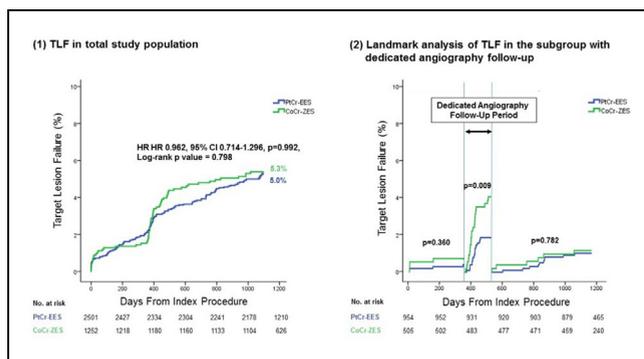


**METHODS** 3,755 patients receiving PCI were randomized 2:1 to PtCr-EES or CoCr-ZES, and 96.0% of patients completed 3-year clinical follow up. A dedicated angiographic follow-up was recommended between 12-15 months at the treating physicians' discretion. The primary outcome was target lesion failure (TLF) at 3-year post-PCI, defined as the composite of cardiac death, target vessel-related myocardial infarction (MI), and ischemia-driven target lesion revascularization (TLR).

**RESULTS** At 3 years, TLF occurred in 5.0% and 5.3% of the population in the PtCr-EES and CoCr-ZES groups, respectively (HR 0.962, 95% CI 0.714-1.296, p=0.992). There were no significant differences in the individual components of TLF. Dedicated angiography follow-up was performed in 38.9% of the total patients. In a landmark analysis of the subgroup that received angiographic follow-up, the TLF rate of the CoCr-ZES was significantly higher than PtCr-EES during the angiography follow-up period (p=0.009), mainly due to higher repeat revascularization rate.



**CONCLUSION** PtCr-EES and CoCr-ZES showed comparable long-term outcomes. The rate of repeat revascularization in CoCr-ZES was higher than in PtCr-EES when dedicated angiography follow-up was performed, suggesting greater neointimal growth and higher late loss.

**CATEGORIES CORONARY:** Stents: Drug-Eluting

**TCT-754**

**One-year clinical outcome of patients treated with Resolute Onyx versus Resolute Integrity: A Comparison of the HOST-ONYX and HOST-RESOLINTE Registries**



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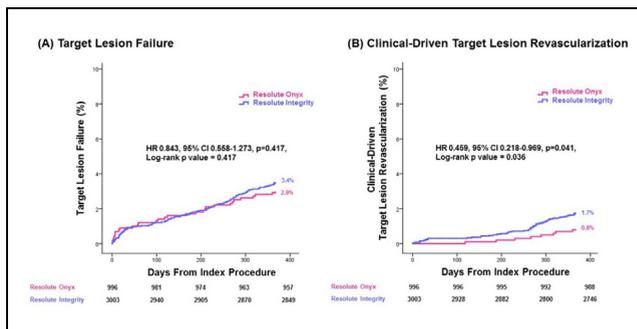
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**BACKGROUND** Resolute Onyx (Medtronic, CA, US), a zotarolimus-eluting stent is characterized by thinner struts and increased radiopacity as compared to Resolute Integrity (Medtronic, CA, US). Deliverability and pushability have improved, but it is not yet known how they affect the clinical outcomes.

**METHODS** This was an interim study to compare each prospective registries of patients who received Resolute Onyx and Resolute Integrity. Total 997 patients in Resolute Onyx registry and 3,004 patients in Resolute Integrity registry completed 1-year follow up. The primary outcome was target lesion failure (TLF) at 1-year post-PCI, defined as the composite of cardiac death, target vessel-related myocardial infarction, and clinical-driven target lesion revascularization.

**RESULTS** At 1 year, TLF occurred in 2.9% and 3.4% of the population in the Resolute Onyx and Resolute Integrity, respectively (HR 0.843, 95% CI 0.558-1.273, p=0.417) (Figure). In the individual components of TLF, there were no significant differences in cardiac death and target vessel-related myocardial infarction. But, clinical-driven target lesion

revascularization was performed at a lower rate in the Resolute Onyx than in the Resolute Integrity (0.8% vs. 1.7%, p=0.041). Definite or probable stent thrombosis at 1 year were low in both population (0.3% vs. 0.4%, p=0.558).



**CONCLUSION** In this interim study, Resolute Onyx showed a similar TLF rate compared to Resolute Integrity and a slightly superior result in repeat revascularization. Longer follow-up will be needed to see whether improvements in stent designs will affect the clinical outcome.

**CATEGORIES CORONARY:** Stents: Drug-Eluting

**TCT-756**

**A Single Center Comparison of Surgical Pulmonary Embolectomy versus Catheter Directed Lysis for Life-Threatening Pulmonary Embolus**



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**BACKGROUND** Patients with life threatening pulmonary emboli (PE) have traditionally been treated with anticoagulation alone, yet emerging data suggests more aggressive therapy may improve outcomes. The purpose of this research was to compare surgical pulmonary embolectomy (SPE) and catheter-directed thrombolysis (CDL) for acute, life-threatening PE.

**METHODS** A single center retrospective review was conducted on patients who underwent SPE or CDL. Patients with chronic thromboembolic disease were excluded from analysis. Statistical analyses utilizing t-tests, chi-square, and mixed effects models were completed. Pre and post procedural echocardiographic data were collected.

**RESULTS** 126 patients suffered a life-threatening PE during the study period (60 SPE (47.6%), 66 CDL 52.4%). 10 SPE patients (24.4%) and 10 (15.2%) CDL patients had massive PE's marked by pre-procedural hypotension. Six (10.0%) SPE patients and 4 (6.0%) CDL patients suffered a pre-procedure cardiac arrest. 74% of SPE vs 52% of CDL patients were male (p= 0.01), otherwise there were no significant differences in baseline demographics. In-hospital mortality was 3.3% (2) for SPE, and 3.0% (2) for CDL (p=.99). SPE patients were more likely to require prolonged ventilation (15.0% vs 1.5%, p=0.01). There were no significant differences in other major complications. At baseline 61.5% (16/26) of SPE patients and 54.5% (30/55) of CDL patients had >moderate right ventricular dysfunction (p=0.51). Other baseline echo characteristics were not significantly different. Mean echo follow up was 14 months. Both treatment groups showed marked improvement in echocardiographic markers of right ventricular function from baseline at mid-term follow-up (Table 1).

Catheter Directed Lysis	N=66	N=24	P value
	Pre-Procedure	Midterm (Up to 3 years)	
≥Moderate right ventricular dysfunction, n(%)	32 (48.4%)	0 (0%)	NA
Tricuspid valve velocity, mean (95%CI)	3.1 (2.8, 3.4)	2.5 (2.2, 2.8)	0.03
Right ventricular systolic pressure, mean (95%CI)	51.6 (46.6, 57.0)	26.5 (22.7, 31.0)	<.0001
Surgery Pulmonary Embolectomy	N=41	N=16	
≥Moderate right ventricular dysfunction, n(%)	26 (63.4%)	0 (0%)	NA
Tricuspid valve velocity, mean (95%CI)	2.8 (2.5, 3.2)	2.34 (1.95, 2.79)	0.33
Right ventricular systolic pressure, mean (95%CI)	45.3 (39.2, 52.3)	32.4 (25.9, 40.5)	0.07

**CONCLUSION** Both SPE and CDL can be applied with low morbidity and mortality in the appropriate patient. Further research is needed to delineate which patients would benefit most from either SPE or CDL.

**CATEGORIES CORONARY:** Thrombus / Thrombectomy and Embolic Protection

**TCT-757**

**Culprit Lesion Composition in Patients with ST-segment Elevation Myocardial Infarction assessed by Optical Coherence Tomography**



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**BACKGROUND** In patients with ST-segment elevation myocardial infarction (STEMI), plaque rupture (PR) and non-ruptured plaque (NRP) with intact fibrous cap are the most common underlying mechanism. The culprit lesion and the underlying plaque morphology can be assessed with optical coherence tomography (OCT). This study sought to evaluate the incidence of PR and NRP in STEMI patients using OCT to compare detailed plaque morphology in the culprit lesion.

**METHODS** OCT was performed prior to stent implantation in STEMI-patients. Plaque morphology was analyzed using off-line semi-automatic analysis software, and the culprit lesions were categorized as either PR or NRP. The percentage of each plaque component was summed over the total length of the lesion, and calculated as the total degree of plaque component/total degrees analyzed in the lesion×100.

**RESULTS** In 50 STEMI-patients, pre-stent OCT images were analyzable. Of these, 36 patients (72.0 %) presented with PR and 14 patients (28.0 %) with NRP. Patients with PR and NRP had similar clinical

characteristics, except, that patients with PR were older than patients with NRP (64.4±10.5 vs. 55.4±11.1, p=0.010). Compared to NRPs, PRs contained significantly more lipid plaque (58.0%±15.0 vs. 45.7%±11.8, p=0.008), more superficial (7.8%±4.1 vs. 5.1%±3.5, p=0.034) and profound bright spots (2.9%±2.7 vs. 0.7%±0.9, p=0.004) indicating macrophage infiltration, more thin-cap fibroatheromas (TCFA) (1.7±1.1 vs. 0.8±0.8, p= 0.004), and the TCFA lengths were significantly longer (5.1 mm ± 3.6 vs. 1.8 mm ± 2.4, p=0.003). PR had less fibrotic plaque (13.0%±7.0 vs. 20.5%±12.9, p=0.011) and white thrombus (2.5%±2.2 vs. 6.0%±4.1, p<0.001) compared to NRPs.

**CONCLUSION** One-third of STEMI patients had culprit lesions without OCT-detectable ruptured plaque. Culprit lesions with NRP contained less vulnerable plaque components, such as lipid pools, TCFA and macrophages compared to PRs lesions.

**CATEGORIES IMAGING:** Vulnerable Plaque

**TCT-758**

**Influence of Gender Differences on Invasive Coronary Microvascular and Flow Measurements in Patients with Stable Angina**



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**BACKGROUND** Women generally have a lesser extent of both overt and subclinical coronary atherosclerosis compared to men, and microvascular function may differ within gender. Abnormalities in the microcirculation can contribute to myocardial ischemia that partly affect fractional flow reserve (FFR) measurements.

**OBJECTIVES** To evaluate the effect of gender differences in FFR, index of microvascular resistance (IMR) and coronary flow reserve (CFR) measurements in patients with stable angina.

**METHODS** FFR, IMR and CFR were measured after 2 minutes infusion of an adenosine dose at 140µg/kg/min. IMR ≥ 24 was defined as microcirculatory dysfunction, whereas IMR < 24 equaled a normal microcirculation. Adenosine dose was then increased to 200µg/kg/min in 2 minutes and FFR was measured again.

**RESULTS** A total of 50 patients were consecutively enrolled. Mean FFR was 0.81 ± 0.11, mean IMR 29.0 ± 17.3 and mean CFR 2.4 ± 0.95. Male patients counted for 37 (74.0%) and female patients 13 (26%). IMR tended to be higher for male patients (IMR = 34.6 ± 24.8) compared to female patients (IMR = 21.5 ± 12.1), p=0.074; and a higher proportion of male patients had an increased IMR ≥ 24 compared to female patients (24 [88.9%] vs 3 [11.1%], p=0.009). Neither FFR (0.82 ± 0.11 vs. 0.81 ± 0.09, p=0.74) nor CFR (2.3 ± 0.9 vs. 2.7 ± 1.7, p=0.25) differed significantly between male and female patients. Overall, mean FFR decreased significantly from 0.81 ± 0.10 at standard dose of adenosine to 0.79 ± 0.10 at increased dose of adenosine (p<0.001). For male patients, the mean FFR decreased from 0.82 ± 0.11 to 0.79 ± 0.10 (p<0.001) vs. 0.81 ± 0.09 to 0.79 ± 0.09 (p=0.044) in female patients.

**CONCLUSION** Microvascular function was less affected in female compared to male patients; whereas CFR and FFR did not differ significantly among gender. Increased hyperemic stimulus induced further FFR reduction in both male and female patients.

**CATEGORIES OTHER:** Womens Health Issues