

Preface

Since the first in-man case was performed in 2002, transcatheter aortic valve implantation (TAVI) has been increasingly utilized, with rapid advancement in imaging and device technologies, implantation techniques and perioperative management. 30-day/in-hospital mortality and major complications of TAVI have dramatically decreased over this decade, and 5-year durability of transcatheter heart valves seems promising. TAVI has provided a new opportunity for curative treatment for inoperable or high-risk patients with severe aortic stenosis. Recent randomized controlled studies have shown excellent outcomes of TAVI in intermediate-risk patients and even in low-risk patients. The success of TAVI for aortic stenosis is likely to expand the indication of transcatheter therapy to aortic insufficiency, mitral and tricuspid valve diseases.

These transcatheter valve therapies are new opportunities for surgeons. Similar to aortic surgeons performing both surgical and endovascular therapies, heart valve surgeons should consider both surgical and transcatheter approaches to provide patients the best treatment option with the least biased decision-making. Unlike cardiologists, surgeons have all interventional options for aortic valve disease available, such as surgical aortic valve replacement (SAVR), aortic valve repair, transfemoral TAVI and surgical access TAVI. Although surgical approaches have been less frequently utilized in TAVI since the transfemoral delivery system has improved, they are a good starting point for surgeons to develop an interest in TAVI.

Additionally, surgeons should be aware that given the benefits associated with transcatheter therapies (e.g., lower mortality/morbidity, faster recovery, higher quality of life, higher hemodynamic performance, better durability), surgeries must now be performed at an even higher quality to compete. From that perspective, advanced surgical techniques and devices such as minimally invasive approaches, sutureless valves and annular enlargement may become more important tools for surgeons.

In this issue of the *Annals of Cardiothoracic Surgery*, renowned experts in TAVI and SAVR from the world have shared their personal work, experience and insights. The most recent TAVI studies and registries are reviewed, and pros and cons of TAVI are concisely described. Original and review articles covers bicuspid aortic valve, elderly patients, intermediate and low-risk patients, frailty, TAVI devices, regional data, minimally invasive surgery, sutureless valves, reoperative SAVR and economics. Surgical approaches of TAVI, TAVI for aortic insufficiency and valve-in-valve procedures are detailed. We hope that this issue will be of interest to all readers. I sincerely thank all authors and editorial staffs for their time and effort in completing this valuable issue.

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