Data	n(%) or Mean±SD
STEMI	5(55.6)
Door to balloon time for STEMI (minutes)	25.7±32
Door to PVAD insertion (minutes)	242±528.9
Prior insertion of intra-aortic balloon pump	8(88.9)
Multi-vessel disease	3(42.9)
Mean Qp:Qs ratio	2.5±1.6
VSD size (cm)	1.9±1.2
Right atrial oxygen saturation	53±15.5
Pulmonary artery oxygen saturation	82±4
Ischemic limb	2(22.2)
Stroke	1(11.1)
Renal replacement therapy	4(44.4)

CONCLUSIONS In this single center PVAD series, use of TandemHeart in postinfarction CS and VSD may improve survival. It provides significant ventricular unloading with improved organ perfusion. Further research into the optimal duration of ventricular support and timing of repair is warranted.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Cardiogenic shock, TandemHeart, Ventricular septal defect closure

TCT-204

Predictors of 30-day mortality and outcomes in patients who receive percutaneous left-ventricular support with an Impella assist device

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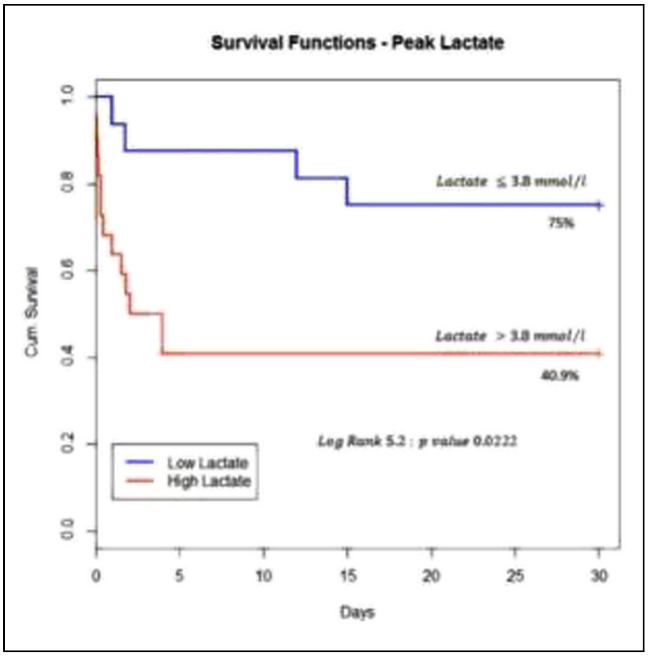
BACKGROUND Cardiogenic shock (CGS) is associated with increased mortality despite advancements in treatment. Although CGS complicates around 10% of acute myocardial infarction, it accounts for almost 90% of mortality in this patient sub-group. The purpose of this study was to determine the predictors of 30-day mortality and outcomes in patients who received percutaneous left ventricular support with an Impella device.

METHODS In this retrospective study, we collected data on all patients who required impella support device for cardiogenic shock. Data on in-hospital mortality and 30 day mortality was also recorded.

RESULTS This single-center registry retrospectively included 41 patients (58.5+16.4 years; 68.2% male) with CGS receiving Impella left ventricular assist device for temporary circulatory support. The demographic characteristics are shown in table 1. The primary end-point was mortality at 30 days. Secondary endpoints included change in plasma lactate levels, early major adverse cardiac and cerebrovascular events and complications. Thirty day mortality was 48.8% in the study population. Successful implantation of Impella was performed in all patients. Following the implantation of Impella, lactate levels decreased from 3.9+3.7 mmol/L to 1.8+2.06 mmol/L at 48 hours. Major bleeding at access site requiring blood transfusion occurred in 4 (9.8%) patients. Hemolysis occurred in 1 patient and no incidence of pericardial tamponade. Lactate level>3.8 mmol/L at admission was identified as a predictor of 30-day mortality.

Table 1. Baseline Characteristics (n=41)

Hypertension, n (%)	28 (68.2)
Diabetes mellitus, n (%)	18 (43.9)
Hypercholesterolemia, n (%)	25 (60.1)
Previous myocardial infarction, n (%)	16 (39)
Previous coronary artery bypass grafting, n (%)	6 (14.6)
Stroke, n (%)	8 (19.5)
Chronic obstructive pulmonary disease	2 (4.9)
Inotropes and vasopressors, n (%)	25 (61)
Mechanical ventilation, n (%)	17 (41.5)
CPR within 72 hours before device implantation, n (%)	6 (14.6)
Intra-aortic counterpulsation, n (%)	13 (31.7)
Mean blood pressure, mm Hg± SD	74.4±19.5
Ejection fraction ± SD	0.26±0.09
Lactate, mmol/L± SD	3.9±3.7
Creatinine, mmol/L±SD	176.1±150.4



CONCLUSIONS In this study, we showed that temporary mechanical circulatory support with Impella is feasible and results in a reduction of lactate levels. Higher lactate (>3.8mmol/L) levels predicts 30-day mortality. This reflects hemodynamic instability and worse outcome in these selected patients. Therefore, early institution of Impella in these patients may improve outcome. Randomized controlled trials are required to further evaluate the efficacy of Impella left ventricular assist device in CGS.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Cardiogenic shock, Impella