

Rapid Defibrillation: A Comparison of Prehospital Cardiac Arrest Victim Survival Rates

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Introduction: In patients who suffer out-of-hospital cardiac arrest, the time from collapse to defibrillation is the single most important determinate that affects survival to hospital discharge. The purpose of this study was to compare the survival rates of cardiac arrest victims within an institution that has a rapid defibrillation program to those of its own urban community, with a tiered EMS system.

Methods: Logistic regression analysis of a retrospective data series ($n = 23$), and comparative analysis to a second retrospective data series ($n = 724$) were gathered for the study period September 1994 to September 1999. The first series consisted of all patients at Casino Windsor Ltd. who suffered cardiac arrest and the data abstracted included: (1) age, (2) gender, (3) death/survival (neurologically intact discharge), (4) presenting rhythm (VF, VT, other), (5) time of collapse, (6) time to security arrival, (7) time to CPR prior to defibrillation (if applicable), (8) time to nurse arrival, (9) time to defibrillation, and (10) time to return of spontaneous circulation (if any). Significantly, all arrests within this series were witnessed by the surveillance camera system, allowing time of collapse to be accurately determined rather than estimated. These data were compared on the basis of similar events, times, and intervals to a second series that consisted of all patients in the greater Windsor area who suffered cardiac arrest. This series was based upon the Ontario Prehospital Advanced Life Support (OPALS).¹ The study database was coordinated by the Clinical Epidemiology Unit of the Ottawa Hospital, University of Ottawa.

Results: The Casino Windsor Ltd had 23 cardiac arrests, all were witnessed, 13 (56.5%) were male, 10 (43.5%) were female. The average age was 61.1 years, average of the time to defibrillation was 7.7 minutes from the collapse of patient, mean value of times of EMS to patient's side 13.3 minutes of collapse, and VF/VT was the initial rhythm 91% of the time. Fifteen were discharged alive from hospital (65% survival).

The Greater Windsor Study Area had 668 out-of-hospital cardiac arrests: 365 (54.6%) were witnessed; 303 (45.4%) were unwitnessed; 410 (61.4%) were male, 258 (38.6%) were female. VF/VT was the initial rhythm in 34.3%. Thirty-seven were discharged alive from hospital (5.5% survival).

Conclusion: PAD Programs should be extended to any venue with large numbers of adults, and areas with difficult medical access. Device availability has proven to dramatically increase survival rates.

Reference

1. Ontario Prehospital Advanced Life Support Study (O.P.A.L.S.), Ottawa Civic Hospital, Clinical Epidemiology Unit, Ottawa ON., Phase IIIR Table,

7/19/00.

Key words: cardiac arrest; cardiopulmonary resuscitation (CPR); rapid; defibrillation; out-of-hospital
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EMS Under Fire: Activities during the Intifada—October 2000 to January 2001

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Introduction: For the past 3 months, MDA treated 652 wounded persons in 253 Intifada events. Activities were conducted in hostile environment: 5 MDA crew members injured; 53 ambulances damaged; one was burned, and the rest stoned.

Results: Debriefing of treatments and evacuation covered 49 events comprising:

- 1) Injured, 194: 52 (30%), urgent, unstable; 18 (10%), urgent stable; 79 (45.5%), nonurgent; 25 (14.5%), pronounced dead on scene
 - 2) Gun shot wounds, 60%; stabbing, 8%; explosions, 17%; and the rest MVA
 - 3) Wounds distribution: Head and neck, 12.5; torso, 26%; extremities, 30%; burns, 9%; multitrauma, 18%
- The military medical corps was involved in 21%.

Although most events were in rural areas, the average response time was 13 minutes; field treatment (including extrication time and delays due to environmental dangers) 22 minutes; and average time of transportation to hospitals, 18 minutes. Emergency lifesaving procedures in 70 urgent wounded: Intubation/ coniotomy, 36; Chest drain/needle application, 18; Tourniquet for massive bleeding, 10.

Conclusions: Our main conclusions are: National EMS active and professional in every day activities (300,000, BLS; 90,000 ALS per year) operates equally well in emergency situations. The deployment and organization of MDA enable it to respond well to unexpected emergencies in hazardous locations. The professional skills in trauma treatment (as per PHTLS) of MDA staff at all levels saved the lives of many Intifada victims.

Key words: emergency medical services; Intifada; Israel; trauma; wounds

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CT in Diagnosis and Management of Patients with an Acute Abdomen

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Objective: To emphasize the importance of CT in the diagnosis and management of patients with acute abdomen. Most of these cases were managed with the clinical findings and abdominal ultrasound, but when the diagnosis was unknown or more information was required, we performed a CT of the abdomen.