**Review Article**

**Cardiopulmonary resuscitation in the elderly: a clinical and ethical perspective**

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**Abstract** The daily practice of cardiopulmonary resuscitation (CPR) in elderly patients has brought up the attention of outcome research and resource allocation. Determinants to predict survival have been well identified. There has been empirical evidence that CPR is of doubtful utility in the geriatric population, more studies have showed controversial data. Sometimes situations in which CPR needs to be given in the elderly, causes stress to healthcare providers, due to lack of communication of the patient’s wishes and the belief that it will not be successful. It is of importance to state that we have the duty to identify on time the patients that will most likely benefit from CPR, and find out the preferences of the same. Whenever it is possible to institute these guidelines, we will avoid patient suffering.

(J Geriatr Cardiol 2007;4:117-9.)

**Key Words** cardiopulmonary resuscitation; advanced directives

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**Introduction**

Controversy exists in recent studies about effectiveness of cardiopulmonary resuscitation (CPR) among the elderly. Despite this, it continues to be an everyday task in the acute care setting. Many healthcare providers often encounter moral adversity in situations of resuscitation of elderly patients, due to the historical knowledge of poor outcomes. Our duty is to guarantee that each patient’s situation receives appropriate ethical management.

**CPR in the elderly: the aftermath**

For the last decades basic and advanced life support has been used extensively across the world. Cardiac arrest has been described as the number one killer in the United States and worldwide. It is estimated that cardiac arrest causes 350,000-500,000 deaths per year.¹ Being cardiac arrest so common, people have been looking at survival rates. These success rates of CPR have triggered discussions of the appropriateness of resuscitation among the different population groups.² The elements to predict outcome have been greatly studied and conclusion is that the most important determinants known to predict outcome after cardiopulmonary resuscitation are cardiac etiology, witnessed arrest and the time from collapse to start chest compressions.³

Certain circumstances such as anesthesia drug overdose, coronary artery disease or primary ventricular arrhythmia have been found to bring up the most favorable results of resuscitation.⁴ However, certain patient characteristics contribute to poor outcome, including age, as well as comorbidities such as metastatic cancer, sepsis, pneumonia, renal failure, trauma, and acute and sustained hypotension.⁷,⁸

Not very long ago, we reported the observed survival to hospital discharge after CPR in the geriatric population. We retrospectively reviewed all cardiac arrests reported during a 12 month period, in a single, private tertiary-care teaching hospital. It was determined that survival from in-hospital cardiac arrest for elderly patients is greater than what was previously reported and also associated with longer CPR times. This strongly suggested that strong resuscitative efforts be not withheld from the elderly due to concerns of ineffectiveness.⁹

On one recent study by Cooper, et al. survival rates increased in people younger than 60 years, and decreased with increasing age.¹⁰ However, we should not consider age as an independent predictor of survival.

On another very recent retrospective review that looked at the characteristics of the geriatric patient population, it was determined that selected patients may benefit from a short resuscitation attempt. These patients are especially those admitted for cardiac ischemia suffering...
a cardiac arrest with VT of VF as a primary arrhythmia or patients with respiratory/hypoxic arrest.\(^2\)

The best approach in management of the geriatric population is to identify which patients are unlikely or more likely to benefit from CPR, and always discuss the option of Do Not Resuscitate (DNR) orders upon admission. Following these actions will lead to avoid patient suffering.

**Advanced directives**

In the circumstance that the patient becomes unable to express wishes, the role of the advanced directives jumps in. The directives should be attached to the patient’s medical record and validated by the primary care physician specifically when patients are admitted to the ICU.\(^11\) The use of the living will, durable power of attorney for health care and written of verbal advance directives is rapidly rising in the setting of acute care. But it is constantly a difficulty to establish advance directives in both ill and well patients.\(^12\)

Sometimes is due to failure of health care providers to introduce the discussion to establish them on admission. This situation often leaves patients without a clear plan of what to do in case cardiopulmonary arrest occurred.\(^13,14\)

Some of the elderly patients suffered from multiple serious illnesses such as metastatic cancer or advanced neurological disorders. When a patient is admitted to the hospital for pneumonia, sepsis or generally poor condition, cardiac arrest should be considered as a terminal event after a prolonged and possibly painful illness.\(^15\)

The decision to start CPR has to be taken within seconds, often without knowledge about the patient’s clinical condition and preferences regarding CPR. To avoid inappropriate treatment, it should be appreciated on or during hospital admission that some patients are not suitable candidates for resuscitation.\(^16\) Many physicians encounter difficulties when discussing DNR orders or life sustaining treatments with the patient or surrogates.

CPR might be the only medical procedure that does not require a physicians order, but requires an order to withhold it. Several studies have shown that physicians have limited understanding of patient preferences concerning CPR.\(^17\)

In the United States, the majority of the investigated patients have CPR preferences and want to be part of the decision making process. Often patients want their physician to bring up the subject; preferably while they are still healthy.\(^18\)

Primary health care providers play an important role when discussing their patients’ preferences regarding end of life issues.\(^19\) In fact, it was described that elderly patients with chronic illnesses were more satisfied with their primary care physicians and outpatient’s visits when advanced directives were discussed. Closest relatives should preferably be informed about their relative’s wishes, so they might help when patient can not give a statement about his or her wish.

**Discussion**

An increased number of geriatric patients are admitted to the hospital. The challenge for healthcare providers dealing with the aging patient population is to balance compassion with appropriate care focused on functional and cognitive outcome.\(^20\)

Counseling patients about the risks and benefits of in hospital CPR reduce patient suffering. Choosing a peaceful death can be a respectful alternative for CPR without any chances for a meaningful recovery. Recognizing prognostic factors concerning CPR in geriatric population are of absolute importance.\(^21\)

Elderly patients with significant comorbidities and inherent illness are at high risk of death during their stay in the hospital.\(^22\) Physicians have to obtain the code status of the patient upon admission. Several studies show that discussions about CPR occur with less than a third of the inpatients and less than half of patients not wishing to have CPR. These discussions tend to happen late in the course of an illness. If they do not occur, patients will receive aggressive care during the final months of life, even if they prefer comfort care rather than life extending measures.

The capacity of the patients to make decisions is not always considered during CPR discussions.\(^23\) Patients remembering the discussions with physicians about the negative effects of CPR has been shown to be poor. This issue makes us believe that the patient might not be capable of making such decision. Physicians should assess and evaluate the decision making capacity of the patient.

Although patients want to be involved, many will not feel capable of making a decision on their own, even after an adequate description of resuscitation.\(^24\) Most of the time, physicians do not recommend that patients discuss CPR decisions with their relatives. But in cases of elderly, it might be necessary because of the lack of capacity of the patient to make the decision.

**Conclusions**

Cardiopulmonary resuscitation in the elderly will always be a controversial topic. It is important to respect the decision of the patient whichever this one might be. The majority of the elderly inpatients prefer to be involved in discussions about CPR preferences. Physicians must take responsibility for initiating these discussions with older patients, recognizing that the decision making process may be complicated by cognitive impairment. When capacity is questioned and patient wishes are not clear, there is a necessity to involve other family members or decision makers; they should always be included in the discussion.
elderly people prefer to share responsibility in the decision making. It is important to identify the patients that would not get any benefit from CPR and address this to them, so that the patient can consider DNR orders to avoid any inappropriate treatment and prolonging patient suffering.

References


