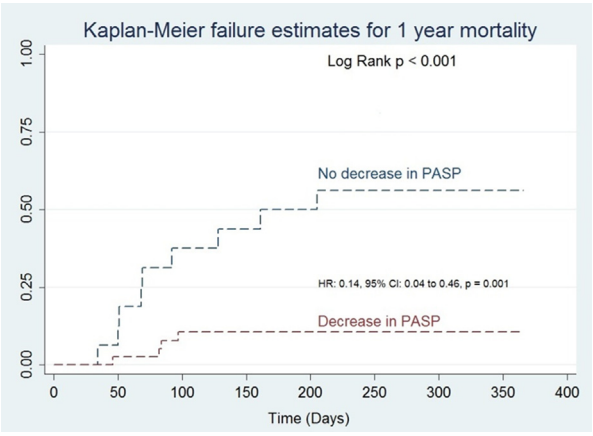

CRT-808

Rates Of Vascular Access Use In Transcatheter Aortic Valve Replacement: A Look Into The Next Generation

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BACKGROUND Vascular complications are a major source of morbidity and mortality associated with transcatheter aortic valve replacement (TAVR). As smaller delivery systems emerge we sought to identify differences in vascular access use.

METHODS We analyzed all patients who had undergone TAVR in a single center from March 2012 to May 2014. We identified all patients who had undergone non-femoral TAVR. We reviewed the femoral dimensions of all patients using CT imaging taking into account vessel tortuosity, calcification, vascular pathology, and two-dimensional minimal lumen diameter (MLD). We then identified those patients in whom a smaller delivery system could have been used if such technology was available at that time.

RESULTS In total 208 TAVRs were performed,129 cases using femoral arterial access and 75 cases using non-femoral access. 28 transapical, 27 transcaval, 12 transaortic and 8 via an antegrade approach using the femoral vein thereafter requiring atrial septostomy. Of the 75 non-femoral access cases, 63 were completed using commercially available first-generation valves and 12 using second-generation valves under research protocols. MLD required for each delivery system was based on the manufacture's recommendation.

Of the 63 cases performed via a non-femoral route using a first generation valve, 31 cases could have been approached via a transfemoral (TF) route using second-generation delivery systems; and 48 cases could have been approached via a TF route using third generation delivery systems. Of the 12 cases performed via a non-femoral route using a second-generation valve, 4 cases could have been approached via a TF route using a third-generation delivery system.

In total, only 11% patients undergoing TAVR could not accommodate smaller second and third generation delivery system. 16 of these 22 patients could not accommodate third generation delivery systems due to the small minimal lumen diameter of the iliofemoral vessels. The other 6 could not accommodate smaller delivery sheath due to vascular pathology.

CONCLUSION With the use of smaller delivery systems our institution can expect to perform 89% of TAVRs via a typical retrograde TF approach.

CRT-809

TriGuard™ HD Embolic Deflection Device For Cerebral Protection During Transcatheter Aortic Valve Replacement: Results: Of The Deflect II Trial

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BACKGROUND Periprocedural stroke and concerns regarding subclinical cerebral embolic events in transcatheter aortic valve replacement (TAVR) have prompted investigation towards preventive measures. Purpose of this study is to evaluate the safety and performance of the second generation embolic deflection device TriGuard™HD (Keystone Heart, Herzliya, Israel) in patients undergoing TAVR.

METHODS This prospective, single-arm, feasibility study included 15 patients with severe symptomatic aortic stenosis scheduled for TAVR. Cerebral diffusion weighted magnetic resonance imaging (DWI) was planned in all patients one day before and at day 4 (±2) after the procedure. Major adverse cerebral and cardiac events (MACCEs) and neurological status, including NIH Stroke Scale (NIHSS) and the modified Rankin Scale (mRS) scores, were recorded for all patients. Primary endpoints of this study were I) device performance success defined as complete coverage of the three major cerebral arteries throughout the whole TAVR procedure and II) MACCE occurrence. Secondary endpoints included the number and volume of new cerebral lesions on DWI.

RESULTS Fourteen patients underwent transfemoral TAVR and one patient a transapical procedure. An Edwards SAPIEN prosthesis was implanted in 9 (60%) and a Medtronic CoreValve in 6 (40%) patients. Predefined performance success of the TriGuard™HD device was achieved in 10 (67 %) patients. MACCE occurred in none of the patients. NIH Stroke Scale scores were 0 in all patients on admission and remained unchanged during hospital stay. Modified Rankin Scale scores ranged from 0 to 3 (average 2.1) on admission and remained unchanged during hospitalization. Pre- and post-procedural DWI was performed in 8 patients with device performance success and showed 4.0 [1.0-8.8] new lesions per patient with 12.1 [7.7-20.8] µL lesion volume and 64.6 [11.9-147.8] µL total ischemic volume.

CONCLUSION The use of the TriGuard™HD for cerebral protection during TAVR is safe. Performance success was achieved in 67% of all cases. TriGuard™HD shows important reduction in volume of post-procedural cerebral ischemic lesions compared to regular (unprotected) TAVR cases.

CRT-810

Contemporary Outcomes of Patients Undergoing Balloon Aortic Valvuloplasty who were Initially Excluded from Transcatheter Aortic Valve Replacement

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BACKGROUND The utilization of balloon aortic valvuloplasty (BAV) as a bridge therapy to transcatheter aortic valve replacement (TAVR) in addition to its well established use in palliative therapy for patients not eligible for TAVR has become widespread in recent years. We sought to understand the contemporary outcomes of patients undergoing BAV who were initially excluded from TAVR.

METHODS We retrospectively analyzed all patients referred to our center from January 2010 through July 2013 who subsequently underwent BAV. All baseline, procedural and post-procedural characteristics were evaluated. Longitudinal follow-up for subsequent clinic visits and further eligibility for TAVR were performed. The total cohort was divided into two groups: patients who underwent only one BAV vs. more-than one BAV.

RESULTS A total of N=366 patients who were initially excluded from TAVR and assigned to undergo BAV were included in this analysis with n=326 having only 1 BAV and n=40 with >1 BAV. There were no significant differences in baseline characteristics among the two groups with a mean age of 82+/-8 years, 49% male, and STS score of 8.8+/-5.5. Outcomes following the pre-stated BAV groupings are demonstrated in the figure. 1% of the patients (n=4) underwent >2 BAV procedures with 1 of these patients subsequently undergoing TAVR. For patients who underwent an initial BAV, the mean time to a repeat BAV was 20+/-84 days. The mean time to TAVR was 168+/-188 days for the 1 BAV group vs. 270+/-161 days for the >1 BAV group.

CONCLUSION Among patients initially excluded from TAVR, BAV remains an important tool in the therapy of patients with severe symptomatic aortic stenosis for the purposes of either bridging to TAVR or for palliative management. However, repeat BAV is associated with a high mortality rate, and TAVR should be considered as an initial therapy in this subgroup.