revascularisation (TVR) and MACE (combination of cardiac death, target-vessel MI and target vessel revascularisation).

**Results**

30 patients with a mean age of 73 (range 56–90 years) were treated with PCI to SVG in context of ACS of which 30% were ST-segment elevation myocardial-infarction (n=9), 80% males (n= 24), 57% were diabetic (of those 71% were insulin dependent), 40% (n=10) had renal-dysfunction (GFR < 60 ml/min) and 38% had impaired left ventricular function (ejection-fraction < 50%). Based on the angiographic review, 30% (n=9) of grafts were considered degenerate (ectatic, aneurysmatic and/or thrombotic). During the procedure, the majority (86%) used semi-compliant balloons and 47% non-compliant balloons, thrombus aspiration was used in 17% cases and the use of GPIIb/IIIA inhibitors was 10%. Slow-flow/ no-flow occurred in 27% (n=8) of procedures necessitating use of intra-coronary vasodilator in 10% of cases (n=3) with overall success rate of 96% (n= 29). In 5 cases (16%), drug eluting balloon (DEB) was used, the others (84%) utilised stents (n=25). The average stent diameter was 3.4 mm and length was 25 mm and average DEB diameter was 3.4 mm and length was 31 mm. There were 2 deaths before discharge. During a median follow-up of 1400 days (46 months), cardiac death occurred in 9 patients (30%), target vessel MI in 10% (n=3); TLR was 17% (n=5), TVR 17% (n=5) and overall MACE rate was 47% (n=14).

**Conclusions**

Our data suggest that the long-term outcomes following intervention to re-stenosis of SVG-PCI in ACS has an unacceptably high MACE rate in this small study group. Given this, maybe we should consider PCI to native circulation if there is such an option especially given the current improvement in complex PCI techniques.

**Conflict of Interest**

None

### IMPACT OF USING THE PAPWORTH HAEMOSTATIC CHECKLIST ON CARDIAC SURGERY PATIENT OUTCOMES AT QUEEN ELIZABETH HOSPITAL BIRMINGHAM, UNITED KINGDOM

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**Background**

Mediastinal bleeding is a common, major complication of cardiac surgery. Treatment requires patients to return to theatre to identify the source of bleeding which is associated with significant mortality and immediate postoperative morbidity (notably acute renal failure, infection, and stroke) as well as the risks of allogeneic blood product use, mechanical ventilation and longer ICU stay.(1,2) The Papworth Haemostatic Checklist (PHC) is an effective tool to reduce postoperative mediastinal bleeding in cardiac surgery by systematically checking surgical sites and coagulation status before sternal wire insertion.(3–5) A pilot study showed significantly reduced rates of bleeding, re-exploration and blood product consumption in 5000 patients undergoing cardiac surgery over a 2-year period. The checklist’s success won a nomination for a national patient safety award. Aims and objectives: This quality improvement project (QIP) aims to improve patient outcomes at Queen Elizabeth Hospital Birmingham (QEHB) by implementing the PHC.

**Methods**

We retrospectively extracted data from electronic health records for 150 patients undergoing cardiac surgery from Dec’20-Aug’21. Baseline demographics and postoperative outcomes (mediastinal blood loss, re-exploration and blood product transfusion) were analysed.(6)

**Results**

- Median blood loss 12 h post-operation was 429.81 ml (IQR 243.75). 3.33% underwent reexploration for bleeding and 46.6% received blood products. Median ICU stay was 3 days (IQR 2) and 2% of patients died.

**Conclusion**

This first cycle of the QIP showed significant complications from bleeding in terms of patient outcomes and cost to QEHB.6 Following discussion, the department decided to implement the checklist to improve this. Our next steps are to familiarise operating teams with the PHC through posters and staff briefings. The anaesthetics team will be responsible for going through the checklist during the operation. We will subsequently undertake a second cycle of data collection and analysis for a further 150 patients.

**Conflict of Interest**

None
A COMPARATIVE STUDY OF THE ECONOMICS AND SAFETY OF INTRAVASCULAR LITHOTRIPSY VERSUS ROTATIONAL AHERECTOMY FOR CALCIUM MODULATION IN PERCUTANEOUS CORONARY INTERVENTION: A UK TERTIARY CENTRE EXPERIENCE

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Introduction Intravascular lithotripsy (IVL) [Shockwave Medical Inc] is a relatively novel method of treating complex, calcified coronary lesions and is becoming a fundamental staple of the coronary calcium modulation algorithm. When compared to rotational atherectomy (RA) [Boston Scientific], it has lower procedural complication rates. Objective: To compare the real-world costs and utilisation of resources, procedural and 30 days complications, radiation exposure and contrast volume usage between IVL and RA at the Trent Cardiac Centre (TCC), Nottingham University Hospitals NHS Trusts - a tertiary UK cardiac centre.

Method Consecutive patients undergoing percutaneous coronary intervention (PCI) where IVL was utilised (n=12) were compared to consecutive patients where RA was utilised (n=12) in 2021/22 at TCC. Patient's data were electronically retrieved from the hospital’s cardiovascular electronic system TOMCAT [Philips]. Patients' demographics and risk factors, periprocedural events, procedural time, contrast volume and radiation doses were analysed and compared in both groups. Incidence of major adverse cardiovascular events (MACE) and hospital re-admissions over the following 30 days were recorded. Cost data was calculated using the NHS Patient Level Information and Costing System (PLICS). Continuous data are expressed as a mean ± 2 standard deviations and p-values calculated using one-tailed Student’s t-test.

Results The mean age was 74.8 ± 8.8 years in the IVL groups vs. 77.2 ± 9 years in the RA group, p=0.26. Numerically, the proportion of females was higher in an IVL group as well as the presence of vascular risk factors such as hypertension, hyperlipidaemia, and smoking history. In the RA group, two procedural complications were reported (side branch occlusion and coronary dissection) whereas only one complication (femoral site access haematoma) was recorded in IVL group (p<0.07). No MACE events at 30 days were recorded in either group. There were no significant differences in procedural time (mean difference 15 mins, IVL = 128 ± 29 mins vs. RA = 113 ± 27 mins, p=0.22), contrast volume use (mean difference 34 ml, IVL = 210 ± 48 ml vs. RA = 176 ± 47 ml, p=0.16) or Dose Area Product (DAP) radiation exposure (mean difference 956 Gycm², IVL = 4803 ± 1,604Gycm² vs. RA = 5,759 ± 3,326Gycm², p=0.29). The cost of the IVL balloon was identical in cost to the Rota-Link™ plus in our institution, at around £1440. There was no statistical difference in the procedural costs between the two groups (procedural costs mean difference £368, IVL = £3759 ± 867 vs. RA = £4128 ± 901, p=0.26), but the overall costs, which included inpatient and outpatient costs, pathology, radiology and staff costs projected out to 1 year, were significantly lower with PCI with IVL vs. PCI with RA (overall costs mean difference £3,120, IVL = £10,626 ± 2,876 vs. RA = £13,746 ± 2,536, p<0.04) (Figure1).

Conclusion There were no significant differences in levels of radiation exposure, contrast volume used or length of the procedure comparing IVL with RA. There was significant overall cost reduction with the use of IVL in complex PCI procedures with cost effectiveness being predicted over the following year. Future randomised trials of new PCI technologies should include a formal health economic analysis.

Conflict of Interest None

69 REFERRAL TO ANGIOGRAPHY FOR NON-ST-ELEVATION ACUTE CORONARY SYNDROME PATIENTS: ARE WE FOLLOWING THE LOCAL GUIDELINES?

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Background National Institute of Clinical Excellence (NICE) guidance suggests that patients with non-ST elevation myocardial infarction (NSTEMI) should undergo invasive angiography within 72 hrs of admission. Delivery of timely angiography is challenging; the aim of this study was to assess compliance and identify gaps at a regional level.

Methods We performed a retrospective analysis of all patients transferred to Liverpool Heart and Chest Hospital (LHCH) for invasive management of NSTEMI between March 2019 to February 2020. We identified multiple time points along the ACS patient pathway including: time taken from local hospital admission to referral to LHCH; time taken for referral acceptance; and time taken from LHCH acceptance to admission to LHCH.

Results 1723 patients (mean age 66±12 years; 37.2% female) with NSTEMI were included in the analysis-Table 1. From first hospital admission to transfer to tertiary centre catheter laboratory for angiography, the target of 72 hrs was achieved in only 21% of patients. Median time from admission to district general to admission to tertiary centre was 110.00 hr (4 days and 14 hrs). 40% of patients were referred within 24