Conclusion: A significant number of ostial lesions with angiographic stenosis ≥ 70% are associated with a physiologic nonischemic threshold (i.e. FFR ≥ 0.75). Ostial lesions without evidence of ischemia should undergo physiologic testing before interventions.

Ostial Lesions: Angiography vs FFR

	Angiographic stenosis group 1	Angiographic stenosis group 2
FFR	≥70%	50-70%
≥0.75	15	20
<0.75	3	0

1149-191 Cutting Balloon Atherotomy Is Associated With Decreased Stent Utilization

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Background: Cutting balloon atherotomy (CBA) achieves luminal gain by creating controlled fissuring of coronary plaques. In a retrospective comparison of CBA to other techniques for treatment of non-intrastent lesions at Barnes-Jewish Hospital, CBA was associated with decreased need for stent implantation (50% vs. 88.4%), greater angiographic and clinical success (99.6% vs. 97.9% and 99.3% vs. 95.9%), and no difference in 1 and 9 month target vessel revascularization (TVR) (1.8% vs. 0.9%, and 15% vs. 12%, respectively). The *Cutting Balloon as Sole Revascularization Trial* compares CBA with conventional balloon angioplasty (POBA) as the primary treatment for non-intrastent lesions. **Methods:** Patients undergoing percutaneous revascularization for native coronary artery lesions are randomized to CBA or POBA as primary treatment. Provisional stenting is indicated for >35% residual stenosis, grade B or greater dissection, or thrombus. The primary endpoint is stent implantation for sub-optimal results. Secondary endpoints include in-hospital MACE and 1 and 9 month TLR. **Results:** Twenty-two patients have been randomized to the CBA group and 17 patients to the POBA group. Clinical characteristics, vessels treated, and lesion types are similar between the two groups. To date, CBA has achieved greater angiographic success as primary therapy (87.0% vs. 57.7%; p=0.02), with fewer dissections (22.2% vs. 45.5%, p=NS) compared to conventional angioplasty. CBA is associated a decreased need for stent implantation (27.8% vs. 81.8%; p<0.001). Despite lower stent utilization in the CBA group, there is no difference in final stenosis (14.5% vs. 14.0%).
Conclusions: As primary therapy, CBA appears to achieve greater angiographic success with decreased need for stent implantation compared to POBA. Updated enrollment with cost analysis, 1 month and 9 month outcomes will be presented. A model for comparing cost-benefit of CBA compared to implantation of drug-coated stents will be discussed.

1149-192 Diabetes Does Not Add to the Increased Six-Month Mortality Associated With Increase in CK-MB After Percutaneous Coronary Intervention

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Background: Increased CK-MB release after percutaneous coronary intervention (PCI) is associated with increased mortality. It is not known if the prognosis of diabetic (D) pts with increased CK-MB levels after PCI is different than nondiabetic (ND) pts.
Methods: The GUARDIAN trial contained 2,173 PCI pts who had prospectively acquired baseline clinical and post-PCI CK-MB and ECG data. The incidence and 6-month mortality associated with different levels of CK-MB were compared between 516 D pts and 1,657 ND pts.
Results: The incidence of peak CK-MB elevation in D pts was not greater than in ND pts (table). The D subgroup was older (median age 64.0 vs. 62.0, p<0.05); had more females (33.3% vs. 22.7%, p<0.001) and fewer whites (86.8% vs. 94.5%, p<0.001); was more obese (median body mass index 29.0 vs. 27.3, p<0.001); had a higher systolic blood pressure (median 134.0 vs. 130.0, p<0.001); and was more likely to have a history of heart failure (15.7% vs. 7.0%, p<0.001), cerebrovascular disease (11.4% vs. 8.0%, p<0.05), and peripheral vascular disease (18.0% vs. 9.8%, p<0.001) than the ND subgroup. The 6-month mortality rates in D were usually slightly greater than in ND at any particular peak CK-MB ratio cutoff, but none were statistically significant (table).
Conclusion: The incidence and magnitude of CK-MB leaks following PCI is no greater in D than in ND. D have a more adverse risk profile than ND, but for any given level of peak CK-MB release post-PCI, diabetes does not significantly elevate 6-month mortality risk.

	Incidence of Peak CK-MB Ratio in PCI Patients (%)					6-Month Mortality in PCI Patients by Peak CK-MB Ratio Cutoffs (%)			
	<1 ULN	≥1 <3 ULN	≥3 < 5 ULN	≥5 <10 ULN	≥10 ULN	<1 ULN	≥3 ULN	≥5 ULN	≥10 ULN
Diabetic	67.8	21.3	5.0	2.9	2.9	3.1	3.6	6.7	6.7
Non-diabetic	63.9	23.5	5.7	3.7	3.1	1.4	3.8	5.3	5.9
p=0.57						p=0.06	p=1.00	p=1.00	p=1.00

1149-193 Long-Term Outcome of Patients With Prior Percutaneous Revascularization Undergoing Repeat Coronary Intervention

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Background: Patients (pts) with a history of prior percutaneous coronary revascularization (PCR) are often excluded from clinical trials. As a result, there is limited data on the outcome of these pts undergoing repeat coronary intervention.
Method: Of 11,282 pts undergoing percutaneous coronary intervention (PCI) in the Prevention of Restenosis with Tranilast and its Outcomes (PRESTO) trial, 3,495 pts had history of prior PCR, 2/3 of whom had prior stent placement. We compared the outcome of these pts with 7,787 pts with de novo lesions.
Results: Mean age was 60 yrs in both groups. Pts with prior PCR were more likely to have DM (26% vs 22%, P < 0.001), HTN (70% vs 57%, p < 0.001), hypercholesterolemia (66% vs 47%, p < 0.001), prior MI (56% vs 31%, p < 0.001), and prior CABG (23% vs 9%, p < 0.001), and less likely to have new-onset angina (21% vs 26%, p < 0.001), significant EKG changes (6% vs 11%, p < 0.001), or be current smokers (17% vs 25%, p < 0.001). Angiographic features in pts with and without history of PCR, respectively, included: ostial lesions (10% vs 6%, p < 0.001), total occlusion (6% vs 10%, p < 0.001), ejection fraction (60.9% vs 58.6%, p < 0.01), and LAD location (31% vs 41%, p < 0.001). IIb/IIIa was used in 39% and 35% respectively (p < 0.001). In-hospital rates of cardiac events were low and similar. Kaplan-Meier estimates of events at 9 months are shown (table).
Conclusions: Despite similar in-hospital outcomes, patients with a history of prior PCR have a significantly lower event-free survival at 9-month follow-up.

Kaplan-Meier Estimates of Cardiac Events at 9-month Follow-up

Variable	Prior PCR Estimate (95% CI)	No Prior PCR Estimate (95% CI)	p value
Death	1.7 (1.1-2.2)	1.2 (0.9-1.6)	0.059
MI	2.0 (1.4-2.5)	1.3 (1.0-1.6)	0.018
CABG	7.6 (6.6-8.7)	3.2 (2.7-3.7)	< 0.001
Death or MI	3.4 (2.6-4.1)	2.5 (2.0-2.9)	0.012
Death, MI, or CABG	10.1 (8.9-11.4)	5.4 (4.7-6.0)	< 0.001

1149-194 Rupture of the External Elastic Lamina Increases Plaque Neovascularization After Coronary Angioplasty in the Swine Model

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Background: While plaque neovascularization (NV) is associated with neointimal proliferation after vessel wall injury, rupture of the external elastic lamina (EEL) may increase this angiogenic response. We tested the hypothesis that plaque NV is increased in coronary lesions with EEL rupture after balloon angioplasty in the swine model.
Materials and Methods: Thirty-nine histological sections from ballooned coronary artery angioplasty segments were studied after 6 weeks of barotrauma. Rupture of EEL was defined as extensive tissue interruption along the media-adventitia interface on 40x light microscopy. Neovessels were defined as tubululuminal anti-vWF positive capillaries recognized in immunostained sections by light microscopy. Morphometric measurements were performed by computerized planimetry.
Results: Plaque NV was increased in lesions with rupture of EEL (Table). Neointimal area was increased and lumen area was decreased in lesions with rupture of EEL (Table). EEL area was similar in both groups. Multiple regression analysis identified rupture of EEL as an independent predictor for plaque NV (RR=19.8; 95% CI=2.4-37).
Conclusion: Neovascularization is increased in coronary plaques with rupture of the external elastic lamina following vessel wall injury. This angiogenic response is associated with increased neointima formation and reduced lumen area. Thus, novel anti-angiogenic therapies may offer an alternative option for the prevention of restenosis.