Editorial

New generation devices for transcatheter aortic valve replacement

Dispositivos de nova geração para substituição da válvula aórtica transcateter

Transcatheter aortic valve replacement (TAVR), performed for the first time in 2002 by Alain Cribier, is the approved treatment for patients with symptomatic severe aortic stenosis who are inoperable or at high risk for surgery. Recently, TAVR has been evaluated in the subgroup of patients with intermediate risk.

Despite the favorable evolution of first-generation devices, some issues, such as prosthesis malapposition, paravalvular regurgitation, conduction abnormalities and vascular complications have motivated the development of second-generation systems, which incorporate a series of advances aimed to solve these problems.

Currently, devices such as Corevalve Evolut R™ (Medtronic, Minneapolis, USA), SAPIEN 3 (Edwards Lifesciences, Irvine, USA), the Lotus Valve System™ (Boston Scientific, Natick, USA), and ACURATE TA™ (Symetis SA, Ecublens, Switzerland), among others, have allowed a precise positioning and significantly reduced paravalvular regurgitation.[1] Esteves et al., representing seven Brazilian institutions, present in this edition the first series of patients treated with the Lotus™ valve, which can be recaptured and repositioned at any stage of the intervention and has a seal at the base, which minimizes paravalvular regurgitation. The procedures were performed through the transfemoral route, and the success rate was close to 100%. The mean gradient after implantation was low, and no moderate/significant residual aortic regurgitation was observed.

Yücele and Gerckens, from Herzzentrum, Universitätsmedizin Rostock (Rostock, Germany), in a related editorial, resume major studies in the area, including those with the Lotus™ device, such as REPRISE III and RESPOND. They reinforce the challenges this prosthesis still needs to overcome, such as reducing the sheath size (18 to 20 F) and reducing the need for pacemaker implantation, which occurs in approximately 30 to 40% of cases.

Another article of great interest comes from Irmandade da Santa Casa de Misericórdia de Marília (Marília, SP, Brazil). In this study, Andrade et al., with broad experience in the use of radial vascular access, performed a subanalysis of the ARISE (AngioSeal versus the Radial approach In acute coronary SyndromE) study, which randomized patients to the radial or femoral techniques using a vascular occlusion device. In this substudy, body mass index and the vascular occlusion device failure were independent predictors of complications. Female patients or patients at high or very high risk, according to the CRUSADE study criteria, showed an increased risk of vascular complications only in the femoral group.

Lamelas and Jolly, from McMaster University (Hamilton, Canada), in their editorial, recall the increased risk of bleeding in patients with acute coronary syndrome submitted to the invasive strategy, as well as its association with higher mortality. Lamelas and Jolly further comment on the results of the MATRIX study, which showed the benefit of the radial access in reducing mortality, and the CLOSURE study, which randomized patients to the occlusion device and manual compression, demonstrating a reduction in vascular complications with the device. They conclude that the radial access is the best approach for the prevention of vascular complications during percutaneous coronary intervention and that, if the femoral access is required, an occlusion device should be applied by qualified interventionists.

Also in this issue, Mariani et al., from Faculdade de Medicina, Universidade de São Paulo (São Paulo, SP, Brazil), present the 1-year follow-up of the MOZART study, which demonstrated that the use of intravascular ultrasound to guide the percutaneous coronary intervention decreases the contrast volume used in the procedure. Silva et al., from Instituto Dante Pazzanese de Cardiologia (São Paulo, SP, Brazil), compare the clinical outcomes of saphenous vein graft treatment with MGuard™ stents vs. drug-eluting stents. The MGuard™ stent is coated with a microscopic polymer mesh aimed at reducing distal embolization of fragments during percutaneous coronary intervention. Mangione et al., from Hospital Beneficência Portuguesa de São Paulo (São Paulo, SP, Brazil), evaluated the early and late outcomes of isolated proximal left anterior descending artery lesions treated with second-generation drug-eluting stents. D'Ávila et al., from Instituto de Cardiologia/Fundação Universitária de Cardiologia (Porto Alegre, RS, Brazil), extracted from their large acute myocardial infarction database the characteristics and 30-day clinical outcomes of patients aged ≥ 80 years submitted to primary percutaneous coronary intervention. Cantarelli et al., from Hospital Bandeirantes (São Paulo, SP, Brazil) present the independent predictors of multivessel coronary artery disease obtained from the Angiocardio Registry analysis. Finally, Assaf et al., from Hospital Carlos Fernando Malzoni (Matão, SP, Brazil), compare the results of conventional compressive dressings vs. wristband devices after radial catheterization.

Enjoy your reading!

Reference

1. Tchetche D, Van Mieghem NM. New-generation TAVI devices: description and specifications. EuroIntervention. 2014;10Suppl U:U90-U100.

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DOI of original article: http://dx.doi.org/10.1016/j.rbci.2017.01.002