with iatrogenic dissection accounting for nearly half (44.6%). There was a non-significant trend towards major adverse cardiovascular events (MACE) occurring more frequently in those undergoing PCI (18% vs 11%; P=0.067) driven by revascularisation (5% vs 1%; P=0.036). Median follow up was 2.7 years.

**Conclusions** PCI in SCAD is most often performed in higher risk cases. Whilst overall complication rates were similar to those widely reported, clinically significant complications were uncommon and most interventions in this context were associated with improved angiographic endpoints.

**Conflict of Interest** NA

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**Abstracts**

**31**

**TETRAMETHOXYSTILBENE-LOADED LIPOSOMES POTENTIATE SMALL CORONARY ARTERIAL DILATOR FUNCTION, IN AN ACUTE HYPERTENSION MURINE MODEL, EX VIVO**

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**Introduction** The methylated analogue of the polyphenol Resveratrol (RV), 2, 3', 4, 5'-Tetramethoxy stilbene (TMS), displays significantly more antioxidant effects than RV and is a potent inhibitor of CYP1B1, shown to contribute to the development of hypertension. While TMS bioavailability is low, liposomes are a promising modality for TMS encapsulation and delivery to improve uptake into tissues. The objective of this study was to determine the effect of TMS, delivered via liposomes, on endothelial cell viability and vasodilator responses of isolated coronary arteries, after acute pressure elevation, ex vivo, and assess mechanisms involved.

**Methods** Liposomes were synthesised using a thin-lipid film process and characterised using UV-Vis and fluorescence spectroscopy, Dynamic Light Scattering and Fourier-transform infrared spectroscopy. The effect of TMS-loaded liposomes on human coronary artery endothelial cell viability was determined in vitro using Alamar Blue assay. Small coronary arteries were isolated from male Wistar rats (in accordance with Home office guidelines and institutional ethics approval) and their function assessed at 60mmHg and following acute pressure elevation (150 mmHg, 30 minutes) to mimic a hypertensive environment. Endothelial-dependent (acetylcholine, ACh 1.0 nM – 1.0 mM) and independent (Sodium nitroprusside -SNP, 100 µM, Papaverine -PAPA, 100 µM) responses were measured in the presence/absence of TMS and TMS-loaded liposomes, using pressure myography. Data are expressed as mean percent dilation ± SEM.

**Results** TMS-loaded liposomes (157 ± 6 nm diameter; zeta potential -13.13 ± 0.67 mV) maintained cell viability without toxicity, following 48h incubation. Acute pressure elevation significantly reduced endothelial-dependent dilator responses but did not affect endothelial-independent vasodilation. Co-incubation with TMS liposomes significantly improved endothelial-dependent vasodilation (@ ACh 100 µM: 86.06 ± 5.63% and 89.84 ± 3.05% for TMS liposomes and TMS solution respectively, compared to control PSS 38.52 ± 6.34; n = 5; p ≤ 0.01). The potentiated dilator response was sustained over a longer period (4h) with TMS liposomes, when compared to TMS solution (@ ACh 100 µM: 77.32 ± 8.70% vs 41.70 ± 8.70%; n = 4; p ≤ 0.05).

**Conclusion** TMS-loaded liposomes have the potential to restore attenuated coronary endothelial-dependent dilator responses in an acute hypertensive environment. Our findings will help establish whether TMS-loaded liposomes are a valid therapeutic drug-delivery strategy in hypertension.

**REFERENCES**


**Conflict of Interest** None

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**32**

**DOES ‘REAL-WORLD’ MECHANICAL CIRCULATORY SUPPORT MATCH RANDOMISED CONTROLLED TRIALS? THE UNITED KINGDOM IMPELLA (UKPELLA) REGISTRY**

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10.1136/heartjnl-2020-BCS.32

**Background** Impella utilisation is increasing but reimbursement and usage patterns vary significantly around the world. The National Institute for Health and Care Excellence (NICE) recently approved the use of Impella for high-risk percutaneous coronary intervention (PCI) in centres with specific expertise in the use of mechanical circulatory support and with specific arrangements for governance, audit and consent in place.

**Hypothesis:** In the United Kingdom (UK), due to increased selection, Impel is used in higher-risk cases than in randomised controlled trials (RCT).

**Methods** All patients undergoing Impella implants between 2008 - 2019 in the four highest volume UK Impella centres (St. Thomas’ Hospital and King’s College Hospital, London; Queen Elizabeth Hospital, Birmingham; Manchester Royal Infirmary, Manchester) were included. Demographic, clinical, procedural and outcome data were extracted from electronic health records. Patients were stratified by the presence of cardiogenic shock at presentation. Pre-procedural characteristics and outcomes (30-day and 1-year all-cause mortality) were compared to the BCIS-1, PROTECT-2 and IABP-SHOCK2 trial cohorts respectively. Multivariate logistic regression analysis was used to identify independent predictors of complications. Continuous data are presented as mean ± SD or median (IQR) depending on normality.

**Results** Two-hundred and thirty-four patients were included. The indication was cardiogenic shock in 83 (35.5%) and high-risk PCI in 146 (62.4%); of the latter 58.9% had acute coronary syndromes and 41.1% were elective) and bailout in 2.1%. PCI was performed via femoral access in 55.6%. Patients undergoing high-risk PCI were older than those with cardiogenic shock (73.3 ± 10.8 years vs. 59.9 ± 14.0 years, p<0.001), as well as being more likely to have a history of previous myocardial infarction (52.1% vs. 26.3%, p<0.001), chronic kidney disease (24.7% vs. 13.9%, p=0.005) and peripheral vascular disease (17.1% vs. 6.3%, p=0.005).

High-risk PCI patients in UKPELLA had a higher BCIS-Jeopardy Score, more left main disease and underwent more calcium modification but had a higher left ventricular ejection fraction.
UKpella had a higher 30-day mortality than RCT patients (56.1% versus 40.5%, \( p = 0.034 \)) but 1-year mortality was similar. Figure 1 demonstrates mortality over follow up.

Major bleeding (Bleeding Academic Research Consortium scale 3-5) occurred in around 20% of both shock and high-risk PCI cases. Femoral access for PCI was related to the risk of bleeding in high-risk PCI (odds ratio 2.65 [1.04-6.74], \( p=0.040 \)) but not in cardiogenic shock. Vascular complications occurred more frequently in shock than high-risk cases (13.6% vs. 9.0%). Figure 2 shows the rates of implants, bleeding and vascular complications.

**Conclusions** Patients selected for Impella in the UK are a group with a particularly adverse prognosis, in terms of baseline predictors of risk as well as higher short- and medium-term mortality than in RCTs. Bleeding and vascular complications occur in an important minority. Randomised clinical trials are required to define a population in whom the balance of benefit and risk is most favourable.

**Conflict of Interest** None

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**Abstract 32 Table 1** Demographics, procedural details and outcome

<table>
<thead>
<tr>
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<th>Cardiogenic Shock</th>
<th>High Risk PCI</th>
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<tbody>
<tr>
<td></td>
<td>UKpella N = 83</td>
<td>IABP-SHOCK 2 N = 598</td>
</tr>
<tr>
<td>Age (years)</td>
<td>69.8 ± 14.0</td>
<td>70 (58-78)</td>
</tr>
<tr>
<td>Male Gender (%)</td>
<td>81.9</td>
<td>68.9*</td>
</tr>
<tr>
<td>LVEF (%)</td>
<td>28.5 ± 11.9</td>
<td>35 (25-45)</td>
</tr>
<tr>
<td>Cardiac Arrest (%)</td>
<td>56.1</td>
<td>45.0</td>
</tr>
<tr>
<td>SYNTAX-1</td>
<td>27.7 ± 12.2</td>
<td>N/R</td>
</tr>
<tr>
<td>BCIS-JS</td>
<td>10 (6 - 12)</td>
<td>N/R</td>
</tr>
<tr>
<td>Multivessel Disease (%)</td>
<td>73.5</td>
<td>78.7</td>
</tr>
<tr>
<td>Left Mainstem Disease (%)</td>
<td>34.6</td>
<td>N/R</td>
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<tr>
<td>Final Patent Conduit (%)</td>
<td>27.2</td>
<td>N/R</td>
</tr>
<tr>
<td>Calcium Modification (%)</td>
<td>12.0</td>
<td>N/R</td>
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<tr>
<td>Bifurcation Lesion (%)</td>
<td>24.1</td>
<td>N/R</td>
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<tr>
<td>30 Day Mortality (%)</td>
<td>56.1</td>
<td>40.5*</td>
</tr>
<tr>
<td>1 Year Mortality (%)</td>
<td>63.0</td>
<td>51.5</td>
</tr>
</tbody>
</table>

* indicates statistically significant difference between UKpella and RCT data, \( p < 0.05 \). Note for continuous variables, comparisons could only be made to BCIS-1 given the availability of raw data. N/R = not reported

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**Abstract 32 Figure 1**

**Abstract 32 Figure 2**

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**Abstract 32**

**33 PERCUTANEOUS CORONARY INTERVENTION IN ELDERLY PATIENTS – TEN YEARS’ EXPERIENCE FROM A LARGE NON-SURGICAL CENTRE**

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**Background** With an ageing population, the need for treating coronary artery disease in the elderly using percutaneous coronary intervention (PCI) is on the rise. Technical advances, better peri-procedural pharmacology and greater operator experience have led to improved outcomes after PCI. Octogenarians as a group, however, have been underrepresented in randomised clinical trials for coronary revascularisation. Observational studies therefore provide useful insights into the