How to Minimize TAVI Complications?

Kiyuk Chang, MD, PhD
Division of Cardiology
Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea

Since the introduction of upgraded devices into clinical practice, transcatheter aortic valve implantation (TAVI) is actively broadening its indication. After the PARTNER 3 trial clearly demonstrated that transfemoral TAVI resulted in a significantly lower rate of death and disabling stroke than surgical aortic valve replacement (SAVR) in severe aortic stenosis (AS) patients with intermediate surgical risk, attention is shifting into a bigger battle between TAVI and SAVR in low-risk population. To introduce TAVI in low surgical risk patients, some concerns should be clearly answered: 1. The TAVI procedure should be simple, standardized, and safe in most of cases. 2. The rate of more than moderate degree of paravalvular leakage and complete AV block requiring permanent pacemaker should be acceptably low. 3. The long-term durability issue should be more definitively answered. Of these, the TAVI procedure should be done safely without complications. However, the improvement in patient selection, imaging, procedural proficiency and TAVI devices has been alleviating our concerns more than expected.

Complications more specific to TAVI are valve malposition, paravalvular regurgitation, coronary obstruction, complete AV block, annular rupture and pericardial tamponade. Complications not specific to TAVI are iliofemoral artery injury or perforation, aortic dissection, or stroke. Proper patient evaluation is mandatory to be prepared and maintain a heightened awareness for possible complications that may occur during the procedure. Operators should have enough knowledge and techniques required for bail-out procedures at the time of emergency situation during TAVI. TAVI operators must keep in touch with cardiac surgeons for managing potential complications that may arise during TAVI.