

## Additional responsibility for physicians caring for cardiac patients: Insight from a case series

Muhammad Ajmal

Muhammad Ajmal, Department of Anaesthesia, Coombe Women and Infants University Hospital, Dublin 8, Ireland  
Muhammad Ajmal, Department of Anaesthesia, Sligo General Hospital, Sligo, Ireland

Author contributions: Ajmal M solely contributed to this paper.  
Correspondence to: Muhammad Ajmal, MBBS, DA, Department of Anaesthesia, Coombe Women and Infants University Hospital, Cork Street, Dublin 8, Ireland. [ajmal\\_c@hotmail.com](mailto:ajmal_c@hotmail.com)  
Telephone: +353-1-4085200 Fax: +353-1-4536033

Received: October 13, 2013 Revised: February 14, 2014

Accepted: February 18, 2014

Published online: March 16, 2014

### Abstract

Resuscitation measures performed at the scene of the event have the ultimate impact on the outcome of a cardiac arrest. We analysed six case histories of those sudden cardiac arrest patients who were revived in the field and were subsequently admitted to the intensive care unit during a six-month period. All were known cardiac patients and were under the care of healthcare providers. Four of those were discharged home from the hospital and did not suffer any residual damage where as one died of multi-organ failure and the other was declared brain dead. The outcome was good in patients who received early intervention in the form of basic life support. The family members of non-survivors witnessed the cardiac arrest at home but were not familiar with the concept or procedures of basic life support. We propose that physicians who care for cardiac patients should undertake the task of increasing family member awareness and knowledge in the techniques of basic life support.

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**Key words:** Heart disease; Cardiac arrest; Cardiopulmonary resuscitation; Physicians; Family members; Education and training

**Core tip:** Resuscitation measures performed at the scene of the event have a major impact on the outcome of cardiac arrest. There is no specific strategy in place to motivate family members of cardiac patients to learn life-saving basic life support techniques. We propose that the physicians who care for cardiac patients should undertake the task of increasing family member awareness and knowledge of basic life support.

Ajmal M. An additional responsibility for physicians caring for cardiac patients: Insight from a case series. *World J Clin Cases* 2014; 2(3): 72-74 Available from: URL: <http://www.wjgnet.com/2307-8960/full/v2/i3/72.htm> DOI: <http://dx.doi.org/10.12998/wjcc.v2.i3.72>

### INTRODUCTION

Successful revival following sudden cardiac arrest depends on patient characteristics and resuscitation measures<sup>[1]</sup>. Heart disease is the most common cause of sudden cardiac arrest, and its risk can be reduced by long-term efforts initiated by patients and their healthcare providers. However, “resuscitation measures” performed at the scene of the event have a major impact on the outcome of cardiac arrest<sup>[2]</sup>. Recently, we reviewed a series of out-of-hospital adult cardiopulmonary resuscitations carried out in the communities served by our regional hospital. An insight of the outcome of that case series is reported.

### CASE REPORT

We analysed six case histories of cardiac arrest patients who were revived in the field and were subsequently admitted to the intensive care unit during a six-month period. The patient characteristics and resuscitation measures are shown in Table 1.

In this series, cases 5 and 6 did not survive. Case 5

**Table 1 Patient characteristics and resuscitation measures**

Case	Age (yr)	Gender	Cardiac disease	Initial diagnosis	BLS/ACLS	Initial treatment	In-hospital management
1	68	Male	Yes	VFib	Immediate	BLS, ACLS	Ventilation antiarrhythmic inotropes
2	58	Male	Yes	VFib	Immediate	BLS, ACLS	ventilation thrombolytic inotropes
3	79	Male	Yes	PEA	Immediate	BLS, ACLS	ventilation thrombolytic inotropes
4	64	Male	Yes	VFib	Immediate	BLS, ACLS	ventilation antiarrhythmic
5	74	Male	Yes	VFib	Delayed	ACLS	ventilation antiarrhythmic hemofiltration
6	56	Female	Yes	VFib	Delayed	ACLS	ventilation antiarrhythmic therapeutic hypothermia

ACLS: Advanced cardiac life support; BLS: Basic life support; PEA: Pulseless electrical activity; VFib: Ventricular fibrillation.

died of multi-organ failure, and case 6 was declared brain dead. The other four patients were discharged home and did not suffer any residual damage. Though limited in number, this series reveals some patterns with regard to characteristics and resuscitation measure outcome: (1) all were known cardiac patients under the care of healthcare providers; (2) in five of the six patients, cardiac arrest was due to ventricular fibrillation, which is a shockable rhythm and requires the immediate use of a defibrillator, such as automated external defibrillator; (3) the outcome was good in patients who received early intervention in the form of “basic life support” (BLS); and (4) the family members of cases 5 and 6 witnessed the cardiac arrest at home but were not familiar with the concept or procedures of BLS. Two of the four patients who survived suffered from cardiac arrest while they were enjoying in a pub/bar and were able to receive BLS or even defibrillation immediately. One patient who collapsed on his own street was taken care of by paramedical professionals employed at the local hospital who happened to be passing by, and one victim suffered cardiac arrest at a doctor's appointment and was resuscitated by his primary care physician. One of the patients who did not survive was the youngest (56 years old) in this case series but did not receive cardiopulmonary resuscitation until an ambulance arrived twenty minutes later. We asked the families of the survivors about their awareness and ability to provide BLS, and three of the four families acknowledged that they did not know how to implement these measures.

## DISCUSSION

Many social organizations actively promote public and community awareness about BLS. Healthcare employees and those that work at public facilities (e.g., airports, restaurants/pubs) are required to complete BLS training.

However, there is no specific strategy in place to motivate family members of cardiac patients to learn life-saving BLS techniques<sup>[3]</sup>. We propose that physicians who care for cardiac patients should undertake the task of increasing family member awareness and knowledge of BLS<sup>[4]</sup>. Anesthesiologists can motivate families of cardiac patients who undergo anesthesia or intensive care unit admission. This can be accomplished through direct communication with individual families or in the form of combined educational sessions with multiple families<sup>[5]</sup>. This strategy is especially important in remote areas where ambulance response times are long.

## ACKNOWLEDGMENTS

A special “thank you” goes to Niall Fanning, Anesthesiologist, St. James's Hospital, Dublin, Ireland and Michael Carey, Anesthesiologist and Director Perioperative Medicine, Coombe Women and Infants University Hospital, Dublin, Ireland, for their ongoing support and encouragement for the author to continue academic activities in the field of Anesthesiology and Acute Care Medicine.

## COMMENTS

### Case characteristics

A series of six out-of-hospital sudden witnessed cardiac arrests in cardiac patients.

### Clinical diagnosis

Return of spontaneous circulation following sudden cardiac arrest.

### Differential diagnosis

Intact cerebral function, cerebral damage, and brain death.

### Laboratory diagnosis

Post cardiac arrest.

### Imaging diagnosis

Post cardiac arrest in five cases, severe cerebral damage (brain death) in one case.

### Pathological diagnosis

Post cardiac arrest.

### Experiences and lessons

Family members of cardiac patients should learn life saving basic life support techniques and health care providers involved in their care should motivate family members to learn these techniques.

### Peer review

The author who analysed six case histories of cardiac arrest victims proposes that physicians who care for cardiac patients should undertake the task of increasing family member awareness and knowledge of “basic life support”. The cases are not rare but the content is worth publishing.

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**P- Reviewers:** Kounis GN, Masahiro K, Muengtawepong S

**S- Editor:** Wen LL **L- Editor:** A **E- Editor:** Wu HL





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Fax: +852-65557188

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