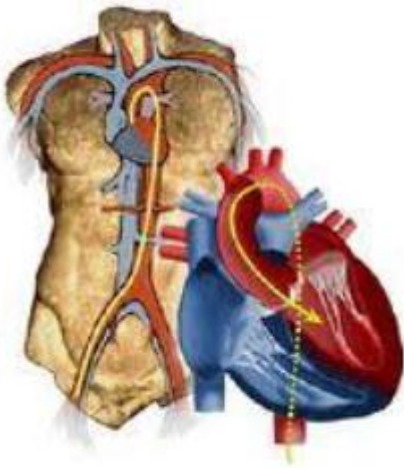


TAVR (transcatheter aortic valve replacement)

Significant aortic valve stenosis requires the replacement of the dysfunctional aortic valve with a metal or biologic prosthesis. Sometimes, due to the advanced age, the precarious function of the heart or associated conditions, the risks of the surgery involving valve replacement are very high.

This is the main reason for the development of this new, revolutionary technique of interventional treatment. The procedure involves **the percutaneous implantation of a prosthesis in aortic position (TAVI = transcatheter aortic valve implantation)**. TAVI represents an innovative method of treatment for patients with aortic valve stenosis who have contraindications for conventional surgery or who have clinic or comorbid conditions that make surgery highly risky. 20 years ago few cardiologists would have imagined that it was possible to replace the aortic valve through catheterism techniques, rather than the classical method, i.e. surgery that involves opening the thorax.

The procedure is performed through the collaboration of a complex medical team that includes a cardiologist, a cardiovascular surgeon and anaesthesiologist.



While the patient is under general anaesthesia or, in some cases, under conscious sedation, the doctors make either an arterial puncture to the femoral arteries or a puncture at heart tip through which they introduce the prosthesis and position it in the region of the dysfunctional aortic valve. Under transesophageal echocardiographic guidance, they install the prosthesis in the optimal position, after which it expands to its final form.



Even simpler, a balloon catheter with an auto-expandable alloy valve is inserted through the femoral artery and into the aorta and the aortic valve, in the opposite direction of the blood flow. The auto-expandable alloy valve is compressed in the catheter at 0 degrees and, when in contact with the body's warmth, it becomes extremely elastic and radially strong and it

settles in the place of the calcified native valve. Then the valve remains anchored to that place. The new valve can also be implanted through a small incision in the thorax and a puncture in the left ventricle.

This technique is extremely useful especially in the case of arteriopathic patients; in this case, the catheter might not be able to pass through the arteries of the leg or through the abdomen. The recovery period is shorter than in the case of classic surgical interventions and the results are similar.