Transcatheter autologous valve implantation

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When replacing an aortic valve with a mechanical prosthesis it is important to make the right decision, mine was on the Bicarbon Overline valve (SORIN Group) it is considered as a bilastraumatical mechanical valve designed for a Totally Supra-Annular implant. The second main design of this valve is highlighted by curved leaflets with an 80° opening angle and an aortic titanium housing profile leading to less turbulence, low gradients and limited thromboembolic events. The improved hemodynamic performances are reached also by the Totally Supra-Annular positioning meaning that no components of the valve are placed inside the annulus resulting in a maximization of the blood flow.

The low profile of the Bicarbon Overline makes the valve suitable for small aortic roots not dilated by an atherosclerotic coronary ostia, thus it does not require annulus enlargement. Thanks to the Totally Supra-Annular seating, Bicarbon Overline is ideal for Double Vascular Replacement (DVR) because it does not interfere with the mitral valve anterior part.

My experience with Bicarbon Overline is dated between September 2004 and June 2010 on 168 patients under going AVR. All patients were selected according to the Bicarbon Overline indications (SOCG) and the general database from La Princesa Hospital in Madrid (Spain).

In all patients, 12 months after the procedure, hemodynamic performances were favorable: satisfactory average effective orifice areas were associated with zero incidence of aortic prosthesis mismatch, and Peak and Mean transprosthetic gradients were 23.6 ± 11.8 and 12.9 ± 4.9mmHg, respectively. The clinical outcomes showed the Bicarbon Overline to be a reliable valve with a low early mortality rate (2.4%), high cumulative survival (91.7%) and freedom from any valve related events (93.3%) at 24 months.

With data collected from these experiences I can conclude that the Bicarbon Overline prostheses showed a good hemodynamic performance, no incidence of patient-prosthesis mismatch, and favorable early clinical results. It is a valuable choice for all patients undergoing AVR with a mechanical prosthesis and is to be considered extremely indicated in those patients who have a small annulus because, thanks to the Totally Supra-Annular positioning, the orifice area is not reduced by intra-annular valve components, thus resulting in a maximization of the blood flow.