Conclusions: Intracoronary ECG ST-segment shift during pharmacologic inotropic stress appears to be similarly accurate as structural stenosis assessment in detecting hemodynamically relevant coronary stenotic lesions.
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P5500
Improved clinical outcomes post percutaneous coronary intervention (PCI) with the use of an enhanced visualisation system (CLEARstent)

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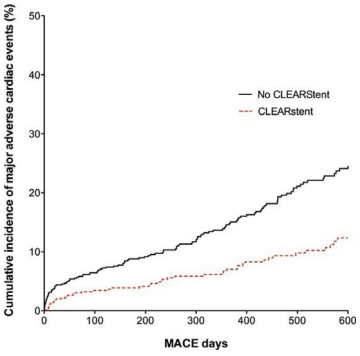
Background: Stent underexpansion and overlap are both significant risk factors for early and late stent thrombosis. Enhanced stent visualisation (e.g CLEARstent) systems could provide comparable data with IVUS to improve under-expansion and reduce stent overlap.
Aims: We aimed to assess the use of enhanced stent visualization on outcomes, after PCI with overlapping stents, specifically using CLEARstent technology.
Methods and results: This was a cohort study based on this institutions PCI registry. A total of 1600 patients who had PCI for stable angina or acute coronary syndromes (excluding cardiogenic shock), with overlapping DES in the same vessel between May 2015 and January 2017, were included in the analysis. Patients were divided into CLEARstent (n=648) and no CLEARstent guided intervention (n=952). Groups were comparable for patient characteristics (age, DM, ACS presentation) aside from the no CLEARstent guided group having a greater proportion of IVUS guidance (14.3% vs 8.5%). The primary end-points were MACE (target vessel revascularisation, myocardial infarction and all-cause mortality) recorded at a median follow up of 21 months. A significant difference in MACE was observed between patients who underwent CLEARstent-guided PCI (12.5%) compared with patients who underwent no CLEARstent guided PCI (22.3%, p<0.0001). This difference was mainly driven by reduced rates of target vessel revascularisation and recurrent MI. Overall this difference persisted after multivariate Cox analysis (HR 0.64, 95% CI 0.46–0.90, p=0.0015) and propensity matching (HR=0.62, 95% CI: 0.39–0.84, p=0.0018).



Kaplan-Meier curve for MACE

Conclusions: We suggest that routine clinical use of CLEARstent technology during PCI can be useful, and appears to result in better medium-term angiographic and clinical outcomes. Further study is required to build on this promising signal.

P5501
Predictors of long-term mortality after provisional t-stenting of coronary bifurcation lesions, based on intracoronary electrocardiogram

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Background: There is uncertainty about predictors of cardiovascular death after stenting of coronary bifurcation lesions. We explored the predictors of cardiovascular death at 5 years after provisional T-stenting of coronary bifurcation lesions guided by intracoronary electrocardiogram.
Methods: After wiring main (MB) and side (SB) branches a baseline intracoronary electrocardiogram was recorded from the tips of the wires, connecting proximal ends of the wire to unipolar V-lead on regular ECG, by means of connecting wire armed with alligator clips at both ends. After stenting, an icECG was recorded from MB and SB – if no elevation of ST-segment on icECG, a proximal optimization was done and if again no changes were observed on SB icECG the procedure was finished. If there was ST-segment elevation on icECG from the SB a balloon dilation of SB was performed. In case of flow less than TIMI III, major SB dissection or icECG ST-segment elevation accompanied with patient chest pain a second stent in SB was implanted with obligatory final kissing balloons inflation. At the end of procedure a final icECG were recorded.
Results: A 255 patients were included. One patient was excluded, because death during car crush accident. All patients had stable or unstable angina (2xtroponin negative). The median follow-up was 52 months (IQR 25–69 months). The mean age was 65±10 years, 69% males (n=176/254), 98% with hypertension, 38% diabetics on treatment, 61% smokers, 40% with family history of CAD, 12% with chronic obstructive pulmonary disease (COPD), 25% with renal failure (GFR<60ml/kg/h). A 33% had previous myocardial infarction and 47% - previous PCI. The mean SYNTAX score was 16±8, initial multivessel disease in 73%, LAD was dominantly treated, 73%, followed from RCA – 21%, 55% were true bifurcation lesions (Medina xx1). A KBI or SB balloon inflation with POT were performed in 49%. Stent in SB was implanted in 7.5% of the cases. After main vessel stenting ST-segment elevation on icECG was present in 68%, which persisted at the end of procedure in 42% of the cases. The overall mortality was 11.8% (n=30/254) at 52 months. On multivariate Cox-regression analysis an independent predictors of death were: SB icECG QRS-complex wider than QRS-complex simultaneously recorded on surface ECG (DQRS<0 7.4% vs.DQRS>0 18.6%, HR=4.367, CI 1.474–12.987, p=.008), SB icECG R-wave amplitude more than 2.7mV (SBicECG R<2.7mV 8.6% vs. R>2.7mV 25%, HR=3.016, CI 1.022–8.913, p=.046), echocardiographic LV end-diastolic dimension >55mm (HR=3.508, CI 1.232–9.988, p=.019) and COPD (HR=3.831, CI 1.259–11.765, p=.018). The survival rates if no one of predictors was available was 97.3%, 1 predictor – 91.2%, 2 predictors – 83.3%, 3 predictors – 33.3%, Mantel-Cox p<.001.
Conclusion: An icECG QRS complex wider than surfaceECG QRS-complex together with higher than 2.7mV R-wave on SB icECG at the end of procedure are new predictors of long-term death after provisional coronary bifurcation T-stenting.

P5502
Comparison of accuracy of fractional flow reserve using optical sensor wire to conventional pressure wire

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Background: Signal drift in pressure wires occurs because of entrapment of small air bubbles in the cavity of the pressure sensor, and is known as one of the causes of fractional flow reserve (FFR) inaccuracy. Recently, FFR wire using an optical sensor has been introduced, and is expected to reduce the occurrence of pressure signal drift (PD) by diminished effect of air bubbles. However, there is no evidence that wire using an optical sensor reduces the occurrence of PD in vivo.
Purpose: We investigated the superiority of FFR wire using an optical sensor to conventional pressure wire by comparing PD value.
Methods: We prospectively enrolled 113 coronary lesions with angiographic stenosis between 30% and 80% by visual estimation from 88 consecutive patients who underwent FFR measurements. All lesions were divided into optical sensor group, Group O and conventional sensor group, Group C. One lesion was excluded due to the wire slip-off before measuring drift. Finally, 51 lesions in 40 patients were assigned to Group O, and 61 lesions in 47 patients to Group C. We defined severe PD as distal coronary artery pressure/aortic pressure at the equalization position outside the 0.97 to 1.03 ranges.
Results: The mean absolute PD values were similar between two groups (0.012±0.018 vs. 0.018±0.027, p=0.613). Out of all 112 lesions, 67 (59.8%) lesions were located in LAD. In LAD lesions, PD value in Group O was less than that in Group C (0.009±0.010 vs. 0.022±0.033, p=0.465) although not statistically significant. Further, in LAD lesions, Group O had less frequent severe PD than Group C (0% vs. 22%, p=0.008). The decision changed from FFR ≤0.80 to FFR >0.80 in 1 case of Group O and in 3 cases of Group C, and vice versa in no case of either Group O or Group C.
Conclusion: The present study showed that PD value or frequency of severe PD was less in FFR analysis with optical sensor wire than those with conventional wire, especially in LAD lesions. In FFR analysis with optical sensor wire, the impact of PD on FFR-based decision-making might be small.

P5503
A novel sirolimus-eluting stent with unique coating technology in the treatment of real-world, all-comers patients: one-year clinical outcomes

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Background: Compared to first generation drug eluting stents (DES), second generation DES show a significant improvement in various clinical endpoints. The evolution of newer coronary stent systems has now progressed towards design modifications with improved interventional Performance and clinical outcomes.
Purpose: To assess efficacy and safety outcomes in real-world, all-comer patients treated with ABLUMINUS DES.
Methods: en-ABL e-registry is a prospective, multicentre registry, designed to further validate the safety and efficacy of ABLUMINUS DES in unselected real-world, all-comers patients enrolled in India. ABLUMINUS DES is a new generation sirolimus eluting stent with fusion coating technology (Sirolimus coating on stent as well as exposed parts of balloon) featuring its construction. The primary