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Letter to the Editor

Prophylactic amiodarone administration on ROSC after a successful first defibrillation



Dear Editor:

Cardiopulmonary resuscitation guidelines¹ suggest the use of amiodarone or lidocaine after the third shock in adults with refractory ventricular fibrillation or pulseless ventricular tachycardia (VF/pVT). The role of prophylactic antiarrhythmic medications in the situation of return of spontaneous circulation after successful defibrillation is considered uncertain, concluding^{1,2} that lidocaine use could be considered in special circumstances when treatment of VF/pVT might be compromised (such as during Emergency Medical System (EMS) transport) There is no evidence addressing the use of other antiarrhythmic drugs for this specific indication. But the likelihood of a recurrent episode of VF and refractory VF might be forcing healthcare professionals to use amiodarone and other antiarrhythmic drugs as a preventive measure after the first successful defibrillation.

A retrospective study of the EMS-FPUS 061-Galicia (Spain) database was carried out to verify if amiodarone was being used immediately after a successful defibrillation of the first VF episode and, if appropriate, to compare VF recurrence and survival rates after the preventive administration of amiodarone vs its suggested use after the third shock, (or non-use if the third does not occur). Only medical causes were studied. A total of 193 patients over 18 years old presented a monitored VF which was witnessed by EMS (physician) between 2006 and 2019. In 154 (79.7%) cases the first defibrillation attempt was successful (ROSC was obtained) and in the rest (39) the rhythm progressed to refractory ventricular fibrillation (29), asystole (9) and pulseless electrical activity (1). In 36 (23.3%) of the 154 cases in which the first defibrillation was successful, amiodarone was administered preventively after the return of spontaneous circulation, and in the remaining 118 (76.6%) cases amiodarone was delayed until the third shock (in the case of there being one). The results were as follows: VF recurrence: 2 patients (5.5%) vs 45 (38.15%) ($p < 0.001$; OR = 0.146), admitted to hospital: 36 (100%) vs 106 (88.8%) ($p = 0.036$; OR = 1.113), 30-day survival: 32 (88.8%) vs 99 (83.8%), ($p = 0.330$; OR = 1.059) and 1-year survival: 31 (86.1%) vs 95 (80.5%) ($p = 0.311$; OR = 1.070).

Prophylactic amiodarone administration on ROSC after a successful first defibrillation was conducted in nearly a quarter of the patients, and in spite of the fact of being a non-randomised study with a very small sized sample and an unadjusted model, the use was significantly associated with fewer patients presenting recurrent ventricular fibrillation episodes and with an improvement in hospital admission survival, with no evidence of harm. These results show an analogous tendency to those presented in the study of the pro-

phylactic lidocaine for post resuscitation care.³ So, further studies are needed to confirm this promising association between the outcomes and preventive administration of amiodarone.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Miguel Freire-Tellado

Emergency Medical Services Fundación Pública Urgencias Sanitarias 061, Lugo, Spain

E-mail address: miguel.freire.tellado@sergas.es,

Rubén Navarro-Patón*

Universidade de Santiago de Compostela, Spain

* Corresponding author at: Faculty of Teacher Training, Universidade de Santiago de Compostela, Avda. Ramón Ferreiro sn, 27001 Lugo, Spain.

E-mail addresses: ruben.navarro.paton@usc.es,

Javier Mateos-Lorenzo

Division of Nursing, Cantabrian Health Service 061, Cantabria, Spain

E-mail addresses: javier.mateos@scsalud.es,

Gabina Pérez-López
*Computer Analyst of the Emergency Medical Service Fundación
Pública Urgencias Sanitarias 061, Spain*
E-mail addresses: gabina.perez.lopez@sergas.es,

María del Pilar Pavón-Prieto
*Emergency Medical Services Fundación Pública Urgencias Sani-
tarias 061, Base 061, Ourense, Spain*
E-mail addresses: pilar.pavon.prieto@sergas.es,

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