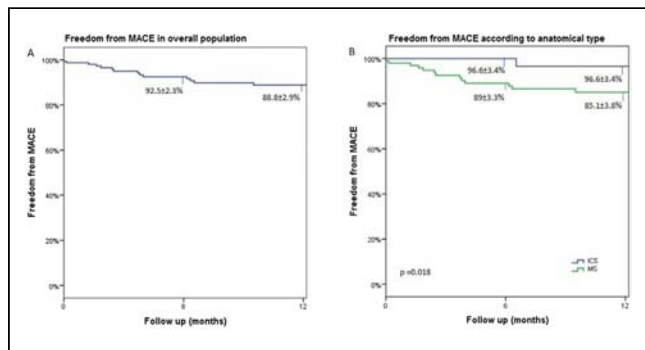


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**BACKGROUND** Transapical off-pump mitral valve repair with neochordae implantation (TOP-MINI) is an innovative procedure to treat degenerative mitral valve regurgitation (MR). Assess initial results of the Neochord Independent International Registry (NIIR) for isolated treatment of posterior mitral leaflet (PML) disease.

**METHODS** 158 patients with severe MR for flail/prolapse of PML (February 2013-May 2016) were included in NIIR. They were divided in groups according to mitral valve anatomy complexity: isolated central segment (ICS) and multisegment (MS) PML disease. Primary endpoint was composite of MVARC procedural success, freedom from mortality/stroke/reintervention/recurrence of MR>moderate/rehospitalization and decrease of at least 1 NYHA class. 30-days results and outcome comparison according to anatomy were performed.

**RESULTS** Median age was 64.6 years (IQR 54-76) and median STS 1.36% (IQR 0.30-1.45). ICS patients were 56 (35%) and MS 102 (65%). At 30-days MR≤moderate was present in 148 (95%) in the overall population, 55 (98.3%) in ICS and 92 (92%) in MS. One-year FU was completed for 87 (55%) patients. Overall 1-year survival was 99.4±0.6%. Freedom from MR>moderate was 90.6±2.6% for overall population, 97.3±2.7% for ICS and 85.9±3.8% for MS (p=0.027). Freedom from Reintervention was 95.8±1.9% for overall population, 100% for ICS and 93.8±2.7% for MS (p=0.122). Primary endpoint was 88.8±2.9% for the overall population, 96.6±3.4% for ICS and 85.1±3.8% for MS (p=0.032) (Figure-Panel A and B respectively).



**CONCLUSION** The NIIR shows that TOP-MINI procedure is safe, and its efficacy is maintained up to 1-year.

**CATEGORIES STRUCTURAL:** Valvular Disease: Mitral

**TCT-43**

**Outcomes after paravalvular leak closure: Percutaneous versus Surgical approaches.**

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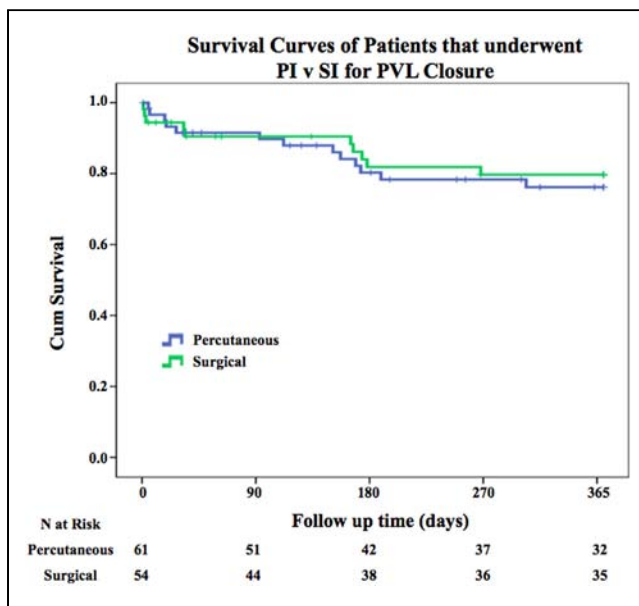


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**BACKGROUND** Data comparing the treatment of paravalvular leak (PVL) with percutaneous (PI) and surgical (SI) interventions are limited.

**METHODS** We compared baseline characteristics, procedural details, and 1-year survival in consecutive patients at our center who had PI or SI for ≥moderate PVL from 2007-16.

**RESULTS** Of 115 patients, 61 had PI and 54 had SI. PVL location was mitral, aortic, and pulmonary in 66 (56.4%), 43 (36.8%), and 6 (5.1%) patients, respectively. There were no differences in baseline characteristics except that SI patients were younger (61 v 73 years p<0.001), had more active endocarditis (25.9% v 0.0% p<0.001), and urgent procedures (74.1% v 55.7% p=0.04) than PI patients. The PI group had shorter post-operative stay (3 v 8 days p<0.001), shorter ICU stay (0 v 3 days p<0.001), and fewer readmissions at 30 days (9.8% v 29.6% p=0.007). 1-year survival was similar between groups (PI 78.7% v SI 81.5% p=0.71). After adjusting for age, active endocarditis, and procedure urgency, there was still a trend toward reduced 30-day readmission in the PI group (HR 0.35, 95%CI=0.11-1.11 p=0.07) and a similar risk of death at 1 year between groups (HR 1.62, 95%CI=0.57-4.60 p=0.37).



**CONCLUSION** PI for PVL closure results in comparable 1-year survival to SI, but with less resource utilization and 30-day re-hospitalization, even after adjusting for differences in baseline characteristics. These findings support the increased implementation of PI for PVL closure at US institutions.

**CATEGORIES STRUCTURAL:** Valvular Disease: Other

**TCT-44**

**Independent Mitral Valve Restenosis Predictors After Percutaneous Mitral Balloon Valvuloplasty In A Large, Consecutive Cohort Followed For More Than Two Decades**

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**BACKGROUND** Percutaneous Mitral Balloon Valvuloplasty (PMBV), whenever technically feasible, is the preferred treatment option for mitral stenosis, particularly those secondary to rheumatic heart disease. Nevertheless, mitral valvular restenosis might develop in a significant number of patients submitted to this procedure, with yet unclear risk factors to such occurrence.

**METHODS** This is single center analysis of a large, consecutive cohort of patients treated with PMBV between 1998 and 2011, who developed restenosis. The primary endpoint was to determine the independent predictors of this untoward event, defined as loss of over 50% of the original increase in maximum valve area (MVA) or MVA < 1.5 cm<sup>2</sup>.

**RESULTS** A total of 1794 consecutive patients submitted to PMBV in a single center, high volume tertiary institution, were included in this registry. Mitral valve restenosis was observed in 26% of the cases (n=483). Average population age was 36 years old, with most patients being female (87%). Mean follow-up duration was 4.8 years. At multivariate analysis independent predictors of restenosis were: left atrial diameter (HR: 1.03, 95% CI: 1.01-1.04, p<0.01), pre-procedure maximum gradient (HR: 1.01, 95% CI: 1.00-1.03, p=0.02) and Wilkins score > 8 (HR: 1.37, 95% CI: 1.13-1.66, p<0.01).

**CONCLUSION** In the very long-term follow-up, mitral valve restenosis was observed in up to a quarter of the population undergoing PMBV. Pre-procedure echocardiographic findings, including left atrial diameter, maximum valve gradient and Wilkins score were found to be the only independent predictors of this negative event.

**CATEGORIES STRUCTURAL:** Valvular Disease: Mitral

## TREATMENT OF SPECIFIC CORONARY LESION SUBSETS

Abstract nos: 45 - 48

### TCT-45

**Five Year Mortality Predictors After provisional T-stenting in Coronary Bifurcation Lesions, with Intracoronary Electrocardiogram Change Defined Strategy. From Intracoronary Electrocardiogram (ECG) and Myonecrosis After Bifurcation Stenting (COSIBRIA&CO) (ClinicalTrials.gov Identifier:NCT01268228)**

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**BACKGROUND** The predictive value of intracoronary electrocardiogram (icECG) changes after stenting coronary bifurcation stenting is unclear. We explored the predictors of death rates at mid-term, up to 60 months after coronary bifurcation PCI) with special attention to the changes on icECG.

**METHODS** Unipolar icECGs were recorded before, during and after stent placement and at the end of procedure in side branch (SB) and main branch (MB). The coronary wire was placed in all distal vessels with diameter >1.5mm, to “map” the distal zones of ischemia. The patient population consisted of patients with stable/unstable angina. Provisional T-stenting was default strategy.

**RESULTS** Total number of patients included into analysis - 189; 71% were males, mean age 67±9, diabetics 35.2%; 42% had previous myocardial infarction and 18% had multivessel disease. The main

treated vessel was LAD (78%). True bifurcation lesions (Medina xx1) were 55%. Kissing balloon inflation was performed in 23% of the cases. On univariate analysis significantly associated with death at 60 months were initial NYHA class, post-PCI troponin, LV end-systolic volume, mitral regurgitation grade, main branch icECG ST-segment elevation at the end of PCI, main branch icECG R/S ratio at the end of PCI, side branch icECG ST-segment elevation 1 min after stent implantation in main vessel, SB icECG R/S ration at the end of PCI .05. On multivariate Cox proportional hazards analysis the only independent predictors of death were final SB R/S>0.5 on icECG (HR=10.638, CI 1.140-100.00, p=.038), LV ESV (HR=1.074, CI 1.003-1.149, p=.041), MB icECG R/S (HR=3.448, CI 1.079-10.989, p=.037). The rates of death were highly significantly different in groups with SB R/S icECG <0.5 and >0.5: 3/93 (3.23%) vs. 10/96 (10.42%), p=.046.

**CONCLUSION** A new predictors of death at 5-year follow-up after provisional coronary bifurcation T-stenting were identified from icECG data. The SB R/S ratio recorded from side branch region at the end of coronary bifurcation stenting procedure is the strongest predictor of mid-term death. (ClinicalTrials.gov Identifier:NCT01268228)

**CATEGORIES CORONARY:** Angioplasty Overview and Outcomes

### TCT-46

**Coronary artery aneurysms: incidence, etiology, management and outcomes in a long-term follow up.**



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**BACKGROUND** Coronary artery aneurysm (CAA) is defined as coronary dilatation which exceeds the normal adjacent segments or the diameter of the patient's largest coronary vessel by 1.5 times. The aim of this study was to evaluate the incidence, etiology, clinical features, management and long term outcomes of patient with CAA.

**METHODS** Between Jan 2009-Dec 2015, from 12600 patients who underwent angiography at our centre, 77 ambispectively patients with CAA were included (incidence of 0.61%).

**RESULTS** Mean age was 69±10 years, 74% male, 43% were diabetics, 64% smokers (40% former), 84% hypertensive, 66% dyslipidemic, 6.5% AF, 12.9% COPD, 25% prior IHD and 10.4% prior PCI or 4% CABG, 14% PAD, 7% CKD (GFR<30 ml/min). 43% were on ASA and 10% OAC. 29% presented some degree of LV dysfunction. Indication for angiography was ACS in almost all cases 81.8% (76% NSTEMI, 24% STEMI). Dominance was right in 83%. Up to 75% were multivessel, LM was involved in 16%. The most frequently treated artery was the LAD (47%) and RCA (17%). The most frequent CAA type was sacular (53%) followed by fusiform (47%), with a maximum diameter size of 5.1±1.2 mm by QCA. 8% were giant aneurysms. 65% had >50% of stenosis in the immediately proximal or distal spot of the aneurysm. The location was predominantly on the LAD (62%), followed by RCA (32%). 21% had multiple aneurysms. 14% presented ectatic vessels. Some type of intracoronary imaging technique was done in 13% (5.2% OCT / 7.8% IVUS). We performed PCI on other lesions in 61%. Regarding the management of CAA, we performed PCI in 53% (68% DES; 2% BVS; 20% BMS; 10% CABG) and conservative management in 47%. 94% were discharged on ASA, 81% DATP (mostly clopidogrel). 10% received oral anticoagulation at discharge. The average duration of DAPT was 10±4.6 months (7.8% indefinite). During a mean FU of 40±29 months, MACE rate was 38.9% (15 deaths: 3 Non CV-deaths, 8 CV deaths, Unknown deaths; 9 Unstable Angina, 5 AMI and 3 non-fatal Bleeding, 2 strokes). The TLR rate on the aneurysm was 12% (2 restenosis treated by POBA and 3 new DES implantation). We performed angiographic control in 32.4%.

**CONCLUSION** In our study, the incidence of CAA is low, with male dominance, predilection for the left anterior descending artery and mostly associated with atherosclerosis and several CV risk factors. The Independently of the management, MACE rate was high in a long-term follow-up.

**CATEGORIES CORONARY:** Angioplasty Overview and Outcomes