

Out-of-hospital Cardiac Arrest. The Need for Comprehensive Information. Response



Parada cardiaca extrahospitalaria. La necesidad de una información integral. Respuesta

To the Editor,

We have read with great interest your comments on our article, and thank you for them.

As you say, our study centers on a special subpopulation within the wider population of patients who present out-of-hospital sudden death: namely, those alive when admitted to cardiac intensive care units. Although this could be considered a bias, as we acknowledge among the limitations of the study, we consider it of interest to contribute data on the clinical course and prognosis of these patients who represent a specific group of increasing importance in cardiac intensive care units.

Sadly, the encouraging prognostic data found in our group cannot be generalized to the population of patients with out-of-hospital sudden death, whose total survival rate is notably lower.¹

We think any approach to studying out-of-hospital sudden death will help us to improve our understanding of the general problem and continue working to optimize the attention these patients receive. Hence, we await with great interest the publication

of data from EPES (*Empresa Pública de Emergencias Sanitarias*, a public company belonging to the regional government of Andalusia and responsible for managing emergency services), to which you refer.

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On the Characteristics of Out-of-hospital Sudden Cardiac Death Survivors



Sobre las características de los supervivientes de muerte súbita cardiaca extrahospitalaria

To the Editor,

We have read the recently published article by Loma-Osorio et al.¹ with interest and wish to make some comments.

The population studied represents a group of patients who present with out-of-hospital cardiac arrest, all of cardiac etiology, whereas most series refer to around 75%.² Similarly, the authors choose the concept of out-of-hospital sudden death—the Spanish language term—instead of the more widely-used English-language term: out-of-hospital cardiac arrest. Sudden death and cardiac arrest are normally used as synonyms, as they are concepts with arbitrarily established limits on the same phenomenon. Sudden death has an epidemiologic focus and cardiac arrest, a clinical orientation. We consider the variables analyzed should have been those of Utstein's template (2004),³ to facilitate comparison with similar series. Similarly, the treatments administered by participating centers were not homogeneous, despite recommendations to that effect.⁴

Several aspects of the results have drawn our attention. As the number of non-cardiac cases excluded is not given, the high percentage of patients with shockable rhythm (64.4%) is remarkable when other series report 30% to 40% in patients who recovered spontaneous circulation.² The 38% incidence of events at home is far removed from that of other series in which this occurs in over 65% of cases.² Furthermore, it would have been interesting to have known about the time intervals involved: emergency service response times, time-to-activation, time-to-consulting room, start of life support measures, and spontaneous circulation recovery, which should have been presented as medians, not means. Other

issues that need clarifying are the criteria for the use of hypothermia (applied in 86 patients when 131 presented in shockable rhythm and 95.6% were in coma); cardiac catheterization, whether urgent or elective; and how many patients with non-ST segment elevation acute myocardial infarction were involved. The excellent neurological results are remarkable given that initially a high percentage of patients were in coma. This would suggest severity was not high and that a substantial number of pharmacologic cases were included. Finally, in the logistic regression model, introducing variables that interact—such as shockable rhythm and use of hypothermia or shock, pH and time of life support measures—spontaneous circulation recovery—would distort the predictive value of the model.

In the conclusions, despite excellent neurological results, the authors emphasize the need to implement the first links in the chain to survival, having reported improved survival due to improved interventions at these stages.⁵ The action taken in all cases of out-of-hospital cardiac arrest attended, whether the patient recovers or not, needs to be evaluated.

American Heart Association recommendations for 2010 introduce a fifth link in the chain of survival, corresponding to post-arrest care, demonstrating the need to progress in its development, as optimal care should include much more than therapeutic hypothermia.⁶ It would also be of great interest to know the characteristics and results not only of patients of cardiac etiology, but also of those with any etiology, and to evaluate the in-hospital protocols used.

Finally, close collaboration and coordination between emergency and other hospital services is essential. Attention must be unified, with the participation of a multidisciplinary, multi-professional team of emergency room physicians, cardiologists, intensive care specialists, neurologists, neurophysiologists, rehabilitation physicians, nurses and physiotherapists,⁶ independent of primary disease type, local hospital culture or the closed

compartments of medical specialties, in a change of culture affecting the specialties involved in attending these patients and putting professional exclusiveness and territorial concerns aside.

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On the Characteristics of Out-of-hospital Sudden Cardiac Death Survivors. Response



Sobre las características de los supervivientes de muerte súbita cardiaca extrahospitalaria. Respuesta

To the Editor,

We appreciate the interest aroused by our article. Having carefully read your letter, we would like to make the following comments.

We consider that the nature of the report in itself, a registry of patients with sudden cardiac death who arrived alive at cardiac intensive care units, explains the predominantly cardiac etiology, as well as the frequent finding of a first shockable rhythm or a lower incidence of sudden cardiac death occurring in the home than in other series. We agree that any other approach to the problem, such as the inclusion of patients who die prior to hospital admission and of those with noncardiac etiology, or study of the length of time that patients received prehospital care in an emergency medical service, constitutes another highly interesting view of the same problem.

Despite the lack of a common protocol, as we mentioned in the section on limitations, a consensus document on postresuscitation care was available at all the centers.¹ This document includes not only therapeutic hypothermia (the criteria for the application of which are explained in detail in the methods section), but also a systematized approach, agreed by consensus, to the comprehensive management of these patients. We consider that, as indicated on other occasions,² this is one of the aspects that may have contributed to our promising results, despite the seriousness of the patients' condition at the time of admission.

We take note of the interesting comment on the performance of catheterizations in patients without ST-elevation myocardial infarction: in addition to its use in acute reperfusion therapy, coronary angiography is a tool of unquestionable utility in the study of the etiology in many other patients. We also agree that we

should have referred specifically to the Utstein style,³ since our variables adapt to its recommendations, as is the case of the use of the Cerebral Performance Category score, which we do mention in the methods section.

In our series, half of the patients included had a good vital and functional prognosis at discharge and 6 months later. As is well known, the first links in the chain of survival are those that have the greatest impact on prognosis, whereas the importance of the steps taken for management following resuscitation is relative.⁴ Given that, in our registry, 92% of the cases of sudden cardiac death occurred in the presence of bystanders and only 29% were attended to by these witnesses, we feel that it would be interesting to support health education programs that encourage the general population to receive training in basic cardiopulmonary resuscitation maneuvers.

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