44   SWINDON HEART ATTACK PROGRAM TO EVALUATE AND IMPROVE TIMING OF ANGIOGRAPHY IN NSTEMI (SHAPE-IT NSTEMI)

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Aim To improve NSTEMI care; with a particular focus on the timing of angiography in NSTEMI and same day discharge after angiography and follow on percutaneous coronary intervention (PCI).Setting: Single site non-surgical centre in the NHS, with a national target for 75% of NSTEMI patients to have angiography within 72 hours of admission.

Methods In August 2020 we invited a change expert to facilitate a session. Stakeholders included: Nurses- ACS/ACU/Cardiology Ward/Cath Lab/Rehab/MINAP audit/Matron; Head of Service; Site managers; Radiographers; Cardiac physiologists; Emergency Physicians; Paramedics; Cardiologists and our local pathway manager. The session focussed on heart attack care and set realistic goals. The patient pathway, current model of care and future directions were discussed, and an improvement plan was made.

The goals included

- Improving patient experience
- ≥ 75% of angiography within 72 hours of admission for NSTEMI
- Increased same day discharge (golden patient)
- Direct admission to a free bed on the Acute Cardiac Unit (ACU) for high risk NSTEMI from the community via the ambulance serviceThe key steps to achieving change were
- Smart listing –cases were labelled NSTEMI or NSTEMI GP (golden patient) on the ordering system – started in April 2021
- Buy in from operators for a NSTEMI patient on the list each morning ahead of elective work
- Recovering PCI cases in the general cardiology ward
- NSTEMI patient information, a new leaflet given to patients by the rehab team

A half an hour biweekly meeting was held on Teams facilitated by our pathway manager. Progress was tracked, these meetings also generated ideas.
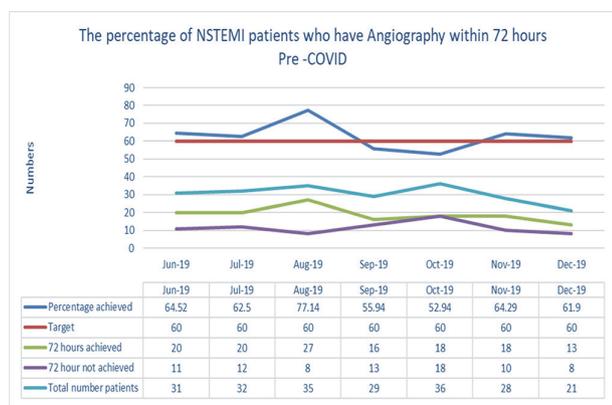
Abstract 44 Figure 1 Angiography for NSTEMI patients within 72 hours of admission pre improvement
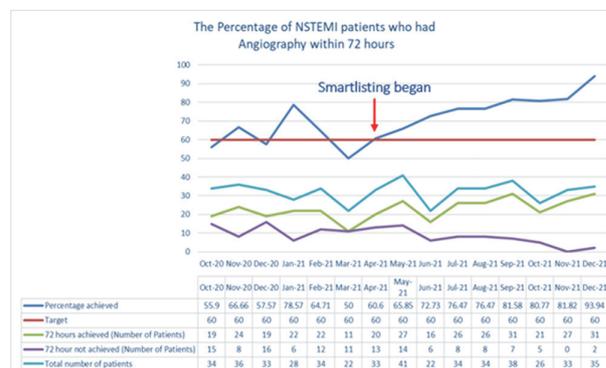
Abstract 44 Figure 2 Angiography for NSTEMI patients post improvement

Results The project started in September 2020. The percentage of NSTEMI patients undergoing angiography increased steadily from a baseline of 60% to the most recent figure of 93%. In the six months following the introduction of smart listing, the same day discharge rate, or 'Golden Index' was 41% up from 27% in the preceding 6 months. On a base of 400 MINAP verified NSTEMI patients that is a saving of 56 hospital bed days.A patient satisfaction survey following discharge of 15 randomly selected recent patients showed an 87% understanding rate of their diagnosis and treatment.

Conclusion A local approach to pathway management for NSTEMI, involving stakeholders was successful in improving care, preserving income, freeing up hospital beds and will hopefully continue to deliver further benefits.

Conflict of Interest None To Declare

## 45   OUTCOME OF STEMI PATIENTS ADMITTED THROUGH INTER-HOSPITAL TRANSFER VS DIRECT ADMISSION TO PPCI CENTRE

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Background Primary PCI is the treatment of choice in patients presenting with ST elevation myocardial infarction. . The delay in reperfusion leads to increased morbidity and mortality. The secular trends in the impact of inter-hospital transfers (IT) on mortality in the United Kingdom (UK) have not been recently investigated.

Aim To investigate the impact of Inter-hospital transfers on in-hospital major adverse cardiovascular events and 5 years mortality among patients admitted to a tertiary care Centre in the UK

Methods The patient level data on STEMI patients admitted between 2011 to 2021 were retrospectively collected in line with (NICOR) data fields. We compared baseline characteristics and mortality data of IT group to age and gender matched DA group.Primary end point was in hospital major cardiovascular complications and secondary end point was mortality at five years for patients admitted from 2011 to 2016. Of 4269 patients, 3044 (71%) were directly admitted and 1225 (29%) presented by inter hospital transfer. Inter hospital transfer group were more likely to present with cardiogenic shock and their median call to balloon time was 108 minutes longer than direct admission group. There was no
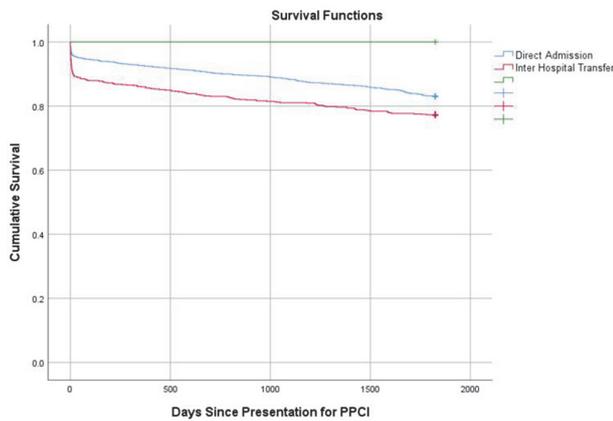
Abstract 45 Figure 1

significant difference in MACE during hospital admission between the two groups except for in-hospital mortality which was 5.26% higher in inter hospital transfer group. Kaplan Meier Survival analysis showed that the likelihood of survival at five years was 83% for direct admission vs 77.3% for inter hospital transfer with P value < 0.01. Additionally, one month mortality was significantly higher among inter hospital transfer group.

Conclusion In all the cohort of patients, in-hospital mortality, and five years mortality was significantly higher in inter hospital transfer group compared to direct admission group.

Conflict of Interest non

GLUCOSE TRANSPORTER GLUT4/NITRIC OXIDE SYNTHETASE PATHWAY MEDIATES THE CARDIOPROTECTIVE EFFECTS OF THE INTRAVENOUS IMMUNOGLOBULINS TO THE DIABETIC HEART

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Background Ischemic heart disease (IHD) in combination with Diabetes Meletus (DM) is a challenge of recent research and the role of intravenous immunoglobulin (IVIG) in the protection of the heart against ischemia/reperfusion (I/R) injury is not completely understood. The aim of this study is to investigate the role of IVIG in the protection of the diabetic heart against I/R injury.

Methods Hearts isolated from adult nondiabetic and diabetic Wistar rats (n=8) were used in this study. Hearts were treated with IVIG either two hours before sacrifice, before ischemia or at reperfusion. Hemodynamics data were acquired online using software designed specifically for that purpose. Infarct size was evaluated using 2,3,5-Triphenyltetrazolium chloride (TTC) staining. Expression levels of apoptosis markers (caspase 3 and 8), antioxidant enzymes, superoxide dismutase (SOD) and catalase (CAT) and Glucose transporters, GLUT1 and GLUT4 were evaluated by Western blotting. Pro-inflammatory and inflammatory cytokines were evaluated by enzyme linked immunosorbent assay (ELISA).

Results IVIG treatment abolished the effect of I/R injury in the diabetic hearts when infused at reperfusion in four weeks and six weeks diabetic hearts. Surprisingly IVIG infusion before ischemia protected the four weeks but not six weeks

diabetic hearts. There was a significant (P<0.05) recovery in the hemodynamics and a reduced infarct size. The same treatments significantly (P<0.05) decreased apoptosis markers, pro-inflammatory cytokines and increased the anti-inflammatory cytokines levels. Interestingly, these treatments significantly (P<05) increased eNOS phosphorylation and the expression of GLUT4 but not GLUT1.

Conclusion Treatment of the diabetic heart with IVIG selectively protected the heart at reperfusion in four- and six-weeks diabetic hearts and only when infused before ischemia in four weeks diabetic hearts. This protection followed a pathway using eNOS/Glut4 axis. Acknowledgement: We acknowledge the Health Science Animal facility for providing the animals. This study was supported by grant #MY01/18 from Research Administration, Kuwait University.Key words: Ischemia Reperfusion, Intravenous immunoglobulin, Reactive oxygen species, Glucose transporter 4.

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Conflict of Interest No conflict of interest

DATA INDEPENDENT ACQUISITION MASS SPECTROMETRY IN SEVERE RHEUMATIC HEART DISEASE (RHD) IDENTIFIES A PROTEOMIC SIGNATURE SHOWING ONGOING INFLAMMATION AND EFFECTIVELY CLASSIFYING RHD CASES

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Rheumatic heart disease (RHD) remains a major source of morbidity and mortality in developing countries. A deeper insight into the pathogenetic mechanisms underlying RHD could provide opportunities for drug repurposing, guide recommendations for secondary penicillin prophylaxis, and/or inform development of near-patient diagnostics.We performed quantitative proteomics using Sequential Windowed Acquisition of All Theoretical Fragment Ion Mass Spectrometry (SWATH-MS) to screen protein expression in 215 African patients with severe RHD, and 230 controls. We applied a machine learning (ML) approach to feature selection among the 366 proteins quantifiable in at least 40% of samples, using the Boruta wrapper algorithm. The case-control differences and contribution to area under the Receiver Operating Curve for each of the 56 proteins identified by the Boruta algorithm were calculated by Logistic Regression adjusted for age, sex and BMI. Biological pathways and functions enriched for proteins were identified using ClueGo pathway analyses.Adiponectin, complement component C7 and fibulin-1, a component of heart valve matrix, were significantly higher in cases when compared with controls (Table 1). Ficolin-3, a protein with calcium-independent lectin activity that activates the complement pathway, was lower in cases than controls (Table 1). The top