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Transcatheter aortic valve implantation for Chinese patients with bicuspid aortic valve

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doi:10.1631/jzus.B1500063

The recent paper by the corresponding author Jian-an WANG and his team entitled “Evaluation of the safety and efficacy of transcatheter aortic valve implantation in patients with a severe stenotic bicuspid aortic valve in a Chinese population” (Liu *et al.*, 2015), published in the *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology)*, is very impressive. They evaluated the safety and efficacy of transcatheter aortic valve implantation (TAVI) in patients with bicuspid aortic valve (BAV) and tricuspid aortic valve (TAV) for the first time in the Chinese population. This paper reported 40 cases of clinical experience of TAVI, and first explicitly put forward the indication of stenosis in the BAV. The early and mid-term outcomes between BAV and TAV groups are almost the same, and the high procedural success rate and low complication rate of their study are encouraging.

However, they found that the diameter of the ascending aorta in the BAV group (40.4 ± 4.4 mm) is larger than that in the TAV group. As we know, the BAV is often associated with ascending aortic dilatation that might be the result of hemodynamic changes and genetic backgrounds (Loscalzo *et al.*, 2007). Replacement of the ascending aorta is indicated in patients with a BAV who are undergoing surgical aortic valve replacement (SAVR) if the diameter of the ascending aortic is >45 mm (Erbel *et al.*, 2014). In

their study, patients with ascending aortic diameter >50 mm were excluded, but two patients with dilated ascending aorta (48.4 and 49.4 mm, respectively) who were evaluated as surgical high risk (advanced age and poor heart function, etc.) underwent TAVI. However, there is still no clear evidence about the remodeling of ascending aorta and long-term outcomes of BAV patients with dilated ascending aorta after TAVI treatment. Follow-up research of the diameter of the ascending aorta and survival in these patients will be necessary and also very interesting.

BAV is still deemed as a relative contraindication for TAVI (Vahanian *et al.*, 2012), while the corresponding author Jian-an WANG and his team noted that patients with a severely stenotic BAV can be safely and effectively treated by TAVI (Liu *et al.*, 2015). Meanwhile, 37.5% of the patients with BAV in their study were much higher than previous reports in Europe (3.0% to 9.2%) (Hayashida *et al.*, 2013; Bauer *et al.*, 2014). Therefore, evaluation of the safety and efficacy of TAVI in patients with a severe stenotic BAV in the Chinese population is valuable for clinical practice and clinical trials to expand the indication for TAVI.

Compared with TAV patients, SAVR is generally performed at a younger age and lower surgical risk among BAV patients (Michelena *et al.*, 2008; Lange *et al.*, 2012). The clinical trials of TAVI in the lower surgical risk and younger patients are ongoing, which might expand the indication for TAVI. Accordingly, this study should contribute to the application of TAVI in more patients with aortic stenosis in the future.

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