Background The prevalence of patent foramen ovale (PFO) and atrial septal defects (ASD) described in autopsy series many decades ago, ranges up to 30%. Updated pathologic data from autopsy examinations in adults is lacking. It is important to confirm population rates given the potential associated stroke risk and the increasing availability of intervention via PFO closure.

Methods A state-wide prospective out-of-hospital cardiac arrest registry (OHCA) identified all patients aged 1 to 50 years who experienced OHCA in Victoria, Australia from April 2019 to April 2022 and subsequently underwent autopsy with a cardiac cause of death identified. Autopsy was performed including visual description of any ASD and identification of probe patency of foramen ovale.

Results 517 patients underwent autopsy in the setting of sudden cardiac death. 36 patients (6.9%) had a probe-patent foramen ovale, 2 patients (0.4%) had secundum ASD, and 2 patients (0.4%) had both a PFO and ASD (1 of whom had undergone percutaneous repair of both lesions). 12 patients (2.3%) had a prior history of cerebrovascular accident either recorded on medical history or detected on neuropathological examination; however none of these patients had a PFO or ASD.

Conclusions The combined rate of PFO and ASD in a cohort of 517 patients undergoing autopsy was 7.9%. None of these patients had experienced a cerebrovascular accident. This rate of PFOs appears lower than earlier reports and warrants further investigation. Using our identified event rate of PFOs would increase the over-representation of PFOs in young stroke patients from approximately two-fold to almost six-fold.

Introduction ESC guidelines recommend a 2-stent strategy in complex coronary bifurcation lesions, however data on the long-term benefit with a 2-stent strategy is lacking. The definition trial, chen et al JACC 2022, used angiographic criteria to define bifurcation lesion complexity and showed a significant reduction in target lesion failure (TLF) at 3 years with a 2-stent strategy. In this study we aimed to assess 3 year clinical outcomes in coronary bifurcation lesions with 2-stent and provisional stenting (PS), comparing outcomes based on lesion complexity defined by the DEFINITION criteria.

Methods This was a retrospective study analysing patients who underwent bifurcation PCI at UHL between Jan 2014 – Dec 2019. We compared clinical outcomes in patients undergoing 2-stent vs PS, at 3-years of follow-up. Our analysis includes a comparison of clinical outcomes with 2-stent vs PS, in non-complex and complex angiographic lesions, with complexity defined by the DEFINITION criteria. Only patients who underwent subsequent follow-up at UHL and had true bifurcation lesions, medina 0,1,1 & 1,1,1 were included. Primary outcome was a composite end-point of major adverse cardiac events (MACE) defined as cardiac death, & target vessel failure. Secondary endpoint was TLF, a composite of target lesion MI and clinically driven target lesion revascularisation.

Results During the study period, 205 patients underwent bifurcation PCI at our centre. 105 patients had a 2-stent approach, while 100 patients had PS. Total cohort Baseline characteristics, age 63.4yrs, male 86.4% (n=178), smoking history 33.17% (n=68), T2DM 21.95% (n=45). Acute coronary syndrome 42.9% (n=88).

47% (n=97) of our total cohort met angiographic criteria for definition trial eligibility, 53.2% (n = 56) & 41% (n=41) were 2-stent & PS approaches respectively. 80% of lesions
coronary artery bypass grafting. The median follow-up time was 77 months (IQR 22–152). 82.8% of patients were male and mean age was 68.9 years (SD 10.1 years). Patients had a high rate of cardiovascular risk factors, particularly diabetes were found among our patients. Additionally, acute coronary syndrome was the presenting event in nearly half of the population, highlighting the non-benign nature of this disease. Despite imaging guided treatment of ISR, a high proportion of patients required further intervention on the ISR vessel and further work is required to identify risk factors for recurrent ISR.

Conclusion

A 2-stent approach to patients with complex bifurcation lesions as defined by the DEFINITION criteria was associated with a significant reduction of TLF when compared to provisional stenting. 8.9% vs 24.3%. Our analysis shows that operators should pay particular consideration to SB lesion length & SB stenosis when choosing an approach to bifurcation lesions.

Introduction

Stent failure and particularly in-stent restenosis (ISR) remains a common presentation following percutaneous coronary intervention (PCI). Reported data suggests rates of up to 30% following bare metal stenting and 5–10% following drug eluting stents. A number of patient, procedure and stent characteristics are known to increase the risk of ISR. Little is known about ISR amongst patients in the Irish health care setting. We aimed to investigate the patient characteristics, management and outcomes for those presenting with ISR to a large tertiary referral centre.

Methods

We conducted a retrospective cohort study on consecutive patients presenting with ISR to our tertiary cardiology centre between 2020 to 2021. Patient demographics, type of percutaneous intervention performed and clinical outcomes were recorded in a dedicated database.

Results

Between 2020 and 2021, 134 cases of ISR were treated in our institution. The median time from index procedure to ISR treatment was 77 months (IQR 22–152). 82.8% of patients were male and mean age was 68.9 years (SD 10.1 years). Patients had a high rate of cardiovascular risk factors including, diabetes 35.1%, hypertension 91.8% and smoking 84.3%. Prior myocardial infarction was common 71.6% and 17.2% had a history of coronary artery bypass grafting. The original stent data was available on 63 patients (47%), all of which were implanted with drug eluting stents. Clinical presentation was with stable angina in 47%, non-ST-elevation myocardial infarction 27.6%, ST-elevation myocardial infarction accounted for 11.2% (in the setting of acute stent thrombosis) and unstable angina 11.9%. The right coronary artery (RCA) was most commonly affected, accounting for 38.8% of presentations, the left anterior descending (LAD) was associated with 30.6% of cases, left circumflex artery (LCx) in 14.2%, 5% in saphenous vein grafts and 5.9% involving the left main stem (LMS). Mehran ISR classification was type IC (focal stenosis) in 37.3%, type II (diffuse intrastent) in 26.9%, type IV (occlusive) in 12.7%, type IB (stent margin) in 9.5%, type ID (multifocal intrastent) in 3.7% and type III (diffuse proliferative extending beyond stent margin) in 3%. Percutaneous coronary intervention of the ISR was guided by intracoronary imaging in 38.8%; with 38.5% of these using optical coherence tomography (OCT) and 61.5% using intravascular ultrasound (IVUS). Drug coated balloon application was the most common management strategy (69.4%), and further stenting with drug eluting stents was utilised in 25.4%. Median follow up was 16.6 months (IQR 4–22.9). At 1 year follow up there were 15 deaths (11.2%), 6 myocardial infarctions (4.5%) and 26 required further target lesion revascularisation (19.4%).

Conclusion

Instant restenosis continues to be common, and accounts for a large proportion of the cath lab workload. Similar to previous studies, a high prevalence of cardiovascular risk factors, particularly diabetes were found among our patients. Additionally, acute coronary syndrome was the presenting event in nearly half of the population, highlighting the non-benign nature of this disease. Despite imaging guided treatment of ISR, a high proportion of patients required further intervention on the ISR vessel and further work is required to identify risk factors for recurrent ISR.

Introduction

Radial access during primary PCI is associated with reduced mortality and major bleeding when compared to femoral access and is the recommended access site. Nevertheless, failure to secure radial access may necessitate crossover to femoral access. Data on outcomes in STEMI patients requiring crossover from radial to femoral access are limited. Several previous studies examining crossover to femoral access in patients presenting with STEMI have had high rates of upfront femoral access or excluded patients with cardiogenic shock. Thus, the aim of our study was to assess the incidence, predictors and outcomes for patients requiring crossover from radial to femoral access in all-comers with ST elevation MI.

Methods

The data for all patients with STEMI who presented to our institution over the six-year period between 1st January 2016 to the 31st December 2021 were reviewed (figure 1). The study population was divided into two groups: patients who underwent successful transradial PCI, and those who required crossover to femoral access. In line with the definition used by the MATRIX Trial Investigators, we considered radial crossover to be either a failure to begin or complete coronary angiography or percutaneous coronary intervention via radial access necessitating crossover to femoral access. P-values for categorical variables were computed using a chi-squared test. Independent predictors of crossover were determined by means of a stepwise categorical model selection algorithm based