exercise time was increased, and active recovery time reduced, as patients progressed through the CR programme.

Results 1288 patients were included in the analysis.

91.7% of the study population (n=1181) started the CR programme. Males were more likely to engage with the CR programme than females (p=0.02) although the proportion of patients starting CR was high in both groups (93% male, 88% female). Patients with atrial fibrillation (AF) were less likely to engage with CR (p<0.001). Of those that started CR, 67.3% completed the exercise programme (n=795). Younger patients were less likely to complete the CR programme than older patients (p<0.001).

Linear regression modelling found that increasing age (p<0.001) and the presence of AF (p=0.05) reduced the improvement in walking distance. The presence of severely impaired left ventricular (LV) function did not influence the improvement in walking distance at the 0.05 significance level.

Conclusions Fewer females were referred and started CR than males in our programme. Although this discrepancy could represent a true gender difference in CR requirement, it may also represent under-referral of females to CR or indicate barriers to uptake of CR for females. Targeted work to encourage female participation in CR is clearly required to address this gender gap.

Younger patients were more likely to drop-out of our CR programme than older patients. Retention of younger patients needs to be encouraged in future CR programmes as these patients have been shown to benefit from CR over a wide range of areas (1).

Increasing age and presence AF, but not presence of severely impaired LV function, predicted poorer performance in CR.

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Conflict of Interest Nil

43 THE ROLE OF MECHANICALLY-SUPPORTED EMERGENCY PERCUTANEOUS CORONARY INTERVENTION IN CARDIOGENIC SHOCK

[1]Kristina Frain, [2]Paul Rees. *[1]Ms; [2]University of St Andrews, Academic Department of Military Medicine, Barts Heart Centre*

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Background Historically, the intra-aortic balloon pump (IABP) has been the primary means of providing rapid mechanical circulatory support (MCS) in patients undergoing emergency revascularisation for acute myocardial infarction complicated by cardiogenic shock (AMI-CS). Despite the availability of alternative devices such as the percutaneous Impella 2.5/CP® which have displayed superior haemodynamic support in animal models, evidence in support of their use in humans is limited and international guidelines do not currently recommend their use. This review aims to examine the existing literature in order to compare survival outcomes in AMI-CS patients undergoing emergent revascularisation supported by percutaneous MCS devices; IABP and Impella 2.5/CP, to discuss the implications of the findings on clinical practice.

Method A review of the literature was conducted through the application of search terms 'Intra-aortic balloon pump', 'Impella', 'Cardiogenic shock' and 'Mortality' to four databases: Ovid Medline, Ovid Embase, Cochrane and Web of Science. This resulted in 1,823 studies which were then screened based on title and abstract before full text analysis to identify studies that met pre-defined inclusion and exclusion criteria.

Results 12 studies met the eligibility criteria: 2 randomised controlled trials (RCTs) and 10 observational studies. In total 28,104 patients were included. 10 studies compared outcomes in patients treated with IABP compared to control. Only 2 studies directly compared outcomes in patients supported by the IABP vs Impella®. The results were inconsistent. 10/12 studies found no difference in mortality between intervention and control arms. Notably, one study claimed reduced mortality with IABP vs control, and one study concluded that Impella® improved survival rates when compared to IABP. The average 30-day all-cause mortality in patients treated with IABP was 42.5% vs 37% in patients treated with Impella® which is consistent with historical studies.

Conclusion AMI-CS represents an important cohort of patients in whom conducting RCTs is difficult. As a result, the literature is limited. Analysis of the studies available suggests that there is insufficient evidence to support superior survival in those supported by IABP or Impella® when compared to control. Despite noting positive findings in terms of demonstratable haemodynamic support associated with the Impella® in porcine models these benefits have not been observed in human studies. This literature review failed to establish superior survival associated with the use of IABP or the Impella®, however limitations of the studies have been discussed to outline suggestions for future research.

Conflict of Interest None

44 DEDICATED BIFURCATION STENTS VERSUS DRUG ELUTING STENTS IN CORONARY BIFURCATION LESIONS: A SYSTEMIC REVIEW AND META-ANALYSIS

[1]Christopher Uy, [1]Ahmed Alsunbuli, [2]Veniza Maravilla. *[1]East Sussex Healthcare NHS Trust; [2]Royal Free London NHS Trust*

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Introduction Coronary bifurcation lesions (CBL) constitute a fifth of all coronary lesions and have no optimal method for treatment.(1) Multiple trials were conducted to investigate different modalities of treatment such as drug eluting stents, bioresorbable scaffolds, and dedicated bifurcation stents.(2) There are limited data discussing the clinical outcomes of these trials as most tend to report procedural outcomes.(3) This systematic review aimed to compare clinical outcomes of DBS compared to DES, while excluding bare metal stents and bioresorbable scaffolds.(4)

Methods Following the PRISMA guidelines,(5) a systematic data search was conducted including EMBASE, PUBMED, MEDLINE, CINAHL, Cochrane database, TRIP database, and clinicaltrials.gov. Inclusion criteria were for prospective two-arm randomised trials published between the years from 2015 to 2018 comparing DBS and DES exclusively and reported clinical outcomes including cardiac death, myocardial infarction, target lesion revascularisation, and stent thrombosis. Risk of bias was assessed using Cochrane risk of bias assessment tool RoB1.(6) Two reviewers extracted data independently using Microsoft Excel 365 ProPlus. Meta-analysis is performed by restricted maximum-likelihood method comparing relative

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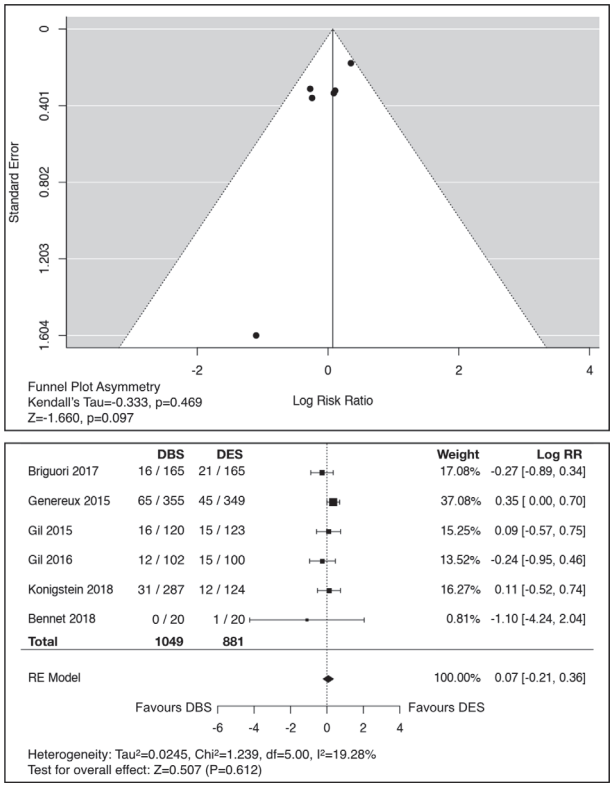

Abstract 44 Figure 1 Funnel plot (above) and forest plot (below) of the meta-analysis for major adverse life events (MACE) of DBS versus DES in the treatment of CBL

Abstract 44 Table 1 Patients characteristics. DBS: dedicated bifurcation lesions, DES: drug eluting stents

	DBS	DES	P-value
Participants	1049	881	-
Age	65.11 (± 10.36)	65.13 (± 9.66)	0.52
Gender (Male)	74.17%	75.71%	0.44
Acute coronary syndrome	19.92%	17.25%	0.74
Hypertension	76.26%	63.87%	0.68
Diabetes	29.27%	23.93%	0.71
Smoking	29.27%	20.78%	0.70
Chronic Kidney disease	5.91%	5.82%	0.86
Previous myocardial infarction	31.17%	30.51%	0.97

Abstract 44 Table 2 The means of the clinical outcomes of the two arms MACE: major cardiac events

Outcome	DBS	DES	P-value
MACE	13.3%	12.4%	0.612
Cardiac death	0.1%	0.7%	0.268
Myocardial infarction	8.2%	7.5%	0.574
Target lesion revascularisation	5.9%	4.9%	0.809
Stent thrombosis	1.0%	0.6%	0.755

risks (RR) of clinical outcomes,(7) using MAJOR R pack through Jamovi platform and reported in logarithmic relative risk (Log RR).(8, 9)

Results Six trials comparing DBS and DES involving 1914 patients met the inclusion criteria. Most of the studies were conducted in Europe, participants' ages were DBS: 65.56, DES: 65.18 (p-value = 0.52). Participants of male gender were DBS: 74.9% DES: 77.5% (p-value = 0.44) and patients with smoking history were DBS: 28%, DES: 27.36% (p-value=0.70). Patients who presented with acute coronary syndrome were a fifth of all participants (p-value = 0.74). Around 70% of each arm participants had hypertension, and around 25% suffer from diabetes, as well as smoking. A third of participants had previous myocardial infarction (Table-1). Clinical outcomes were reported for 12 months in all study but one (Genereux et al. – 9 months).(10)

There was only one cardiac death in the DBS arm compared to six cardiac deaths in the DES arm. A meta-analysis was performed for MACE (Figure-1), myocardial infarction (MI), stent thrombosis (ST), and target lesion revascularisation (TLR). Major adverse cardiac events (MACE) were 13.3% for DBS and 12.4% for DES with a RR of 1.078 (Log RR = 0.07, p-value = 0.612) (Figure-1 & Table-2). Other measured outcomes showed no superiority for either arms.

Conclusion When comparing the one-year clinical outcomes for coronary bifurcation lesions stenting; there was no statistically significant difference between dedicated bifurcation stents and drug eluting stents regarding MACE, CD, MI, TLR, and ST.

Conflict of Interest None

45 FEASIBILITY AND IMMEDIATE SAFETY OF DISTAL TRANS RADIAL ACCESS IN CORONARY INTERVENTION: A UK CENTRE EXPERIENCE

[1]Subhabrata Dutta, [2]Kazi Asif Adnan, [3]Hashim MS Hashim, [4]Vinod Venugopal, [4]Juan Fernandez. *[1]Dr; [2]Sandwell and West Birmingham Hospitals NHS Trust; [3]Nottingham University Hospital; [4]United Lincolnshire Hospitals NHS trust*

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Background and Aim Over the last few years, there has been a drive towards using distal trans-radial (dTRA) access for coronary angiography and interventional procedures. The suggested benefits are better radial arterial patency post-procedure, relatively rapid haemostasis and improved ergonomics for left radial access. The findings from observational studies are promising and a large multicenter randomized trial is now underway. However, so far there is no published data from any centers in the UK about its use and safety. Due to the various potential benefits, this approach was used in our institute which is a busy District General Hospital in the UK providing tertiary cardiology service to a population of 750,000. Data was collected prospectively for the initial 100 cases to assess feasibility and immediate safety of dTRA.

Methods Patients included were from acute and elective cases under the care of 2 consultants where a strong distal radial pulse was palpable. Operators included 2 consultants, 1 senior interventional fellow and 2 Specialty registrars. Arterial puncture was performed using seldinger technique by manual palpation; use of ultrasound was optional. 6 Fr radial glide sheath was used for all cases. Haemostasis was

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