



Cardiopulmonary resuscitation: beyond just giving chest compressions, ethical considerations

Resucitación cardiopulmonar: consideraciones éticas más allá de las compresiones torácicas

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ABSTRACT

Sudden cardiac death (SCD) is a global health problem that requires, in many cases, cardiopulmonary resuscitation (CPR) and automatic external defibrillation (AED). Generally, it is initiated by a witness and continued by trained personnel. Many of the patients who suffer from SCD have a history of cardiac problems, and the decision to start CPR bystander must be made in seconds, which entails medical and bioethical decisions. Some of these decisions involve not only the initial rescuer but also health personnel and the family, and everyone must be conscious that a patient's death is possible. The objective of this paper is to mention the main bioethical considerations that are directly related to CPR, both the people who receive it and those who administer it in the context of SCD.

RESUMEN

La muerte súbita cardiaca (SCD por sus siglas en inglés) es un problema de salud mundial, que requiere para su tratamiento, en muchas ocasiones la reanimación cardiopulmonar (RCP) y el uso de desfibrilador automático externo (DAE por sus siglas en inglés); generalmente es iniciada por un testigo y posteriormente continuado por un equipo entrenado en el terreno de la atención médica. Muchos de estos pacientes tienen antecedentes de problemas cardiacos y la decisión de iniciar la RCP debe realizarse en segundos, lo que conlleva decisiones médicas y bioéticas, algunas de las cuales involucran no solo al rescatador inicial sino también al personal de salud y la familia y todos ellos deben estar conscientes que la muerte del paciente es probable. El objetivo de este escrito es mencionar las principales consideraciones bioéticas que se encuentran en relación directa con la RCP tanto de las personas que reciben la intervención como los que la proporcionan.

INTRODUCTION

The need for immediate action in the presence of a sudden cardiac death (SCD) event and the need to start cardiopulmonary resuscitation (CPR) can be the difference between life and death. This difference in concept can cause some dilemmas when acting logically; CPR will require therapeutic activity without delay to try to abort SCD. In contrast, death requires NO initiation or cessation of all therapeutic activity. Given the importance of the decision about the attitude to take or not

(remember that the patient is dead or on the verge of death with the possibility of living), the diversity of ways in which the problem and need for speed in treatment can be interpreted beforehand. The decision creates dilemmas and has bioethical aspects to be defined. Considering this point of view, we will develop the main bioethical aspects related to CPR.

Cardiac arrest (CA) is the sudden cessation of cardiac activity with a loss of consciousness state with an unresponsive victim without normal breathing and no signs of circulation.¹ Without immediate treatment, this condition

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progresses to SCD and could be treated and potentially reversed by CPR and defibrillation. Annually in the USA, approx., 400,000 people are victims of SCD.² Most of them are unexpected and commonly occurring in populations with a previous diagnosis of heart disease. Bystander CPR (B-CPR) and advances within emergency medical services (EMS) have proven successful interventions. Nonetheless, only approximately 10% of the patients with CA events leave the hospital alive, with a high incidence of neurologically impaired functions.³

Even if CA and SCD are used in the same context, this should not happen because SCD has an epidemiological impact, and CA should be considered in clinical practice. This difference should be linked because CA treatment aims to offer a guideline to the personnel who assist the victim in the implementation of CPR.⁴

CA in the context of SCD has multiple causes but shares in the pathophysiology, cessation of mechanical activity of the heart with circulatory collapse, loss of respiration, systemic hypo perfusion, and finally, death. The treatment with CPR initially substitutes those lost functions, trying to restore breathing and circulation in order to avoid death secondary to irreversible injury to vital organs.⁵

In the context of an SCD, the decision to start CPR with any rescuer (ideally B-CPR) should be made in seconds, and sometimes different types of conflicts may arise. Some bioethics in the decision-making during CPR include beneficence, non-harmful autonomy, and justice, related to integrity, efficiency, confidentiality, and fidelity, autonomy directly related to the patient, beneficence with the doctor-patient relationship, and the good samaritan law and justice with the society. These principles seem to be generally well accepted but may differ between cultures, religions, personal convictions, etcetera.⁶

A wide variety of ethical questions arise during and after caring for a patient who receives CPR, generally related to how much sense it makes to receive care and for how long for a patient with a limited life expectancy. These questions generally arise among medical personnel, nursing, paramedics, friends, and

family of patients, mainly regarding what is the best treatment that the person receiving CPR should have, especially when the time of death is close.⁴

These four principles that govern medical ethics are known under the name of principlism, after the four guiding principles in medical ethics.⁷

1. Respect for autonomy: also known as self-determination, the actions are their own and independent of the will of others. That means they are free to reach their own conclusions. An autonomous person must be free to avoid being influenced or controlled by others who may interfere in making responsible decisions. It is the right of every patient to be informed and participate in making medical decisions regarding their case, and it is considered an essential piece in current medical bioethics.
2. Beneficence: perform acts that (are intended to) generate something good for the one who receives them, where doctors are required to act in patients' best interests. The doctors must offer options to our patients that, in our professional judgment, will further improve the patient's values and goals.
3. Non-maleficence: *Primum non nocere* (The first thing is not to harm). This maxim has accompanied the medical profession since its beginnings. Doctors are obliged to avoid causing harm or suffering to their patients.
4. Justice: consideration of the interests of all those involved in the result of an action. This is how to guarantee fair access to health resources and their use; in other words, doctors must promote systematic solutions to address the inequalities present in health systems, require all people to receive good, fair, and equitable treatment, propose that all social values should be distributed equally unless and be beneficial to all stakeholders.

ALTERNATIVE MORAL FRAMEWORKS

Using of a single theoretical framework on ethical issues can create difficult conflicts to resolve between doctors, their patients, and

their families. Thus, it has been suggested that different ethical frameworks be in the face of a complex clinical situation such as SCD that gives rise to difficult ethical questions.

These are:

1. Utilitarian/consequentialist view. Highlights the way to act in a way that obtains the greatest balance between the risks and benefits of the patient. For example, a utilitarian approach is used to decide whether or not to initiate CPR on a patient. What is the probability of survival, quality, and quantity of life compared to the suffering, consequences potential, and costs?
2. Deontological view. This view holds that some actions may exceed net profit calculations. A clear example is when a physician suggests the withdrawal or suppression of some treatment based on a utilitarian evaluation of futility, but on the other hand, the family members favor continuing the treatment out of a sense of family duty.
3. The doctrine of double effect. It is based on the idea that although an action or fact can have more than one result (intentional or unintentional), it is ethically justified as long as the intended benefit significantly outweighs the unintended harm. For example, giving painkillers to a dying person is justified, even if an unintended could be that death is hastened.
4. Communitarian view. This vision emphasizes the values of the common good and the majority, social objectives, traditional practices, and trying to help. For example, be in favor of universal access to health care with the idea of improving the quality of life of an entire community.
5. Rights-based approaches. This view emphasizes the legal rights of individuals. For example, patients near the end of their lives are extremely people who also have the right to participate in and benefit from appropriate research on their condition.
6. Social contractarian view. Try to find a balance or intermediate point of view between the social responsibilities of an individual and the responsibilities of society towards him. An example is the carrying out of pharmaceutical research studies in poor countries where their citizens could not afford the treatment. It violates this social principle by putting pressure on one population so that another can obtain the benefit.
7. Ethics of caring (or feminist ethics): Under this statement, caring for others is the basis of people's moral behavior, emphasizing that relationships with others should not be based on the universality of individual rights but rather on a sense of responsibility.⁸
8. Virtue ethics. While utilitarians focus on benefits and burdens, and deontologists focus on duty, virtue ethicists focus on the moral character that informs behavior, emphasizing the practice of compassion/empathy, fidelity, justice/advocacy, and practical wisdom.⁹

Decisional capacity

This is the patient's ability to receive, understand, and process the information regarding the benefits, possible risks, and alternatives of treatment and to deliberate and make his own choices. A doctor determines it, but competence itself is a legal determination that must be determined by a judge.

Patient rights

Patients have the right to decide about the life-sustaining medical treatments they receive as long as they have decision-making capacity. They also have the right to be informed of their diagnosis, prognosis, and treatment and may accept, reject, or stop any treatment even if it could hasten their death. Also, patients do not have the absolute right to expect or demand that their doctor apply treatments that are not clinically indicated.¹⁰⁻¹⁴

Futility

Condition in which the doctor considers that the patient when applying a treatment or procedure, does not have a reasonable possibility of improving the patient's condition or, where appropriate, that the patient himself,

or his responsible person at that moment, concludes the same treatment offered, is NOT in accordance with the patient's own goals and values. An example of a futile intervention is when a CPR maneuver does not seek the recovery of spontaneous circulation (ROSC) but rather its application alone, only prolongs the dying process and will not prolong the patient's life in any case. They can value-based futility (or the futility of quality of life) that defines that a treatment or intervention such as CPR maneuvers in a patient with SCD conflicts with the patient's values and objectives, that is, the patient DO NOT agree to receive it; but if the objectives of the procedure, or treatment, are NOT known: the values, and objectives of care will also be unknown.¹⁵

If a treatment is unlikely to have a result compatible with the objective values, quality of life, etc., desired by the patient, the doctor should consider that treatment as No acceptable based on the principle of non-maleficence. This makes the patient the one who defines what is futile for him based on his own values. It is then when the doctor must be empathetic and respectfully take the decisions that the patient has made based on his own goals and values, and should then give therapeutic recommendations that are consistent, as much as possible, with what the patient wants or needs.^{16,17}

LIVING WILLS AND ADVANCE DIRECTIVES

Advance application directive: it is any form of expression of a patient's thoughts, desires, or even preferences about the care to receive during the end of life. These typically provide advance instructions about limiting care, which frequently include CPR in CA situations. Advance directives can be based on conversations, written directives, living wills, or legal attorney papers for health care. While still competent, the patient's conversations with relatives, friends, or physicians are the most common form of advance directives. Written advance directives are generally considered legally more reliable than conversations held between patients and other people, including family. In this way, a patient who has lost his decision-making capacity but who has written

advanced directives, ensures that his autonomy right is respected. The legal aspects of these advance directives vary according to the different legislations in the world.

APPLICATION OF DO NOT RESUSCITATE ORDERS (DNR)

There are some international recommendations for patients in CA and SCD to receive CPR unless there is a (DNR) order or in cases where CPR is futile (e.g., signs of irreversible death).¹⁸ CPR is a unique condition in the context of medicine because it is the only medical intervention in which the patient is presumed to accept treatment (based on implied consent for emergency treatment that endangers life), and not carrying it out requires an explicit medical or legal order. It is not unusual to find cases in which resuscitation may be possible from the theoretical and physiological point of view but medically useless.¹⁹ In other words, while a doctor believes that a patient under CPR, patient circulation can be physiologically restored, at the same time, the doctor also believes that it is very unlikely that the patient will survive hospital discharge for those patients with severe advanced or terminal illnesses, without an indication DNR, requiring CPR in the event of CA, places physicians in a difficult position, with the patients and families to not to start CPR and not provide treatment when they believe it is not indicated. In turn, patients and families are in a difficult and sometimes unacceptable position to make a decision that will shorten their lives, even if this is very brief.

An example is that stopping CPR is appropriately accepted when the only possible outcomes are extremely high morbidity, premature or imminent death as expressed by the American Heart Association, only extremely preterm infants less than 23 weeks, or birth weight < 400 g, and anencephaly. There is a lack of training and guidance for doctors to suspend CPR in adults, and there is often the question in hospital settings whether, at some point, the doctor may decide unilaterally to suspend CPR resuscitation in those cases where they believe it is medically useless. The point of view of patients in

intensive care units cannot be ignored since it often requires multiple interventions or treatments from different points of view, sometimes useless who will potentially end up receiving CPR in a futile manner, defining medical futility as all the excessive medical interventions (both in terms of effort required and economic resources) that have little chance of changing the patient's final clinical outcome.²⁰ Although it could be appealing to the medical personnel to be able to refuse to provide potentially useless or futile therapies on the basis that doing so would preserve valuable resources for other patients, it is «rationing» that does not contribute at all to granting improvement in health care that is fair to the person or to the population.²¹ We can say that if a patient does not agree to receive CPR maneuvers, this decision must be respected based on the principle of the patient's autonomy. On the other hand, if the patient agrees to receive CPR maneuvers, then he should receive the maneuvers only if the professional medical judgment of the doctor who will order the CPR on the patient results in a possible favorable outcome for the patient and it is in accordance with his principles, needs, and, goals. However, if, on the contrary, the doctor decides based on that same judgment that CPR maneuvers will not have a favorable outcome for the patient then CPR maneuvers should be considered medically unbeneficial and should not be carried out. This is the way to honor the principle of beneficence and, at the same time, that of non-maleficence, which, apparently, could be useful but, in truth, NOT beneficial for patients. It must be taken into account that ethically tense situations, such as the case of a patient with SCD receiving CPR maneuvers. The tension must be communicated clearly and precisely to all those involved, especially to patients and their families. Helping to reduce pain in situations like these and relying on palliative care medicine can be of great help and should be considered more frequently in emergency rooms. Likewise, one must act with complete transparency and a good communication chain, transparency and communication must be frequent about the patient's condition at all moments.

CONCLUSIONS

There are numerous clinical and ethical issues and difficult problems that involve CPR. Basic principles of bioethics can be valuable in assessing and concluding ethical dilemmas. An uncontroversial principle is that CPR should be given when indicated, avoided when it is not or was not accepted by the patient previously, and suspended when efforts are ineffective.

It is mandatory not only to increase teaching CPR in the medical field but also in the general population, and not less important to teach the ethical principles of CPR in all medical fields, including paramedics, in teaching programs that currently are not widely diffused.

Education of patients regarding resuscitation is crucial to improving physicians' abilities to comply with individual patients' wishes. Communication with patients and families is an essential skill that should be taught in medical education and practice with competence throughout the career.

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