

Non-heart-beating organ donation versus unconventional cardiopulmonary resuscitation: Are we harvesting organs or attempting to save lives?

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Introduction

In recent years there has been an increasing number of organ donation programs after unexpected cardiac arrest, also known as uncontrolled donation after circulatory determination of death (uDCDD). In Spain alone there are currently seven ongoing programs in 6 different Autonomous Communities, and at least as many advanced projects.

At the same time, elsewhere, the number of unconventional cardiopulmonary resuscitation (uCPR) programs is growing. Based on the best current scientific evidence available, uCPR programs select patients from victims of unexpected cardiac arrest and offer them high quality cardiopulmonary resuscitation as a bridge to certain techniques and treatments that address the cause, known or suspected, of cardiovascular collapse. Different countries in Europe and around the world are obtaining promising results with regard to survival and quality of life. In Spain, there are still no such programs, which raises ethical and legal issues affecting priorities of patient care and management in the emergency services. Briefly, uCPR programs are not implemented in any of the national regions where uDCDD exist. Thus, certain victims of unexpected cardiac arrest that could have benefitted from uCPR have not been given that chance, due to the absence of an alternative care protocol or logistics. We propose a protocol that includes the option of uCPR to improve the chances of survival in selected victims of unexpected cardiac arrest, without diminishing potential candidates for non-heart-beating donation, except, obviously those who may recover. The proposed

protocol is consistent with current knowledge, best evidence and technical and human resources available; it sets out the management and care priorities that should govern all medical emergency services: save the lives of critical patients and recover these patients without sequelae. Give life with quality of life and, only when this not possible, give life to others, if authorized by them or their family, by organ donation.

What has changed?

Several recent events and facts justify a reflection on current uDCDD programs. The first is the proliferation of these programs, in Spain¹, other European countries and in the United States². These uDCDD programs increase the number of organs for transplantation at a time when waiting lists are growing and the number of brain-death donors is decreasing, thanks to the achievements of preventive health and care policies. The second fact is evidence that is encouraging emergency medical professionals in general and prehospital teams in particular to treat unexpected heart arrest using unconventional methods³. In this regard, the latest international recommendations on resuscitation (ILCOR, AHA, ERC 2010)⁴ advocate that this should be of high quality and minimally interrupted, guided by the cause of heart arrest, and maintained until specific care procedures are administered which can reverse the process. There are promising results in terms of survival with good neurologic quality of life (Cerebral Performance Category scale, CPC 1-2) after unexpected

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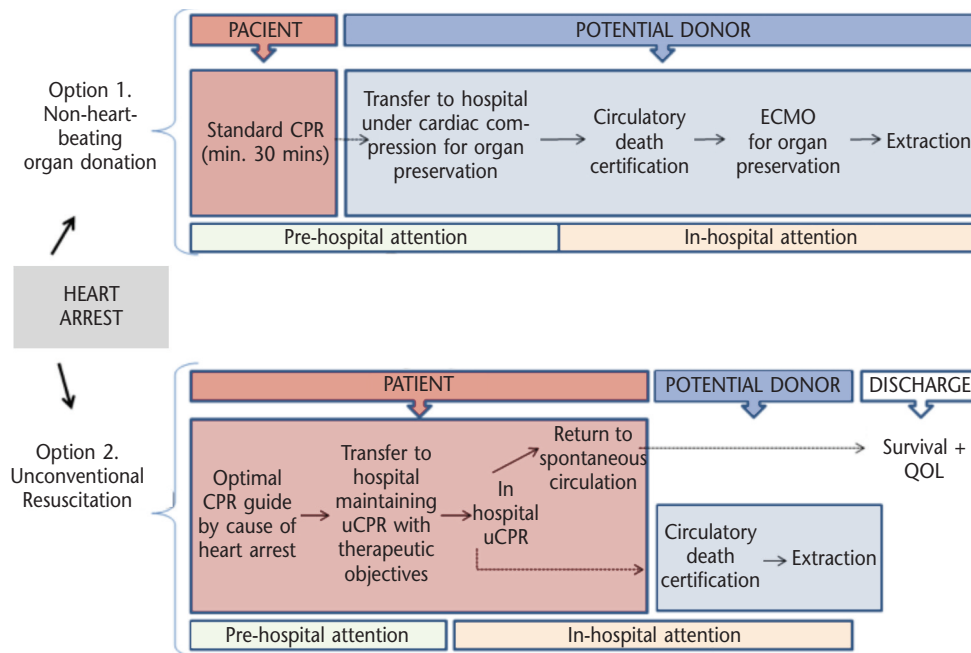


Figure 1. Options for the management of unexpected heart arrest victims. Taken from Ref. 1. CPR: Cardiopulmonary Resuscitation; QOL: quality of life; uCPR: Unconventional Cardiopulmonary Resuscitation ECMO: extracorporeal membrane oxygenation.

heart arrest, obtained by various groups in certain countries⁵⁻⁹ after implementation of uCPR programs.

Different types of unconventional cardiopulmonary resuscitation currently used

Victims of unexpected heart arrest, selected previously according to a predictive model, receive quality and minimally interrupted CPR in itinere, directed at the root cause of the refractory heart arrest. Rates of survival without sequelae are an incentive to establish programs that include such options care: a) cardiac catheterization during CPR, in heart arrest of coronary origin; b) life support with extracorporeal circulation (ECLS-ECMO) in heart arrest due to refractory cardiogenic shock; c) thrombolysis during resuscitation, when the origin of heart arrest is thromboembolism and cardiopulmonary and d) simultaneously, therapeutically induced moderate hypothermia during CPR.

Ethical conflicts arising from the current situation

The third fact, a consequence of the previous two, is the coexistence of both uDCDD and uCPR

programs, or the existence of the former but not the latter, despite the fact that the human and technical resources necessary for both are almost identical. Both situations lead to ethical and management dilemmas about the use of health resources.

The scientific, technical and ethical criteria for discriminating between victims of heart arrest as patients or potential organ donors should be clear and transparent for the attending professionals and for the management. Situations where only the one option is available represent a conflict for health professionals: why not implement uCPR programs to increase patient survival, so emergency teams are not just excellent at preserving potential organ donors? This would also help avoid a societal perception of mistrust and suspicion that efforts to preserve organ donors may compromise the possibility of optimal quality healthcare¹⁰.

Conclusions and final reflection

If indeed both uDCDD and uCPR protocols can and should coexist, the former should be subject to failure of uCPR. Only once scientifically indicated and ethically justifiable uCPR has been tried and failed should we consider transferring the victim as a potential organ donor to hospital

with the laudable goal of enabling life beyond death (Figure 1).

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In the article "Marcadores de gravedad en el herpes zóster y la varicela del adulto" published in *Emergencias* 2012;24:277-282, the participating center "Hospital Universitario Gregorio Marañón de Madrid" should have been included in the Addendum.