ACC.13
62nd Annual Scientific Session & Expo
TCT@ACC-i2

E17
JACC March 12, 2013
Volume 61, Issue 10

Acute Coronary Syndromes

LEVEL 1 SHOCK TEAM-EARLY EXPERIENCE IN EMCO USE AS A RESCUE DEVICE IN CARDIAC ARREST FROM STEMI IN THE CARDIAC CATHETERIZATION LABORATORY

Poster Contributions
Poster Sessions, Expo North
Saturday, March 09, 2013, 10:00 a.m.-10:45 a.m.

Session Title: MI Complications: Shock, Arrest and Cardiac Rupture
Abstract Category: 1. Acute Coronary Syndromes: Clinical
Presentation Number: 1126-177

Authors: *Michael R. Mooney, David Hildebrandt, David Feldman, Benjamin Sun, Dirck Rilla, Yale Wang, Ivan Chavez, M. Nicholas Burke, Timothy Henry, Minneapolis Heart Institute Foundation at Abbott Northwestern Hospital, Minneapolis, MN, USA*

Background: Patients who present with ST-Elevation Myocardial Infarction (STEMI) complicated by cardiogenic shock (CS) that suffer a cardiac arrest have high mortality rates. Little data exist on using Extracorporeal Membrane Oxygenation (ECMO) as a rescue device during CPR in the CS patient.

Methods: We reviewed all patients from 8/2011 to 10/2012 who presented to a high volume, tertiary percutaneous coronary intervention (PCI) center, with STEMI complicated by CS that developed a PEA arrest during PCI and remained hemodynamically unstable despite mechanical CPR, IABP and inotropes. All patients were placed on percutaneous arterio-venous ECMO as a rescue device. All patients were intubated and all were hypoperfused with profound metabolic acidosis. Mechanical CPR via the LUCAS device was used in all patients. Median time of arrest from initiation of ECMO was 52 (range 16-133) minutes. Antegrade perfusion was established below the arterial ECMO sheath in all cases. ECMO was required for a median time of 4 (range 3-6) days.

Results: The 5 patients included 2 females and 3 males with a median age of 64. Therapeutic hypothermia (TH) was instituted after initiation of ECMO in 4 (80%) of the cases. Ejection fractions of less than 10% were noted in 4 patients, and 1 patient had no cardiac output present prior to initiation of ECMO. Of 5 patients, 4 (80%) survived to hospital discharge and all of the survivors had good neurocognitive recovery (CPC 1 or 2) at discharge. Of the 4 survivors, discharge EF improved to a median of 45% (range 25-65%). Bleeding which required transfusion occurred in all cases.

Conclusions: ECMO can be a lifesaving rescue technique when instituted by an experienced Shock Team in the CV lab for refractory PEA arrest occurring in the CV lab. Lucas CPR was a valuable adjunct. Striking recovery of LV function can also occur in several days. The combination of ECMO and TH was associated with excellent neurologic outcomes as well. ECMO may have a role in selected PCI centers with advanced specialized teams.