

Fixing a Broken Heart

Transcatheter Aortic Valve Implantation



The National Heart Institute (IHN) has been at the forefront of treatment for heart diseases since 1992. We strive to provide the highest standards in cardiovascular and thoracic medicine for both adult and paediatric heart patients.

Traditionally heart valve repair and replacement have always been open-heart surgery. However, 30% of patients are deemed not suitable for surgery due to other associated medical conditions that make the surgery too risky to be performed. Transcatheter Aortic Valve Implantation (TAVI), is a new technology that enables aortic valve replacement percutaneously without surgery, using a catheter via the femoral artery in the leg. This minimally invasive procedure has a lower complication risk compared to surgery and allows high-risk patients to be treated. The recovery rate is also faster with less pain and smaller wound.



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TAVI OPENS A WHOLE NEW HORIZON OF TREATMENT POSSIBILITIES TO TREAT SEVERE AORTIC STENOSIS.

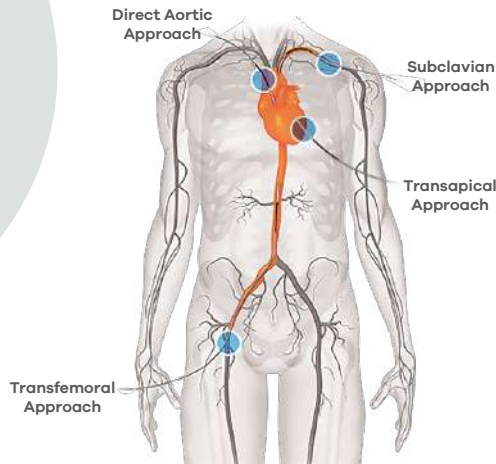


Figure 1.1 TAVI Access points

There are several devices currently available in the market. The device and delivery systems have undergone several improvements over the years. The procedure can also be performed under sedation and local anesthesia with the patient fully conscious.

“The members of the IJN team initially visited several TAVI hospitals including Vancouver, Melbourne, and Belfast to see how TAVI was being done,” Dr. Shaiful recollects.

IJN started the TAVI program on the 25th of November 2009. IJN was the first center in Asia to perform TAVI using the first self-expanding TAVI device. “At the time we had Dr. Ganesh Manoharan, Cardiothoracic Surgeons Dato Seri Dr. Mohd Azhari Yakub and Dato’ Seri Dr. Jeswant Dillon, Anesthesiologist Dato’ Dr. Mohamed Hassan Ariff, Dato’ Rosli Mohd Ali and me as part of the pioneer team,” recalls Dr. Shaiful Azmi. Dr. Ganesh Manoharan is the Consultant Cardiologist at Belfast’s Royal Victoria Hospital in Ireland, who traveled extensively all over the world to proctor the TAVI procedure.

Initially, it was done via the transfemoral approach where the catheter is inserted from the groin. Other approaches such as direct aortic, transapical, and subclavian approach are chosen for patients who are not suitable for the transfemoral approach.

Dr. Shaiful adds, “We mostly perform TAVI on elderly and high-risk patients who are unable to undergo open-heart surgery.”

The valves were funded by IJN Foundation for the first 20 patients. The Ministry of Health has agreed to fund underprivileged patients who are eligible under their *Tabung Kebajikan Pesakit*.

As the technology matures, newer TAVI devices have advanced significantly with better precision, outer sealing skirts, improved delivery systems, and enhanced sheath flexibility. Statistics have shown less percentage of paravalvular leakage and reduction in major vascular complications. However, TAVI is not without risks. “Majority of these high-risk patients who underwent TAVI procedure have renal failure, and less than 5% needed a pacemaker after the procedure,” cautions Dr. Shaiful.

Moving forward, we are now treating moderate and low-risk aortic stenosis patients using this TAVI method. This minimally invasive procedure to treat aortic stenosis has opened up the door to many treatment possibilities. We hope to treat more patients with severe aortic stenosis in the future.