



E1322

JACC March 12, 2013

Volume 61, Issue 10



## Practice Performance, Improvement and Administration

### IMPROVED OUTCOME OF EXTRACORPOREAL CARDIOPULMONARY RESUSCITATION FOR OUT-OF-HOSPITAL CARDIAC ARREST

Poster Contributions

Poster Sessions, Expo North

Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

Session Title: Improving Outcomes in Cardiac Arrest and Resuscitation

Abstract Category: 22. Performance Improvement

Presentation Number: 1262-272

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**Background:** Extracorporeal cardiopulmonary resuscitation (ECPR) had been considered adjuvant therapy for in-hospital cardiac arrest (IHCA). It was previously applied to out-of-hospital cardiac arrest (OHCA) with unsatisfactory result.

**Methods:** We reviewed our extracorporeal membrane oxygenation (ECMO) data that was prospectively collected, and analyzed those ECPR for OHCA in the past 5 years.

**Results:** There were 31 ECPR applications (8 female) for OHCA in 945 ECMO episodes in past 5 years (3.3%), with age  $50.7 \pm 15.3$  years. The collapse to initial CPR was  $3.9 \pm 4.4$  min, and the ischemic duration (collapse to ECMO) was  $68.5 \pm 35.3$  min. The etiologies of collapse included acute coronary syndrome, electric shock, aortic dissection, intoxication, and unknown. Twenty interventions were performed in 18 patients, 17 percutaneous coronary angioplasty, and 3 surgical interventions. The mean ECMO support was  $61.1 \pm 48.2$  hours, and the hospital stay was  $17 \pm 23$  days. Survival to discharge was 38.7% and that with favorable neurological outcome was 25.8%. Survival was acceptable when ischemic duration was limited within 75 minutes. In the same period, the survival rate of ECPR for IHCA was 31.2% (81/259), similar to that for OHCA,  $p > 0.05$ .

**Conclusion:** In addition to beneficial evidence of ECPR for IHCA with cardiac origin, ECPR for some selected OHCA patients after prolonged CPR may have an acceptable survival and neurological outcome. ECMO may consider as an effective adjuvant therapy for some prolonged OHCA.

Relationship Between Survival or favorable outcome and ischemic duration

Ischemic duration	case count n (%)	Survival n (%)	Favorable outcome n (%)
< 30 min	0 (0%)		
< 45 min	8 (25.9%)	5 (62.5%)	4 (50.0%)
< 60 min	16 (51.6%)	8 (50.0%)	7 (43.8%)
< 75 min	22 (71.0%)	12 (54.5%)	8 (36.4%)
< 90 min	27 (87.1%)	12 (44.4%)	8 (26.6%)
Total	31 (100%)	12 (38.7%)	8 (25.8%)