Potential Extracorporeal Membrane Oxygenation Use for Increased Survival of In-Hospital Cardiac Arrests

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Potential Extracorporeal Membrane Oxygenation Use for Increased Survival of In-Hospital Cardiac Arrests

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Background

In-hospital cardiac arrest (IHCA) is a relatively uncommon event but is associated with a low rate of survival. Extracorporeal membrane oxygenation (ECMO) is a highly aggressive and advanced cardiopulmonary support system that can benefit select patients who cannot be successfully resuscitated through traditional cardiopulmonary resuscitation (CPR). It temporarily allows for adequate bodily perfusion in patients in refractory cardiac arrest and allows for valuable time so that the pathologies behind the cardiac arrests can be evaluated and treated. 1

Methods

A retrospective study was done involving 182 patients in 2011 and 2012 within the Lehigh Valley Health Network for which a "code blue" was called for in-hospital cardiac arrest. Data was examined for each patient from electronic medical and resuscitation records. The overall exclusion criteria was an age <18 or >70 years or an existing Do Not Resuscitate (DNR) before coding.

Results & Figures

182 IHCA Patients (18-70y.o.)

25 patients No Return of Circulation (Did Not Survive)

- 9 Patients Acute Coronary Syndrome
- 6 Patients Pulmonary Embolism
- 4 Patients Cardiomyopathy
- 3 Patients Sepsis
- 1 Patient Hypoxia
- 1 Patient Drug Overdose
- 5 Patients Unknown
- 5 Patients Other

107 Patients Return of Circulation (>20min)

51 Patients Survived to Discharge

56 Patients Did Not Survive

44 Potential ECMO Recipients

14 Etiologies of Possible ECMO-CPR Recipients

13 Patients

Acute Coronary Syndrome

12 Patients

Pulmonary Embolism

6 Patients

Sepsis

3 Patients

Hypoxia

1 Patient

Drug Overdose

1 Patient

Unknown

1 Patient

Other

Conclusions

Introducing ECMO-CPR for select IHCA patients in the Lehigh Valley Health Network is a realistic way to produce positive outcomes for patients who would otherwise face grave prognoses and better the overall survival statistics for IHCA.

REFERENCES


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