Results After exclusion, 198 patients (7.2% undergoing PCI) had an AKI: 14.1% of these AKI patients presented in cardiogenic shock, whilst 5.1% of patients had an elevated ESR and/or eosinophil count and were classified as atheroembolic renal disease (AERD). Statistically significant risk factors for developing AKI were increased age (OR 1.04, 95% CI 1.03 to 1.06, p<0.0001), diabetes (OR 1.56, 95% CI 1.09 to 2.21, p=0.0129), heart failure (OR 2.30, 95% CI 1.22 to 4.15, p=0.0073), femoral access (OR 1.47, 95% CI 1.02 to 2.10, p=0.0357) and cardiogenic shock on arrival (OR 2.92, 95% CI 1.72 to 4.81, p<0.0001). Significant association with mortality at 1-year was found in patients with an AKI (OR 4.33, 95% CI 2.89 to 6.43, p<0.0001), age (OR 1.08, 95% CI 1.06 to 1.09, p<0.0001), heart failure (OR 1.92, 95% CI 1.05 to 3.44, p=0.032), femoral access (OR 2.05, 95% CI 1.41 to 2.95, p=0.0001), and cardiogenic shock (OR 3.63, 95% CI 2.26 to 5.77, p<0.0001). Analysis of survival demonstrated a hazard ratio of mortality of 4.23 in the AKI group when compared to non-AKI patients (95% CI 3.00 to 5.98, p<0.0001) (see figure 1). Significant associations with 1-year mortality in AKI patients were age (OR 1.04, 95% CI 1.03 to 1.07, p=0.011), and cardiogenic shock (OR 4.40, 95% CI 1.56 to 10.90, p=0.004). Patients with AERD AKI had a 1-year mortality rate of 40.0% and a 1-year renal replacement therapy requirement of 22.2%. This was compared to a 1-year mortality rate of 33.8% in AKI patients of any aetiology, and a 1-year renal replacement therapy requirement of 8.0%.

Conclusion AKI after urgent PCI is strongly associated with worse outcome. Risk factors for developing AKI were age, diabetes, heart failure, femoral access and cardiogenic shock. Risk of mortality at 1-year were the development of AKI, age, femoral access and cardiogenic shock. AERD occurred in 5.1% of those who develop an AKI and is an often-overlooked condition with poor outcome and likelihood of long-term renal replacement requirement. Early identification of patients is important to provide appropriate supportive care.

Conflict of Interest None

Introduction It is well documented that part-task trainers are highly effective in practical skills training, including pericardiocentesis. However, the use of immersive simulation to create high-fidelity clinical scenarios for summative assessment of pericardiocentesis is a novel approach. Cardiology trainees in the UK are expected to demonstrate Level 3 competency (perform the procedure unsupervised and deal with complications) in pericardiocentesis in order to meet the curriculum requirements to achieve their Certificate of Completion of Training (CCT). Given the high risk of complications associated with pericardiocentesis, it is now increasingly performed by interventional cardiologists in specialist centres, resulting in fewer opportunities for trainees to observe and practice this procedure during their training. This has become more apparent during the COVID-19 pandemic when normal clinical activities were largely put on hold, resulting in an increase in demand for simulation-based training and assessment of practical procedures.

Methods Four cardiology trainees attended a series of two teaching sessions held 1 month apart which involved an immersive simulated scenario on the management of a patient with life-threatening cardiac tamponade. This included a period of teaching from a qualified trainer, followed by an observed assessment whereby trainees attended to a simulated patient and initiated relevant treatment, including successfully performing pericardiocentesis whilst interacting with colleagues and the patient. The procedure was performed using an ‘Ultrasound Guided Pericardiocentesis Simulator’ and a patient actor. Trainees were assessed using the Joint Royal Colleges Physician Training Board (JRCPTB) Directly Observed Procedures (DOPS) proforma for pericardiocentesis. The assessment comprised of 9 different domains graded (A-F), and a point score (1-6) was assigned according to their level of competency, generating an overall assessment score out of 54 points and mean score out of 6 points.

Results Three out of the 4 trainees improved their mean assessment scores by an average of 22% in subsequent sessions (figure 1). Trainee 1 was already fully competent on initial assessment (initial mean score 6/6), demonstrated sustained competency throughout subsequent assessments and consequently fulfilled their training requirements for pericardiocentesis.

Conclusion Immersive simulation is an effective, low-risk and high-fidelity method of training and assessment of pericardiocentesis for cardiology trainees. Although additional trainee
data will be required to comprehensively validate it as an effective assessment tool for pericardiocentesis, during times where clinical experience is limited, immersive simulation can be an essential alternative training tool to allow trainees to meet requirements for their training and maintain clinical competencies.

Conflict of Interest
None

REFERENCES

INTRA-AORTIC BALLOON PUMP INSERTION IN THE MANAGEMENT OF POST-MI CARDIOGENIC SHOCK

Ghaith Maqableh, Louisa McGonigal, Eleanor Costick, Mohammad Osheiba, Anthony Mecbery, Sohail Q Khan.
Queen Elizabeth Hospital Birmingham, Birmingham, UK;
University of Birmingham

10.1136/heartjnl-2021-BCS.74

Introduction Cardiogenic shock is a complication of acute myocardial infarction (MI) that occurs in 7-8% of patients. It is the leading cause of death post-MI, with an estimated in-patient mortality of 50%. Historically, intra-aortic balloon pump (IABP) insertion has been widely used with the aim of improving cardiac output and hence reducing mortality. However, the large, randomized controlled ‘IABP shock-II’ trial found no significant improvement in 30-day, 1-year or 6-year outcomes, including all-cause mortality. International guidelines have downgraded the IABP from a class I to class IIIa and it is therefore no longer recommended. In this study, we assess the frequency of IABP insertion for cardiogenic shock following updated international guidelines.

Methods All cases that presented with acute myocardial infarction at Queen Elizabeth Hospital between January 2018 and December 2019 (n=59) were retrospectively reviewed. There were 1904 cases and 59 had cardiogenic shock. We compared baseline characteristics, complications and mortality between cardiogenic shock patients with and without IABP insertion.

Results 19 of the 59 patients with cardiogenic shock had IABP insertion (73.7% Male, mean age 65.6± 11.3 year). Diabetes, hypertension and previous myocardial infarction were identified in 36.8%,36.8% and 42.1% respectively. 47.4% were ventilated at the time of the procedure, with a mean pH of 7.16 and mean lactate of 8.1mmol/L. STEMI was present in 84.2% of the patients, and the type C lesion was the most common finding on the angiogram (68.4%). On the other hand, 34 patients with cardiogenic shock did not receive IABP (70.6% Male, mean age 68.9± 11 year). Diabetes, hypertension and previous myocardial infarction were identified in 25.5%,47% and 20.6% respectively. 44.1% were ventilated at the time of the procedure, with mean pH of 7.19 and mean lactate of 6.6 mmol/L. STEMI was presented in 82.4% of the patients, and the type C lesion was the most common finding on the angiogram (58.8%). Table 1. The in-hospital mortality of the IABP group was 68.4% and 41.2% in the non-IABP group. Kaplan-Meier curve showed that the 30-day mortality probability was 68.4% for the IABP group, and 44.1% for the non-IABP group. Figure 1. 11 of the 19 patients with IABP insertion had complications related to the device.