BACKGROUND Portico valve is a second-generation self-expanding repositionable system with a nitinol stent frame and bovine pericardial leaflets, which is increasingly utilized for transcatheter aortic valve replacement (TAVR) in patients with severe native aortic stenosis at high risk of conventional surgery. In this report, we describe the procedural and early clinical results from an international multicenter registry of Portico implantation in patients with degenerated aortic bioprosthesis (Portico ViV).

METHODS Baseline demographics, procedural and clinical outcomes were collected on standard case report forms and by the Valve-in-Valve International Data network from 14 centers across three continents. Procedural endpoints included implantation success and coronary obstruction. Clinical endpoints included death, myocardial infarction (MI), stroke, major bleeding at 30 days as defined by Valve Academic Research consortium II (VARCII).

RESULTS 45 patients undergoing Portico ViV were included in analysis. The mean age was 79± 7 years with STS (mortality) score of 7±4. These procedures had mainly utilized peripheral arterial access (93%), with transesophageal echocardiogram guidance (60%) for treatment of surgical valve label size ≤21, >21-<25, and ≥25mm in 36, 38 and 27% respectively. Four (9%) of the failed surgical bioprostheses were stentless. Successful implantation was achieved in 44 (98%) cases with no malposition events or clinically-evident coronary obstruction. Post implantation valve area was 1.3 ±0.4 cm2, mean gradient of 17.1 ± 7.7 mmHg and ≥ moderate aortic insufficiency was observed in 3 (7%). One death (2%) related to ischemic stroke occurred within 30 days. Major bleeding and vascular complication in 5 (11%) and 1 (2%) respectively. One patient required permanent pacemaker implantation (2%).

CONCLUSIONS Results from this international multicenter registry show that Portico offers a safe and effective treatment of failed surgical bioprosthesis with an added advantage of device retrievability, resulting in low incidence of malpositioning and coronary obstruction. Additional studies and comparison with other transcatheter devices should further determine the hemodynamic and clinical performance of this device for selection of optimal treatment of high risk patients with failed surgical bioprostheses.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-666

A Comparison Between New Generation And First Generation Transcatheter Aortic Valve Implantation (TAVI) Devices: A Single Centre Experience

Neil Ruparelia,[1] Azeem Latib,[2] Francesco Giannini,[3] Filippo Figini,[4] Nicola Buzzatti,[5] Antonio Mangieri,[6] Damiano Regazzoli,[6] Stefano Stella,[6] Alessandro Sticchi,[7] Eustachio Agricola,[8] Michele De Bonis,[8] Fabrizio Monaco,[8] Pietro Spagnolo,[8] Alaide Chieffo,[9] Matteo Montorfano,[10] Ottavio Alfieri,[11] Antonio Colombo[12]

[1]San Raffaele Scientific Institute, Milan, LOM; [2]Ospedale San Raffaele, Milan, Italy; [3]San Raffaele scientific institute, Milano, Italy; [4]San Raffaele Scientific Institute, Milano, Milano; [5]San Raffaele University Hospital, Milan, Italy; [6]San Raffaele Scientific Institute, Milan, AK; [7]San Raffaele Scientific Institute, Milano, MI; [8]San Raffaele Scientific Institute, Milan, Italy; [9]San Raffael Scientific Institute, Milan, Italy, Milan, Italy; [10]San Raffaele scientific institute, Milano, Milano; [11]San Raffaele Hospital, Milan, Italy; [12]EMO GVM Centro Cuore Columbus/ San Raffaele Hospital, Milan, Italy

BACKGROUND Transcatheter aortic valve implantation (TAVI) is the treatment option of choice for high surgical risk patients presenting with severe symptomatic aortic stenosis. First generation devices were limited by non-negligible TAVI-related complications including ≥2 paravalvular leak (PVL) and vascular complications that are predictors of mortality. As a result, newer devices have been developed to overcome these limitations. We aimed to compare procedural and clinical outcomes between contemporary and first generation devices.

METHODS A retrospective analysis was conducted of all patients that underwent transfemoral TAVI between November 2007 and May 2015 at San Raffaele Scientific Institute, Milan, Italy. Patients treated with an Edwards Sapien XT (Edwards LifeSciences, CA) or a CoreValve (Medtronic, CA) were allocated to the first-generation group (1G). Patients treated with an Edwards Sapien 3 (Edwards LifeSciences), Evolut R (Medtronic), Lotus (Boston Scientific, MA) or Direct Flow (Direct Flow Medical, CA) valves were allocated to the second-generation group (2G).

RESULTS 449 patients were included in the 1G, and 179 patients to the 2G. Patients in the FG were older (83.4 vs. 82.1 years, p=0.03), of a higher risk profile (Euroscore 10 vs. 9.5, p=0.04) with a similar gender preponderance (female: 61.2% vs. 61.4%, p=0.79). Peri-procedurally, there was a lower incidence of major or life-threatening bleeding complications in the 2G compared to the 1G (8.4% vs. 21.4%, p<0.001) and ≥2 PVL (6.1% vs. 17.1%, p=0.003) with no differences in the rates of stroke (3.3% vs. 1.8%, p=0.23) or PPM implantation (11.2% vs. 12.7%, p=0.6) respectively. Mortality at 30-days (3.6% vs. 1.4%, p=0.77) and at 1-year (11.2% vs. 12.7%, p=0.81) were similar between groups.

CONCLUSIONS This single-center retrospective study demonstrates that newer generation TAVI devices are associated with a reduction in ≥2 PVL and major and life-threatening bleeding events when compared to first generation devices. There were no differences in short-term mortality. Longer-term follow-up are required to determine if these short-term procedural improvements are translated into a longer-term outcome benefit.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-667

Aortic Valve Intervention In Octogenarians In The "TAVI-Era": Analysis Of The UK National Adult Cardiac Surgery Audit Registry And The UK Transcatheter Aortic Valve Implantation (TAVI) Registry between 2006 and 2012

Neil Moat,[1] Alison Duncan,[2] Simon V. Stephens,[3] Graeme L. Hickey,[4] David Cunningham,[5] Mark de Belder,[6] Daniel J. Blackman,[7] David Hildick-Smith,[8] Ben Bridgewater,[9] Peter Ludman[10]

[1]Royal Brompton Hospital, London, United Kingdom; [2]Royal Brompton Hospital, London, London; [3]The Royal Brompton Hospital, London, FL; [4]Manchester Academic Health Science, University Hospital South Manchester, Manchester, FL; [5]University College London, London, United Kingdom; [6]The James Cook University Hospital, Middlesbrough, UK, Middlesbrough, United Kingdom; [7]University of Leeds, Leeds, United Kingdom; [8]Royal Sussex County Hospital, Brighton, United Kingdom; [9]University Hospital Manchester, Manchester, FL; [10]University Hospital Birmingham, Birmingham, Birmingham

BACKGROUND Transcatheter aortic valve implantation (TAVI) is a treatment for patients with aortic stenosis deemed high risk for aortic valve replacement (AVR). Advancing age independently predictors mortality after AVR, so that most patients undergoing TAVI are elderly. This study presents UK trends in activity and outcomes for TAVI and AVR in patients aged 80 or over in the "TAVI era".

METHODS Data for all AVR and TAVI procedures between January-2006 and December-2012 were sourced from (i) the UK Cardiac Surgery Registry and (ii) the UK-TAVI Registry. Patient demographics, 30-day mortality, postoperative length of stay (PLOS), 1-year and 5-year survival were analyzed for four groups: TAVI, AVR, AVR+coronary artery bypass graft surgery (CABG), and AVR+other concomitant surgery.

RESULTS Total aortic valve interventions increased between 2006 and 2012 from 1206 to 2668 (by 121%). Between 2006 and 2012, the number of isolated AVR procedures increased from 485 to 808 (by 67%), while between 2007 and 2012, TAVI increased from 47 to 798 (by 160%). TAVI patients were older, more likely to be female, in NYHA class IV, with prior cardiac surgery, renal, pulmonary, and ventricular dysfunction, extra-cardiac arteriopathy, and neurological disease than AVR patients (logistic EuroSCORE 23.5±13.7 vs. 13.6±9.5, p<0.001). 30-day mortality was 10.55% (AVR+other), 5.61% (AVR+CABG), 5.54% (TAVI), and 3.45% (AVR). Mean PLOS (days) were 17.8 (AVR+other), 14.4 (AVR+CABG), 12.6 (AVR), and 9.1 (TAVI). 1-year survival was 89.6% (AVR), 85.1% (AVR+CABG), 81.9% (TAVI), and 78.8% (AVR+other surgery). 5-year survival was 64.2% (AVR), 59.7% (AVR+CABG), 56.5% (AVR+other surgery), and 43.4% (TAVI).

CONCLUSIONS In 2007, TAVI made up only 3% of all aortic valve interventions in patients ≥80 years. This had increased ten-fold to almost 30% of all aortic valve interventions by 2012. Despite increased age and risk scores, length of hospital stay was shorter, and 30-day and 1-year mortality rates were comparable with other aortic valve interventional groups.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic