promising, information regarding outcome at 30 days is limited. We evaluated outcomes after TAVI with S3 THV with particular emphasis on the updated Valve Academic Research Consortium (VARC-2) criteria.

METHODS 261 consecutive patients undergoing transfemoral TAVI with S3 THV at our center were enrolled and outcome according to the VARC-2 criteria was analyzed at 30 days.

RESULTS Mean age was 81 ± 6 years and median logistic EuroScore was 10% [8-21]. Follow-up at 30 days was available for 260 patients. VARC-2 defined device success was achieved in 251 (96%) of patients; 5 (2%) cases developed moderate paravalvular leakage. At 30 days, one patient (0.4%) died due to a noncardiac cause and 8 (3%) patients suffered from a disabling (n = 4) or non-disabling stroke (n = 4). Life-threatening bleeding and major vascular complications occurred in 12 (5%) and 7 (3%) of the cases, respectively. From discharge to 30 days, 5 (2%) patients were hospitalized due to valve-related symptoms or worsening of heart failure. The VARC-2 composite early safety endpoint at 30 days, all-cause mortality, disabling and non-disabling stroke, life-threatening bleeding, acute kidney injury, coronary artery obstruction requiring intervention, major vascular complication, or valve-related dysfunction requiring repeat procedure was observed in 23 (9%) patients. Permanent pacemaker implantation rate at 30 days was 16% (8 of the 235 patients without pacemaker at baseline) and with 30-days follow-up. Myocardial infarction, coronary obstruction requiring intervention, valve-related dysfunction and endocarditis were not observed.

CONCLUSIONS Our objective was to estimate the impact of availability of transcatheter heart valve replacement (TAVR) therapy on overall heart valve replacement volumes and aortic valve disease mortality over a longer-term horizon, using the German healthcare system as a reference case, which was among the first systems adopting TAVR therapy in routine care.

METHODS We collected therapy- and age-specific procedure volumes from records of the German Federal Statistics Office for TAVR and surgical aortic valve replacement (SAVR) procedures for years 2009-2013. Relevant ICD-10 diagnosis-based information about discharges and hospital-based mortality were obtained for the same period. We computed therapy-specific and total procedure volumes and growth stratified by 5-year age increments and in total. Discharge and mortality data for aortic valve disease hospitalizations was assessed to obtain an estimate of changes in per-case mortality.

RESULTS Overall procedure volumes grew from 26,466 in 2009 to 33,235 in 2013 (+26%). This growth was driven by TAVR (3,411 to 10,814; +217%), while SAVR volumes remained stable (23,055 to 22,421; -3%). In patients 75 years or older, an overall procedure growth of 51% was observed (12,168 to 18,318), with volumes in older patient segments growing more heavily (+62% in >80-year olds; +101% in >85-year olds). Across all elderly age groups, SAVR volumes decreased (-20% in >80-year olds; -37% in >85 year olds), while they grew in selected younger patients groups (highest growth +30% in age group 60-64 yrs.). Concurrently, total aortic valve disease hospital discharges grew by 26%, from 44,161 to 55,748, while mortality per hospitalization case decreased by 5% between 2009 and 2013.

CONCLUSIONS Five-year real world data from the German healthcare system demonstrate that the availability of TAVR has led to substantial growth in aortic valve replacements. TAVR substantially increased volumes in the elderly population, and partially replaced SAVR treatments in this subgroup. Concurrently, increased therapy utilization in patients previously left untreated was associated with a reduction in overall mortality of aortic valve-related hospitalizations. Further analysis is warranted to compare these data with the German Registry as well as replicate them in other countries, if possible stratified by pre-procedural surgical risk.

CATEGORIES STRUCTURAL: Valvular Disease: Aortic

TCT-158 Fully Percutaneous Transcatheter Left Atrial Entry and Closure to Deliver Large Caliber Transcatheter Mitral Valve Implants

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BACKGROUND To overcome limitations of transapical and transseptal access to deliver large caliber transcatheter implants to the mitral valve, we hypothesized that the left atrium could be accessed through the posterior chest wall by displacing the lung with CO2 under imaging guidance.

METHODS We tested fully percutaneous transapical left atrial access in 12 animals (10 pigs and 2 sheep) and 3 human cadavers under real-time magnetic resonance imaging (n = 10) or x-ray fluoroscopy plus C-arm computed tomographic (n = 2) guidance. We also simulated transeptal trajectories to the left atrium on human contrast-enhanced cardiac computed tomographic angiograms. We also simulated transeptal trajectories to the left atrium on human contrast-enhanced cardiac computed tomographic angiograms.

RESULTS Animals were survived for median 7.5 days (Q1-Q3: 7–8.5 days). The pleural space was insufflated with CO2 to displace the lung, an 18-26Fr sheath was delivered to the left atrium, and the left atrial port was closed using an off-the-shelf nitinol cardiac occluder (Amplatz Atrial Septal Occluder) successully in 10/12 animals. There was no procedural mortality and no important change in hemodynamics (heart rate, mean arterial pressure and expired CO2). Median bleeding into the pericardium and pleura were 55mL (40–73mL) and 10mL (10–75mL) respectively, which were immediately autotransfused. A total of 30mL of hemodilutional transfusion was observed at follow-up. We also successfully accessed and closed the left atrium in 3 human cadavers under real-time magnetic resonance imaging and x-ray fluoroscopic guidance. A theoretical trajectory to the left atrium, assuming the right lung theoretical trajectory to the left atrium, assuming the right lung