

Knowledge and attitude of nurses on medical wards to defibrillation

ABSTRACT—We questioned 112 qualified nurses working on general medical wards about their resuscitation experience and knowledge of ECG interpretation and defibrillation. Although all but two of them had been formally trained in basic cardiopulmonary resuscitation (CPR) only 16 had received any training in the last six months. Seventy-five per cent of nurses were involved in CPR as first responders but only 18% had used a defibrillator during a cardiac arrest. Identification of ECG rhythms and practical knowledge about defibrillation was encouraging despite the lack of formal training in this field. Almost every one of the nurses would be willing to receive training in advanced cardiac life support. The responses to this inquiry suggest that nurses on medical wards are enthusiastic about advanced cardiac life support and already have some basic practical knowledge. Appropriate training (and retraining) of nursing staff should improve the outcome of resuscitation efforts on medical wards.

Immediate electrical defibrillation is the optimal therapy for ventricular fibrillation [1,2]. Ambulance, paramedic, nursing and medical personnel provide a rapid resuscitation service for out-of-hospital cardiac arrests across the UK, with particular emphasis on early defibrillation. In hospitals, cardiac arrests are normally attended by a crash team of trained medical personnel. In high dependency areas, such as coronary and intensive care units, senior nursing staff are usually trained in advanced cardiac life support and may initiate defibrillation when appropriate.

The resuscitation success is greater in high dependency areas than in general wards [3]. In the UK, most in-hospital cardiac arrests occur on general wards and, as implied in the BRESUS study, the time delay required to assemble a resuscitation team may be detrimental to resuscitation success [3]. The delay in initiating defibrillation could be reduced by training nursing staff in advanced cardiac life support [4] but at present most nurses on medical wards are trained only in basic cardiac life support.

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Methods and results

We interviewed 112 qualified nurses of all grades working on acute general medical wards at St Thomas' Hospital. Virtually all of them (110, 98%) had received formal cardiopulmonary resuscitation (CPR) training and felt confident in their ability to initiate basic resuscitation. Only 16 nurses had received formal CPR training in the previous six months and 54 nurses had not attended a formal training course within 12 months (Fig 1). Seventy-five per cent (84 nurses) had been the first nursing or medical person at a cardiac arrest while on duty.

Most nurses, when asked to identify six different ECG rhythm strips, correctly identified asystole, sinus rhythm and ventricular fibrillation but were less good at recognising sinus bradycardia, ventricular tachycardia and sinus tachycardia (Fig 2).

These same ECG rhythm strips were then explained to the nursing staff, and they were asked to identify the rhythms most appropriately treated by defibrillation if they occurred during a cardiac arrest. The majority of nurses would defibrillate ventricular fibrillation (Fig 3). A sizeable minority would defibrillate asystolic patients and very few would defibrillate patients in sinus bradycardia, sinus tachycardia or sinus rhythm (Fig 3).

All but two nurses knew where to find the nearest crash trolley (including a defibrillator), and 18% (20 nurses) had actually used a defibrillator during a cardiac arrest. Most (71%, 80 nurses) knew the correct defibrillator paddle position, and 62% (70 nurses) knew that 200 joules was the most appropriate energy level for the first shock for ventricular fibrillation.

Although 96% (108 nurses) agreed that nursing staff should be able to recognise common arrhythmias and would accept training in advanced cardiac life support, only 71% (80 nurses) thought that nursing staff should use a defibrillator even after such training.

Discussion

Nursing staff on general medical wards are not routinely offered training in advanced cardiac life support but may be the key to greater resuscitation success in hospitals. When on duty, these nurses are frequently involved in cardiac arrests, often as first responders. The high confidence expressed in their own CPR ability may reflect their practical experience rather than recent training. It has previously been shown that both nursing and medical staff need retraining in CPR

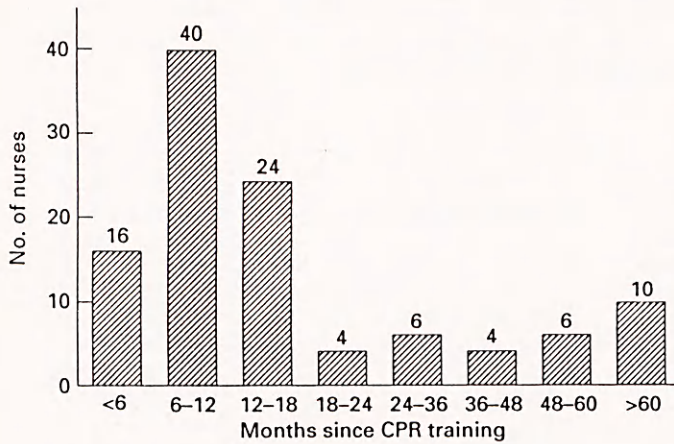


Fig 1. Intervals since last formal cardiopulmonary resuscitation training for the 110 nurses who attended such courses.

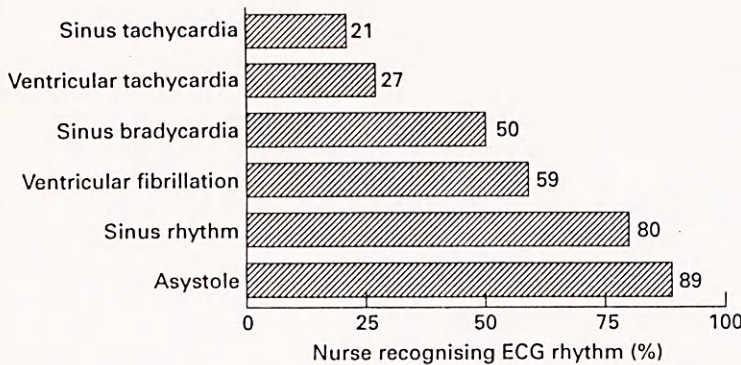


Fig 2. Percentage of 112 nursing staff who correctly identified each of six ECG rhythms.

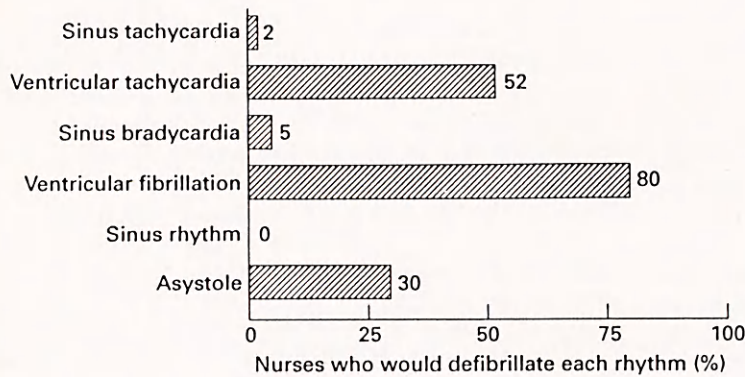


Fig 3. Percentage of 112 nursing staff who thought that defibrillation would be appropriate for treating the patient if the rhythm occurred during a 'cardiac arrest'.

at regular intervals, perhaps as frequently as every six months [5,6]. It is disappointing that this is not being achieved even in a major teaching hospital.

In general, the nurses' ability to recognise different rhythms and knowledge of how to defibrillate was encouraging, although it was surprising that common rhythms such as sinus tachycardia and bradycardia were identified by only a minority of them. Their

knowledge about ECGs has been acquired by osmosis rather than formal training. Most nurses recognised that defibrillation was appropriate treatment for ventricular fibrillation and should not be used for sinus rhythms, but were less sure of its role in ventricular tachycardia and asystole. This probably reflects the practice they have observed: for example, in some asystolic cardiac arrests, defibrillation may have been

attempted in case 'fine' ventricular fibrillation was masquerading as asystole.

Most nurses are willing to accept formal training in advanced life support. Even so, a significant minority (approximately 30%) have reservations about carrying out defibrillation and this probably reflects many nurses' traditional attitude to their role during cardiac arrest. With appropriate training it should be possible to turn the majority's enthusiasm into practical resuscitation and defibrillation skills.

On medical wards, particularly where long distances cause delay, it makes sense to train nursing staff who are already on the spot not only to initiate CPR but, when appropriate, to initiate defibrillation. A commitment to do this must be backed up with continuing assessment to ensure adequate training and practice [7]. Programmes aimed at promoting skills in nursing and medical staff must also allow for retraining at regular intervals. Auditing hospital resuscitation success is both practical and mandatory [8]. The implementation of such programmes is not expensive if current equipment is utilised. The use of 'advisory' defibrillators would increase the capital cost, but may allay fears about inappropriate defibrillation. This would change the structure of resuscitation teams, giving ward nursing staff a more positive role in CPR [9].

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