AN UNUSUAL PRESENTATION OF CARDIOGENIC SHOCK SUCCESSFULLY MANAGED WITH MECHANICAL CIRCULATORY SUPPORT

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Abstract

Introduction Cardiogenic shock is a pathophysiologically complex and phenotypically diverse clinical syndrome, at the most severe end of the acute heart failure spectrum. Left untreated may lead to multi-organ dysfunction and thus carries very high mortality. Mechanical circulatory support has an evolving role in the management of refractory cardiogenic shock. Challenges remain in the early recognition of the syndrome and timely initiation of treatment, thus specialist shock teams have been developed mainly in the context of acute myocardial infarction cardiogenic shock. Limited evidence exists to support the use of veno-arterial extra-corporeal membrane oxygenation (VA-ECMO) in the context of cardiogenic shock due to drug toxicity, mainly in the form of case reports and case series. We present a case of cardiogenic shock due to drug toxicity, and demonstrate how early recognition and activation of the shock team, timely initiation of VA-ECMO may act as a bridge to recovery and lead to good outcomes in acute heart failure.

Case Report: A 43-year-old woman presented to the Emergency Department, after ingestion of a mixed intentional overdose of olanzapine, mirtazapine, and diazepam. At presentation she was alert and sinus tachycardia was the only abnormal physical finding. Within 3 hours her Glasgow Coma Score fell to E4M5V1 and she was noted to have oculocutaneous, left gaze nystagmus and developed tonic-clonic seizure activity, requiring intubation. Echocardiography revealed severe biventricular failure and subsequently developed ventricular tachycardia with haemodynamic compromise. She received electrical cardioversion, intravenous calcium chloride and sodium bicarbonate, and reverted to sinus tachycardia. She remained dependent on vasopressor and inotropic support, with a rising lactate and was referred to our cardiac centre shock team for consideration of VA-ECMO. High dose insulin with dextrose was administered as per National Poisons Centre. Following a trial of milrinone to minimal effect, she was commenced on VA-ECMO.

Results In the first 24 hours she was weaned from inotropic support, her lactate normalised, and LV function improved to 35% on echocardiography. On day 3 she was decannulated and had a normal echocardiogram the following day. She was stepped down to ward level care on day 7 and discharged home on day 15. At post discharge follow up she was at her baseline physically and had improved mental health.

Conclusion The rapidity of her cardiovascular collapse highlights the need for careful monitoring of these patients, even when clinically stable initially. It also highlights the need for the development of dedicated shock teams and communication pathways for early consideration of mechanical cardiovascular support as a bridge to recovery. Reflecting other case reports, despite severely impaired ventricular function, only a short run of VA-ECMO was necessary and resulted in good recovery.

Conflict of Interest Nil

SAFETY AND EFFECTIVENESS OF ACUTE HEART FAILURE CARE AS OUTPATIENT (SAFE): A META-ANALYSIS OF STUDIES COMPARING OUTPATIENT BASED MANAGEMENT WITH STANDARD INPATIENT CARE

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Introduction Patients with acutely decompensated heart failure (ADHF) are usually admitted to hospital for management. However, there is growing interest in delivering IV diuretic therapy at home, in the community or in hospital day-care units. The safety and effectiveness of out-patient based management (OPM) for ADHF has not been established. Accordingly, we conducted a systematic literature review and meta-
Abstract 126 Table 1  Assessment of Quality for the RCTs comparing OPM vs IPM, using the RoB2 tool

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Abstract 126 Figure 1  OPM vs IPM IV Diuretics 30-day mortality

Abstract 126 Figure 2  OPM vs IPM IV Diuretics: 30-day hospitalisation

analysis to investigate the safety and efficacy of OPM compared to in-patient management (IPM) of ADHF.

Methods A systematic literature review and meta-analysis. Prespecified endpoints were 30-day mortality and 30-day hospitalisation. The meta-analysis was conducted using RevMan 5.4 software.

Results 29 studies of OPM were identified. Only 5 directly compared OPM with IPM -including 3 observational studies [1–3], and two randomised controlled trials (RCTs) [4–5]. In the 5 papers comparing IPM vs OPM, the mean age of the IPM cohort was 77 (compared with 75 in OPM), with a similar proportion of male patients (55.5% vs 55.6%). In the study-level aggregate analysis, 30-day all-cause mortality was 9.3% (121/1303) for OPM, compared with 15.6% (320/2047) for IPM (OR 0.29 (0.09, 0.93) p=0.04) [Fig. 1]. Four studies reported 30-day all-cause hospitalisation; 22.0% for IPM vs 16.8% for OPM (OR 0.30 (0.18, 0.50), p<0.001) [Fig. 2]. However, in the 2 RCTs, we found no difference in 30-day mortality or hospitalisation. Overall risk of bias was low in the trials [Table 1].

Conclusion In observational studies, OPM of ADHF is associated with lower 30-day re-hospitalisation and lower 30-day mortality. Such differences were not observed in two small single-centre RCTs. A substantial multicentre RCT is required to confirm the safety and efficacy of OPM for ADHF.

REFERENCES

Conflict of Interest None

127  A RETROSPECTIVE OBSERVATIONAL STUDY INVESTIGATING HYPERTENSIVE HEART DISEASE IN AN ETHNICALLY DIVERSE SOUTH-EAST LONDON POPULATION

Introduction ESC guidelines emphasise the importance of an aetiology-based approach for the diagnosis and treatment of heart failure. Hypertension is a highly prevalent comorbidity in the heart failure cohort and a significant, potentially reversible, cause of heart failure. Although commonly associated with diastolic impairment, hypertensive heart disease also causes left ventricular systolic dysfunction. We sought to assess the aetologies of heart failure in our ethnically diverse heart failure population with reduced ejection fraction with reduced ejection fraction (HFrEF) cohort, specifically assessing the prevalence of hypertensive heart disease, and further characterising this cohort with respect to both demographics and diagnostic imaging. Methods We retrospectively searched our HFrEF database and included all patients with a new diagnosis of heart failure and an LVEF < 50% from April 2019 – April 2020. Descriptive data analysis was undertaken; statistical analysis was by paired t-test. Results 363 patients met inclusion criteria. 73.8% were male. Mean age was 66 years. Of the total population, 58% were White, 26% Black, 5% Asian, and 12% ‘Other’. 65% had comorbid hypertension. The majority of patients with HFrEF had an ischaemic aetiology (41%), followed by dilated cardiomyopathy (38%), hypertensive heart disease (16%), valvular disease (3%), and other (2%). In the hypertensive cardiomyopathy group, 50% of patients were Black, 38% White, 2% Asian, and 10% ‘Other’. All patients in this cohort had undergone echocardiography, 70% had cardiac MRI (cMRI), 35% had invasive angiography, and 7% had CT coronary angiograms (CTCA). The hypertensive cardiomyopathy cohort had a mean LVEF of 27% and 30% on echo and cMRI, respectively; the difference was statistically significant (p value = 0.004). LHV was identified in 58% and 65% of these patients on echo and cMRI, respectively. A dilated ascending aorta was identified in 3.8% and 20% of these patients on echo and cMRI, respectively. 55% had no late gadolinium enhancement on cMRI; 45% had a non-ischaemic pattern of enhancement. T1