

includes Strengths and Areas for Improvement. Upon completion of the Exercise Evaluation Guide, the findings are then utilized to complete the After Action Report for the exercise. This planning document is one tool to assure that children are not neglected in health care based exercises.

Prehosp Disaster Med 2011;26(Suppl. 1):s42–s43
doi:10.1017/S1049023X11001488

(A151) Non-Traumatic Out-of-Hospital Arrests: Initial Cardiac Arrhythmia, Circadian Differences and Cause of Death

V. Alicia, C. Yih Chong Michael, S. Eillyne

Emergency Department, Singapore, Singapore

Background: Out-of-hospital cardiopulmonary arrest (OHA) is an international health issue. There is an urgent need to better understand the key factors that affect OHA survival. Epidemiological surveillance is the first step towards scientific understanding of the problem. This study looks at the profiles of patients who suffered an OHA.

Methodology: In this retrospective study, the medical records of all patients who died upon arrival at Tan Tock Seng Hospital, Emergency Department (TTSH ED) between 1st January 2009 and 31st December 2009 were reviewed. The outcomes include patient demographics, pre-hospital management and the cause of death.

Results: Within the study period, there were a total of 275 OHA, 5 (1.8%) traumatic and 270 (98.2%) non-traumatic cases. Emergency Medical Service (EMS) conveyed 247 (91.5%) of OHA and 23 (8.5%) arrived by self-transport. The incidence of non-traumatic OHA was 14 per 10,000 ED attendees, predominantly male (72.2%). Male were significantly younger than female (63 vs 70 years, $p = 0.002$). The commonest initial cardiac arrhythmia recorded on scene by paramedics was asystole (54.1%), pulseless electrical activity (34.8%) and ventricular fibrillation (11.1%). One hundred sixty-one (59.6%) patients collapsed during the day (0600 – 1759 hours). Patients found in ventricular fibrillation on scene peaked in the morning (1020hours). All OHA were started on cardiopulmonary resuscitation, intubated with laryngeal airway mask, given intravenous adrenaline, and all ventricular fibrillation was electrically defibrillated enroute by the paramedics. Despite continued resuscitative efforts in the ED, all remained in asystole. The State Coroner reviewed 266 (96.7%) OHAs, of which, 96 (36%) were subjected to post mortem. Among patients with asystole at scene, acute coronary syndrome (55.2%), hypertensive heart disease (13%) and bronchopneumonia (5.2%) were the three commonest cause of death. The commonest cause of death for ventricular fibrillation at scene was acute coronary syndrome (76.7%), of which 10 (43.5%) had no pre-existing medical conditions.

Conclusion: In our study population, majority of patients had asystole as their presenting arrhythmia at scene. OHA with ventricular fibrillation demonstrated significant circadian differences and the underlying cause of death was acute coronary syndrome. This knowledge will allow EMS to devise future strategies that have the greatest potential to improve survival outcomes.

Prehosp Disaster Med 2011;26(Suppl. 1):s43
doi:10.1017/S1049023X1100149X

(A152) Comparison of Load Distributing Band and Standard Cardiopulmonary Resuscitation in Patients Presenting with Cardiac Arrest to Emergency Department

M.E. Ong,¹ P. Sultana,² S. Fook-Chong,² A. Annitha,¹

S.H. Ang,² L. Tiab,² K.L. Yong²

1. Department of Emergency Medicine, Singapore, Singapore
2. Singapore, Singapore

Objective: To compare resuscitation outcomes before and after switching from manual cardiopulmonary resuscitation (CPR) to load-distributing band (LDB) CPR in a multi-center Emergency Departments (ED) trial.

Methods: This is a phased, prospective cohort evaluation with intention-to-treat analysis of adults with non-traumatic cardiac arrest. The intervention is change in the system from manual CPR to LDB-CPR at two Urban EDs. The main outcome measure is survival to hospital discharge, with secondary outcome measures of return of spontaneous circulation (ROSC), survival to hospital admission and neurological outcome at discharge.

Results: A total of 1,011 patients were included in the study, with 459 in the manual CPR phase (January 01, 2004, to August 24, 2007) and 552 patients in the LDB-CPR phase (August 16, 2007, to December 31, 2009). In the LDB phase, the LDB device was applied in 454 patients (82.3%). Patients in the manual CPR and LDB-CPR phases were comparable for mean age, gender and ethnicity. Rates for ROSC were comparable with LDB-CPR (manual 22.4% vs. LDB 35.3%; adjusted odds ratio [OR], 1.07; 95% confidence interval [CI], 0.63-1.83). Survival to hospital admission was increased, Manual 14.2% vs. LDB 19.7%; adjusted OR, 2.50; 95% CI, 1.05-6.00. Survival to hospital discharge was increased Manual 1.3% vs. LDB 3.3%; adjusted OR, 3.99; 95% CI, 1.06-15.02. The number of survivors with Cerebral Performance Category 1 (good) (Manual 1 vs. LDB 12, $p < 0.01$) and Overall Performance Category 1 (good) (Manual 1 vs. LDB 10, $p < 0.01$) was also increased. The Number Needed to Treat (NNT) for 1 survivor was 52 (95% CI, 26-1000).

Conclusion: A resuscitation strategy using LDB-CPR in an ED environment was associated with improved survival to admission and discharge in adults with non-traumatic cardiac arrest.

Prehosp Disaster Med 2011;26(Suppl. 1):s43
doi:10.1017/S1049023X11001506

(A153) Analysis of Chest Compressions: Measured Using the Quality Compression Index and Performance Disparities among Demographic Characteristics

J.H. Schwab,¹ A.L. Williams,¹ M.L. Birnbaum,²

Z.T. Emberts,³ P.D. Padjen,⁴ A. Bhattacharya,¹

S.K. Olson¹

1. Emergency Education Center, Madison, United States of America
2. Madison, United States of America
3. Minneapolis, United States of America
4. College Of Nursing, Oshkosh, United States of America

Introduction: Cardiopulmonary resuscitation (CPR) guidelines throughout the world stress the importance of high quality chest compressions soon after cardiac arrest as the most significant factor in determining survival. Little evidence exists, internationally, documenting the quality of compressions provided by healthcare providers. In this study investigators sought to determine the