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Survival and neurological status after out-of-hospital cardiac arrest in the pediatric population in Andalusia[☆]

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Abstract

Objective: Little is known about the evolution and long-term neurological status of pediatric patients who survive out-of-hospital cardiac arrest. Our aim is to describe long-term survival and neurological status.

Design: Retrospective observational study, based on the Andalusian Register of out-of-hospital Cardiac Arrest.

Setting: Pre-hospital Care.

Patients: The study included patients aged 0–15 years between January 2008 and December 2012.

Interventions: Patients follow up.

Variables: Prehospital and hospital care variables were analyzed and one-year follow-up was performed, along with a specific follow-up of survivors in June 2014.

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Results: Of 5069 patients included in the register, 125 (2.5%) were aged ≤ 15 years. Cardiac arrest was witnessed in 52.8% of cases and resuscitation was performed in 65.6%. The initial rhythm was shockable in 7 (5.2%) cases. Nearly half (48.8%) the patients reached the hospital alive, of whom 20% did so while receiving resuscitation maneuvers. Only 9 (7.2%) patients survived to hospital discharge; 5 showed ad integrum recovery and 4 showed significant neurological impairment. The 5 patients with complete recovery continued their long-term situation. The remaining 4 patients, although slight improvement, were maintained in situation of neurological disability.

Conclusions: Survival after out-of-hospital cardiac arrest in pediatric patients was low. The long-term prognosis of survivors with good neurological recovery remains, although improvement in the rest was minimal.

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Supervivencia y estado neurológico de la parada cardiaca extrahospitalaria en edad pediátrica en Andalucía

Resumen

Objetivo: No existe demasiada información sobre la evolución y estado neurológico a largo plazo de los pacientes en edad pediátrica que sobreviven a una parada cardiaca extrahospitalaria. Nuestro objetivo es describir la supervivencia y estado neurológico de estos pacientes a largo plazo.

Diseño: Estudio observacional retrospectivo. Basado en el Registro Andaluz de Parada Cardiaca Extrahospitalaria.

Ámbito: Atención Prehospitalaria.

Pacientes: Entre 0 y 15 años atendidos entre enero de 2008 y diciembre de 2012 por Parada Cardiaca Extrahospitalaria.

Intervenciones: Seguimiento de pacientes.

VARIABLES: Se incluyen variables de la atención prehospitalaria, hospitalaria y del seguimiento al año y un seguimiento específico de los supervivientes en junio de 2014.

Resultados: Se incluyeron en el registro un total de 5069 pacientes de los que 125(2.5%) tenían 15 o menos años. La parada fue presenciada en el 52.8% de los casos y hubo reanimación previa en 65.6%. El ritmo inicial fue desfibrilable en 7 (5.2%) casos. Un 48.8% de los pacientes llegó al hospital aunque un 20% lo hizo en situación de reanimación en curso. De los 9 (7.2%) pacientes que sobrevivieron al alta hospitalaria, 5 de ellos lo hicieron con recuperación ad integrum y 4 con grave deterioro neurológico. Los 5 pacientes con recuperación completa mantuvieron su situación a largo plazo. Los 4 pacientes restantes, aunque con discreta mejoría, se mantuvieron en situación de discapacidad neurológica.

Conclusiones: La supervivencia de la parada cardiaca extrahospitalaria en edad pediátrica es baja. El pronóstico a largo plazo de los pacientes con buena recuperación neurológica desde el inicio se mantiene, aunque la mejoría en el resto es mínima.

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Introduction

While once considered a rare event,¹ out-of-hospital cardiac arrest (CA) in the pediatric population currently holds a relevant place in this type of disease.^{2,3} Nevertheless, in comparison with CA in the adult population, the available information referred to pediatric patients is scarce. Some series have presented a significant number of patients, analyzing the incidence of the disease at population level and the outcomes referred to survival and neurological status at hospital discharge.⁴ However, there is controversy regarding the long-term outcomes in terms of pediatric patient recovery. This situation is due to the few data available on neurological recovery in periods late after discharge from hospital. The most important series do not explore beyond

neurological status one month after the event.^{5,6} On the other hand, pediatric age has not been clearly defined in the literature on CA, and in this regard the incidence and final outcomes vary greatly according to the different age intervals considered. The age range involved therefore needs to be specified.^{5,7}

The present study describes the long-term outcomes in terms of survival and neurological status in patients between 0 and 15 years who suffer out-of-hospital CA.

Patients and methods

A retrospective observational study was made between January 2008 and December 2012, based on data obtained

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