Strengthening links in the "chain of survival": a Singapore perspective

RA Charles, F Lateef, V Anantharaman

Introduction: The concept of the chain of survival is widely accepted. The four links viz. early access, early cardiopulmonary resuscitation (CPR), early defibrillation and early Advanced Cardiac Life Support (ACLS) are related to survival after pre-hospital cardiac arrest. Owing to the dismal survival-to-discharge figures locally, we conducted this study to identify any weaknesses in the chain, looking in particular at bystander CPR rates and times to Basic Cardiac Life Support (BCLS) and ACLS. Methods and materials: A retrospective cohort study was conducted in the Emergency Department of an urban tertiary 1500-bed hospital. Over a 12-month period, all cases of non-trauma out-of-hospital cardiac arrest were evaluated. Results: A total of 142 cases of non-trauma out-of-hospital cardiac arrest were identified; the majority being Chinese (103/142, 72.5%) and male (71.8%) with a mean age of 64.3±7.8 years (range 23-89 yrs). Most patients (111/142, 78.2%) did not receive any form of life support until arrival of the ambulance crew. Mean time from collapse to arrival of the ambulance crew and initiation of BCLS and defibrillation was 9.2±3.5 minutes. Mean time from collapse to arrival in the Emergency Department (and thus ACLS) was 16.8±7.1 minutes. Three patients (2.11%) survived to discharge. Conclusion: There is a need to (i) facilitate layperson training in bystander CPR, and (ii) enhance paramedic training to include ACLS, in order to improve the current dismal survival outcomes from out-of-hospital cardiac arrest in Singapore. (Hong Kong j.emerg.med. 2002;9:121-125)

Keywords: Bystander CPR, defibrillation, out-of-hospital cardiac arrest