardíacas valvares

In recent years, transcatheter valve implantation and repair have shown to be promising treatments for valvular heart disease in patients considered inoperable or of high surgical risk. Transcatheter aortic valve implantation (TAVI) in patients with severe aortic stenosis has demonstrated its non-inferiority when compared to surgery in patients with considerable surgical risk, and its superiority when compared to medical treatment in patients with prohibitive surgical risk. The MitraClip™, the only percutaneous device approved for clinical use in the treatment of degenerative or functional severe mitral regurgitation, has shown to be non-inferior when compared to surgery in patients with high surgical risk, or medical therapy in patients with excessive surgical risk.

Technical device improvements and advances in the cardiac imaging area, especially multislice computed tomography and three-dimensional transesophageal echocardiography have been essential in obtaining encouraging results and expanding the indication of transcatheter procedures.

In this context, the current issue of *Revista Brasileira de Cardiologia Invasiva (RBCI)* brings two special editorials: one that addresses one of the most feared complications of TAVI, coronary obstruction during the procedure, the subject of the case report by Furini et al., from Hospital São Francisco da Santa Casa de Misericórdia in Porto Alegre (RS), and another one that explores the results of MitraClip™ use in a pioneering procedure in our country by Brito Jr. et al., from Hospital Israelita Albert Einstein, in São Paulo (SP).

Terré, Sergie and Dargas, from Columbia University Medical Center and Mount Sinai Medical Center, both in New York, United States, in their editorial, perform an actual review of post-TAVI coronary obstruction, addressing its incidence, causes, typical and atypical clinical manifestations, and consequences. Additionally, they explore the constellation of clinical, anatomical and procedural predictors, which play different roles in each case; the essential contribution of multislice computed tomography and three-dimensional transesophageal echocardiography in identifying high-risk situations for obstruction; and when and how to use coronary protection measures. This is a must read and indispensable to all those interested in the subject.

Attizzani and Tamburino, from Hospital Ferrarotto, University of Catania, Catania, Italy, a pioneer group in the use of MitraClip™ in that country, in their editorial, recall the still unmet need to offer transcatheter procedures for patients with severe mitral regurgitation at high surgical risk, and the sustained benefits of this device in the long term, especially regarding quality of life. They recall the results of the groundbreaking Everest II study, the several registries

that have expanded the indications of the procedure for more complex anatomies, as well as the studies that have identified predictors of procedural failure and adverse events in the long term. They also mention the implantation of balloon-expandable prosthesis in the mitral position, a procedure that has been performed in only a few cases in human subjects.

This issue also features original articles from three different institutions that explore the results of primary percutaneous coronary intervention in different subgroups, as well as manuscripts assessing several aspects related to the treatment of coronary disease, such as the influence of previous statin use on percutaneous coronary intervention outcomes in acute coronary syndrome; the comparison of results of a hybrid stent that elutes sirolimus with the results of an everolimus-eluting one; and the prevalence, etiology and characteristics of patients with type-2 acute myocardial infarction.

We also have articles showing the results of percutaneous interventions in structural heart diseases, such as the results of TAVI in patients with and without left ventricular dysfunction and the use of covered stents to treat certain morphological variations of aortic coarctation or complications arising from bare-metal stent implantation in this scenario. Two articles contribute to the results in the imaging area, with the validation of a new three-dimensional reconstruction model of coronary arteries combining intravascular ultrasound and conventional angiography and the comparison of differences between the systolic and diastolic dimensions of the aortic valve annulus in CT angiography in patients undergoing TAVI.

Finally, one of the original articles is noteworthy due to the originality and theme. That is the article by Staico et al., which reports the promising results of renal sympathetic denervation in patients with implantable cardioverter-defibrillators hospitalized for electrical storm. The procedure significantly reduced the burden of arrhythmias, the over-stimulation and shock in the 30-day follow-up. These results complement those from other neuromodulation procedures, as an emerging strategy for the treatment of arrhythmias triggered by sympathetic nervous system alterations.

Enjoy your reading!

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