ICD10). Preliminary analyses of the financial burden associated with post PCI angina and chest pain were conducted using Payment by Results coding in the HES data set. Cost estimates were presented in 2013/14 prices based on the Hospital and Community Health Services index (HCHS).

RESULTS 32,492 met study inclusion criteria (mean age 64 years [SD 11.8], 74% male). The cumulative incidence of angina/chest pain was 23% (n=7,472) at 12 months, 31% (n=10,199) at 24 months and 37% (n=11,940) at 36 months following PCI. It is estimated that bootstrapped cumulative mean costs to the secondary care provider were significantly higher at 12 months in those with angina/chest pain at £10,215, 95% CI [5,083, £10,348] vs. £6,552, 95% CI [16,50], £6,601] for those without. Significant cost differences persisted to 36 months post PCI £14,754 95% CI [£14,571 £14,936] for those with angina vs. £8,407, 95% CI [£8,324, £8,489] for those without.

CONCLUSIONS Our analysis, using real-world data, suggests that angina and chest pain are common following PCI. Moreover, incidence increased over time, to the extent that at 36 months over a third of patients experienced angina/chest pain. This is important because angina and chest pain have a detrimental impact on patients health related quality of life. In addition our analysis indicates that resource consumption is considerably greater in those affected. As angina/chest pain following PCI are associated with a human and economic burden, therapeutic strategies, or interventions resulting in a lower incidence of angina and chest pain post PCI, would have the potential to reduce the financial burden on the NHS.

CATEGORIES CORONARY: PCI Outcomes

KEYWORDS Angina, Complication, Percutaneous coronary intervention

TCT-441
3-Years Quality-of-Life Benefits after Percutaneous Coronary Intervention for Chronic Total Occlusions

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BACKGROUND Long-term health-related-quality-of-life (HRQoL) benefits of percutaneous coronary intervention (PCI) for chronic total occlusions (CTO) are not well established.

METHODS Consecutive patients undergoing PCI at our institution from September 2009 to January 2011 were evaluated. EuroQol-5D (EQ-5D) health survey was used to assess HRQoL at baseline, 6-, 12-, 24- and 36-months. Utility score improvement of 0.11 was considered minimal clinically important difference (MCID). Changes in quality-adjusted-life-years (QALY) were compared between patients who underwent successful single-vessel CTO (S-CTO) with failed CTO (F-CTO) and successful non-CTO lesion.

RESULTS Of 453 patients who underwent single-vessel PCI, 10.6% (n=48) were CTO and 89.4% (n=405) were non-CTO lesions. PCI was successful in 72.9% (n=35/48) CTOS and 98.8% (n=400/405) non-CTO. Mean utility scores improved after S-CTO from 0.67±0.20 to 0.85±0.16 at 36-months, 0.56±0.23 to 0.85±0.16 after S-NCTO and 0.69±0.17 to 0.89±0.12 after F-CTO (all p<0.01). 3-year QALY gained was highest after S-CTO (0.82±0.79) compared to S-NCTO (0.53±0.75) and F-CTO (0.47±0.76, p<0.01). Baseline utility score was inversely proportional to QALY gained after S-CTO where the lowest baseline utility score quartile (<0.47) had the largest QALY gain (1.69) compared to the highest quartile (≥0.71) with the smallest gain (0.16, p<0.01). Proportion of patients who experienced MCID improvement at 36-months was lower after S-CTO (84.0%) compared with S-NCTO (82.6%).

CONCLUSIONS Successful CTO PCI was associated with modest long-term HRQoL improvement which was significantly less than after non-CTO intervention. About forty percent of patients did not achieve minimal clinically important improvement in HRQoL 36-month after successful CTO PCI. High baseline health status was associated with minimal QALY gain after CTO intervention. Further studies are warranted to identify which CTO patients are most likely to benefit after PCI.

CATEGORIES CORONARY: PCI Outcomes

KEYWORDS Chronic total occlusion, Percutaneous coronary intervention, Quality of life

TCT-442
Early Coverage of Drug Eluting Stents and Bioresorbable Scaffolds Analysed By Optical Coherence Tomography: Evidence of the Impact of Stent Apposition and Strut Characteristic on the Neointimal Healing Process

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BACKGROUND Several clinical and pathological studies have suggested an association between incomplete stent apposition (ISA) and delayed neointimal healing and adverse events (stent thrombosis). The aim of this study was to evaluate the impact of stent apposition and stent design on progression of stent strut neointimal coverage.

METHODS To evaluate the impact of ISA on the progression of neointimal coverage, we developed an in-vivo model of ISA and studied follow-up response and coverage characteristics of well-apposed and malapposed segments for a series of Drug Eluting Stents (DES) (Cypher, PROMUS Element and Orsiro) and Bioresorbable Vascular Scaffolds (ABSORB BV5). Optical Coherence Tomography (OCT) was sequentially performed at baseline, 1 week and 4 weeks of follow-up. In addition, evidences were provided by histological analysis performed at 4 weeks follow-up and Computer Fluid Dynamic (CFD) simulations describing the shear stress characteristics around apposed versus non-apposed struts.

RESULTS A total of 235 cross sections and 3166 struts were analyzed. After implantation, stents had an average of 16.1% of struts that were malapposed or non-apposed side branch (NASB). Malapposition extent decreased over time as a result of neointimal healing (from 10.9% at baseline to 0% at 4 weeks; p<0.03). At 1 week, 8.5% of struts in well apposed segments were still uncovered versus 14.5% of struts in malapposed cross-sections and 66.7% of NASB struts (p<0.0001). At 4 weeks follow up, 0% of struts were uncovered in well apposed cross-sections vs. 0.4% in malapposed cross-sections and 50% of NASB struts (p<0.0001). Comparison of the impact of stent design on well-apposed segments revealed that thin strut Orsiro had only 1.1% of uncovered struts at 1 week while Promus Element, Cypher and BV5 had 7%, 48.4% and 18.2% of struts still uncovered respectively (p<0.0001).

CONCLUSIONS This study shows that early coverage is influenced by stent apposition as well as platform strut characteristics. At 4 weeks, only NASB struts remained a focus of delayed re-endothelialization.

CATEGORIES CORONARY: PCI Outcomes

KEYWORDS Covered stent, Endothelialization, Malapposition