Resuscitation is a relatively young discipline, though it has been a current topic for years, and the top impact factor publications dedicate an important percentage of their space to this field. The relevance of cardiac arrest in modern society has led to innumerable research studies in an attempt to improve the results obtained in application to this disease condition. Two events were remembered in 2010 that deserve mention: the 50th anniversary of the publication of the external cardiac massage technique by Kouwenhoven, and the 25th anniversary of the introduction in Spain of the first protocolized resuscitation training courses for healthcare professionals, through the National Cardiopulmonary Resuscitation Plan of the Spanish Society of Intensive Care Medicine (SEMICYUC). However, also in 2010, and following the conference of the International Liaison Committee on Resuscitation (ILCOR) addressing consensus on resuscitation, new international recommendations were published in this field which will strongly mark its future both in terms of training and as regards the organization of the care and even the treatment provided in such situations.¹,²

This update reviews elaboration of the new recommendations in resuscitation and the novelties in basic life support and semiautomatic defibrillation, and in advanced life support. Finally, it presents the most relevant news in the field of training in resuscitation—a fundamental element for developing the mentioned recommendations, and for applying them to patients with cardiac arrest.

The careful examination made of the scientific evidence in developing the recommendations is an example that should be made known, and which could also be applied to other disciplines.

As regards training, there is a clear need in future to promote knowledge among all citizens of cardiac arrest, its warning signs and the importance of early activation of the emergency medical services—together with the performance of cardiopulmonary resuscitation (CPR) maneuvers until such medical care arrives. Although such instruction should include chest compression and mouth to mouth breathing maneuvers, it should be mentioned that CPR based only on chest compression does not appear to offer poorer results in terms of survival than compression with ventilation—this helping to facilitate resuscitation attempts by those people on scene at the time of cardiac arrest. On the other hand, the training of professional resuscitation teams should be oriented towards new skills—not only in reference to CPR techniques, but also to other aspects such as adequate teamwork and leadership. Lastly, it is more than likely that research effort in resuscitation will have to be oriented towards the effect of training upon patient survival in the context of cardiac arrest.¹,²

Regarding organization of the management of cardiac arrest, three aspects must be underscored which we
consider will require development in the near future. A first and salient aspect is intervention on the part of the telephone operators of the medical emergency services receiving calls alerting to possible cases of cardiac arrest. Adequate interrogation is required of the people who make such calls, adopting clear protocols to confirm the condition of cardiac arrest and at the same time to offer adequate help by telephone to allow basic CPR maneuvering. A second aspect to be considered is the development of programs for public access to defibrillation. These programs are of acknowledged efficacy, and their introduction is absolutely dependent upon adequate sensitization and awareness on
the part of the political authorities and the limitation of administrative obstacles for installing semiautomatic defibrillators in public places.\textsuperscript{3, 6} Lastly, all hospitals should adopt adequate protocols for the detection of patients at risk, for ensuring early care, and for the management of patients who have recovered from cardiac arrest. Indeed, as a more future objective, the creation of reference centers for the care of these patients could be contemplated.\textsuperscript{7, 8}

The fundamental objective in the management of cardiac arrest should be to ensure that so-called "quality CPR" is employed in all cases where resuscitation maneuvers are performed. This basically consists of adequate chest compression in terms of the force, frequency and depth applied; allowing complete chest decompression between successive compressions; avoiding hyperventilation and hyper-oxygenation; and, more relevantly, ensuring minimum interruptions during chest compression.\textsuperscript{1, 2}

Adequate and generalized training, quality CPR, and the introduction of care protocols for after cardiac arrest (including hypothermia and other measures) – with the creation even of regional centers – will all be key elements for improving survival in cardiac arrest.

The first important conference of the ILCOR for the development of single international guidelines was held in the year 2000, though following publication of these recommendations, each ILCOR member organization published its own guidelines, and the goal of establishing a single set of CPR recommendations has still not been reached. In general, consensus has been reached over the science of resuscitation, though local variations in the treatment recommendations are inevitable and are attributable to epidemiological differences, the existence of different healthcare models, differences in implementation, and cultural and economical factors. As an example, while medicalized ambulances supervised by physicians are common in Europe, in North America they are staffed by paramedics. These variations are reflected in sometimes important differences between the resuscitation guidelines of the American Heart Association (AHA) and the European Resuscitation Council (ERC) (Table 1). Undoubtedly, international cooperation has allowed more rigorous collection and analysis of the scientific evidence, though this has not always been followed by standardization of training and practice.

All those interested in Intensive Care Medicine and the care of critical patients are obliged to know and apply the latest developments in resuscitation offered by scientific evidence. The present update aims to offer the reader the most relevant aspects for facilitating knowledge and practice in this field.

Lastly, I wish to thank the editorial board of the journal for its interest in developing the subject of news in resuscitation, and its confidence in those of us who have prepared the following chapters of this update.

References


