

Introduction to the ANESTHESIOLOGY Cardiac Arrest and Resuscitation Issue

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ALTHOUGH anesthesiologists have recognized expertise in providing patient safety and comfort during surgical operations, their role largely extends beyond the operating room. Pain management, particularly but not exclusively in the postoperative setting, is a cornerstone of our clinical mission outside the operating theater. In many hospitals and medical centers, anesthesiologists are also heavily involved in critical care medicine. In France, they have been historically pioneers in building up the prehospital Emergency Medical System. In all these domains, academic and educational activities have been developed and promoted by anesthesiologists, as evidenced, for example, by the number of top-level publications by anesthesiologists in recent years in critical care. Bridging the gap between these domains is an urgent need for our specialty. It is from this perspective that the Journal chose to issue a call for articles and host a symposium at the American Society of Anesthesiologists Annual Meeting on the topic of Cardiac Arrest and Resuscitation in 2013.

In 2014, cardiac arrest remains a common and life-threatening disease with poor outcome. During the past years, strategies based on translational approaches from the bench to the bedside have successfully improved mortality in other common, life-threatening diseases such as myocardial infarction, cancer, or stroke. There is no reason why cardiac arrest, through more effective resuscitation, should not benefit from these previous success stories. However, examination of the international literature on cardiac arrest and resuscitation reveals a striking paucity of groups having developed experimental models on cardiac arrest. Yet, a better understanding of the pathophysiology of altered organ perfusion (such as the brain and the kidney), as well as of reperfusion-induced injury is key to developing concepts or feasibility of organ-protective approaches or testing new drugs. In this themed issue, the reader will find a selection of high-quality experimental articles that bring original contributions in these domains. Also, robust epidemiological data on the incidence and outcome of in-hospital cardiac arrests, primarily but not exclusively those occurring in the operating room, are mandatory to identify possible unmet needs in providing care, and this statement also applies to out-of-hospital cardiac arrest. The

reader will find here a panel of research articles dedicated to this task in important domains of the practice of anesthesiology, that is, anesthesia-related cardiac arrest and in hospitalization for labor and delivery. As illustrated in the themed Literature Review section included in this issue, a remarkable effort has been made by the international community toward addressing therapeutic issues related to cardiac arrest and reperfusion. As a result, robust clinical trials are now challenging previously well-accepted concepts in the clinical setting, such as the benefits of mild hypothermia or the use of large doses of epinephrine. A challenge for anesthesiologists is to lead some of these major clinical trials in future. The risk/benefit of new devices for cardiac resuscitation requires evaluation as well. These include automatic cardiac massage and extracorporeal circulation devices that may be crucial for refractory cardiac arrest. Research cooperation between emergency physicians, intensivists, and anesthesiologists, particularly those routinely using extracorporeal circulation devices, may provide important breakthroughs in this domain. Finally, a major goal successfully achieved in this issue of the Journal is to provide high-quality educational material in form of editorials, general reviews, Images in Anesthesiology, a case scenario, and some excellent case reports.

We believe that this Cardiac Arrest and Resuscitation Theme Issue in ANESTHESIOLOGY succeeds in highlighting the strengths and weaknesses of our specialty in this worldwide domain of interest for all physicians as it is to the general public. We hope our readers will take time to review some of this content on a problem they infrequently encounter and find material that can help them in their daily practice, just as we believe that this issue will succeed in promoting new research concepts and paradigms.

Competing Interests

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