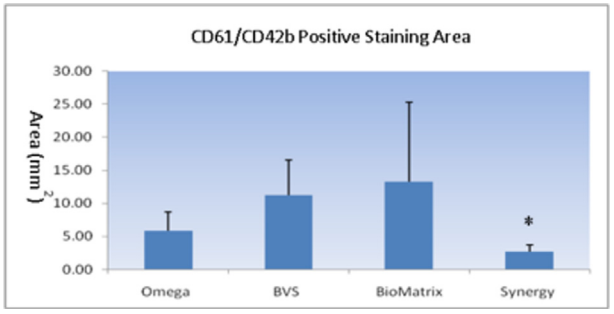
and BVS ($p< 0.05$)(Figure). The number of platelet aggregation clots was the least in Synergy DES with a borderline significant difference compared to other stents.



Conclusions: The current ex vivo swine shunt model demonstrated decreased acute thrombogenicity in bioerodible polymer thin-strut Synergy as compared to bioerodible thick-strut Biomatrix Flex and fully bioresorbable Absorb, which confirms the acute protective function of bioerodible stent coatings and emphasizes the relevance of stent geometry in acute thrombogenicity.

TCT-443

Multiplug Paravalvular Leak Closure Using Amplatzer Vascular Plug III – Prospective Registry (Wizzard I)

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Background: Transcatheter paravalvular leak closure (TPVLC) has become a viable alternative to reoperation but optimal technical strategy is still to be defined. We present a prospective TPVLC registry in which safety and efficacy of multi-plug, single-stage approach were assessed.
Methods: All subjects presented with hemodynamically significant PVL and symptomatic heart failure (HF). Decision on performing TPVLC was made by the Heart Team and procedures were executed in hybrid operating room. Ante- or retrograde access was employed for mitral while retrograde only for aortic PVLs. 2 to 4 AVP 3 devices (size and number based on PVL channel cross-sectional area by real-time three-dimensional transesophageal echocardiography) were simultaneously implanted into a single PVL channel. Endpoints were defined according to VARC-2 and modified if demanded by TPVLC specificity.
Results: Enrollment started in 2010 and reported data is complete as of December 2013. From 64 referred patients 49, with either mechanical valves (n=30) or stented bioprostheses, were found eligible for TPVLC. PVL location was mitral (n=29) or aortic. In the aortic group acute procedural success (APS) ratio was 100% and no MACCEs occurred. In the mitral group, TPVLC was successful on first attempt in 22 cases (4/4 in transapical and 18/25 in transseptal access). Following transseptal failure another transapical procedure was performed in 5 patients. TPVLC ultimately proved efficient in 89.7% of mitral PVLs with APS of 76.5%. Cumulatively, TPVLC was accomplished in 46 subjects (93.9%) with APS of 78%. When successful, it led to significant decrease of NT-proBNP concentration and HF symptoms regression. Safety endpoints were met in 4 patients and included non-disabling stroke (transient aphasia), plug embolization (successfully snared) and 2 access site-related complications. In device failure group 2 deaths occurred (end-stage HF) and 2 other patients were rehospitalized (decompensated HF).
Conclusions: Multi-plug, single-stage TPVLC with use of AVP III devices is effective and safe strategy in patients with hemodynamically significant PVL. It appears exceptionally well suited for aortic PVLs.

TCT-444

Efficacy of Anterograde Interventional Gene Delivery with Different AAV Serotypes in a Pre-Clinical Large Animal Model

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Background: Transduction efficacy, delivery approaches and vector serotypes are representing major challenges for future cardiac gene therapy. The aim of this current study was to test not only the anterograde coronary approach for gene delivery but three different AAV serotypes (6, 7 and 9) in a pre-clinical large animal model.
Methods: The approach was tested in 19 chronically instrumented dogs which received the AAV vectors anterograde intracoronarily. The left main coronary artery was cannulated with a Cobra1 catheter (5F) and a micro-infusion catheter (2.5F) was selectively advanced into LAD and RCX. The solution for infusion was prepared with normal saline, 1x10^13 AAV-(6, 7 or 9)-eGFP particles, SubstanceP (0.25-0.5ng/kg/min) and Adenosine (0.15mg/kg/min) and was injected slowly over 20min. Nitroglycerine was given i.v. (1µg/kg/min) to further enhance endothelial penetration of the virus. The coronary sinus was approached with a custom made balloon in eleven subjects. Hemodynamic data were recorded and infection efficacy was assessed using immunohistochemistry for eGFP after 30days.
Results: Procedure time was significantly longer in the cases with coronary sinus occlusion (60±10 vs. 90±45min, $p< 0.05$). Mean arterial pressure and dP/dtmax dropped in all cases due to the vasodilators (118±15 to 53±21mmHg and 2289±466 to 1421±414mmHg/sec). These effects were enhanced with coronary sinus blockage that infusion had to be discontinued several times due to hypotension. The eGFP-transduction rate with AAV9 was heterogeneous within the myocardial layers (0.3-56%), with a higher transduction in the subendocardial layer (22-45%).There was no significant increase of eGFP-expression caused by the additional coronary sinus blockage ($p=0.07$). Comparing the different serotypes AAV7 and AAV9 have been more effective infecting LV tissue than AAV6 (16±7%, 21±9% vs. 4±2%, $p< 0.05$).
Conclusions: Anterograde cardiac gene delivery is feasible and comparatively effective. The addition of coronary sinus blockage did not increase efficiency significantly. Individual characteristics need to be taken into account selecting the optimal AAV serotype for translatable results.

TCT-445

A Novel 4.5-Fr CoKatte Catheter Facilitating Stent Delivery in Complex Lesion in the Coronary Artery

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Background: The deployment of the stent sometimes associates with difficulty because of the unfavorable lesion characteristics including severe calcification or tortious configuration of the vessel, and insufficient backup support of the guiding catheter. To address this issue, the small-sized straight inner catheter have been developed to access the lesion, where the stent to be implanted. Recently, a novel 4.5-Fr child catheter with hyper lubricity in outer surface to ease advancement of the catheter was developed to improve the success rate in stent delivery.
Methods: We retrospectively evaluated 51 consecutive patients, who underwent primary percutaneous coronary intervention with CoKatte catheter (Asahi Intecc Co.,Ltd, Seto, Japan) after failure in delivering the stents with conventional procedure with 6-Fr guiding catheter between January 2011 and December 2013. CoKatte catheter is a straight catheter with 1.5mm in outer diameter, 120 cm in length, and compatible for 6-Fr guide catheter.
Results: The mean age of the patients was 75.3 years old and 29 male patients were included. Target vessels were comprised of 13 LADs, 7 LCXs, 27 RCAs, and 4 SVGs. Trans-radial approach was performed in 41 patients. Six lesions were chronic total occlusion. Seven lesions required the lesion preparation with Rotablator (Boston Scientific Corp.) before stent delivery. For advancement and subsequent deep intubation of the catheter, anchor balloon technique was needed in 42 patients, otherwise, the catheter could be advanced under support of the guide wire or the shaft of the balloon catheter. In all cases, stent delivery in the intended lesion was achieved. The complication related to deep insertion of the catheter including proximal dissection, air embolism, and severe ischemia were not observed.
Conclusions: This novel 4.5-Fr catheter is considered to contribute for facilitating stent delivery in the complex lesion in the coronary arteries.