Note of the editors: This is a BOWMAN-generated English translation of the officially indexed Spanish-language article, which should be cited as Emergencias 2026;38:318-320. In this translated version, the editors have supervised the process; however, it cannot be ruled out that some errors resulting from the artificial intelligence translation process may have gone unnoticed.

LETTERS TO THE EDITOR

Out-of-hospital cardiac arrest and hospital complexity: Association does not imply causation

Parada cardiaca extrahospitalaria y complejidad hospitalaria: asociación no implica causalidad

To the Editor,

We read with interest the article by Jorge-Pérez *et al.,* "Characteristics, management, and prognosis of out-of-hospital cardiac arrest of cardiac cause according to the treating center,"[1] and would like to comment on several aspects that may influence interpretation of the results.

The retrospective study uses the Minimum Basic Data Set (MBDS) as its source of information, an administrative and clinical database that collects only key variables at discharge,[2]

which imposes important limitations on the analysis of out-of-hospital cardiac arrest of cardiac (OHCA). Moreover, no reference is made to important prognostic variables such as the initial cardiac rhythm, whether the event was witnessed, bystander cardiopulmonary resuscitation (CPR), or the presence of agonal breathing. Shockable rhythms are strong predictors of survival, particularly when early defibrillation by witnesses is feasible, and conversion from nonshockable rhythms is associated with greater prehospital return of spontaneous circulation, survival, and favorable neurological outcome at 1 month.[3,4] Similarly, other factors have a decisive influence on outcomes, including CPR duration, time to defibrillation, the interaction between CPR and defibrillation, and implementation of dispatcher-assisted telephone CPR.[3] The absence of these determinants limits the ability of the adjustment model to adequately control for the initial severity of the event and may result in residual confounding between hospitals.

Of note, the protective effect observed in patients transferred to a PCI-capable center (group 2), should be interpreted cautiously. These patients were younger and had a higher prevalence of acute myocardial infarction and complications potentially amenable to coronary intervention, suggesting substantial clinical selection bias, whereby patients most likely to benefit therapeutically are precisely those referred to higher-complexity centers. Attributing the better prognosis to transfer or hospital type could therefore overestimate the true effect of health care structure. Furthermore, the low proportion of interhospital transfers observed (3.2%) is noteworthy and is lower than that reported in other health care systems with structured cardiac arrest networks.[5] This finding suggests that some potentially eligible patients may not be transferred to centers with greater therapeutic capabilities, although the database does not allow the clinical or organizational reasons underlying these decisions to be identified, making it difficult to interpret this result in terms of missed therapeutic opportunity. The 47.9% mortality rate observed in group 1 reflects a heterogeneous population, including patients who were ineligible for transfer to a PCI-capable center, as well as others with severe complications or comorbidities that independently determined an unfavorable prognosis. Therefore, the increased mortality cannot be interpreted as a consequence of not being transferred to more specialized hospitals.

Overall, the study by Jorge-Pérez *et al.* provides valuable data on hospital variability in the management of OHCA in Spain. However, the limitations inherent to the use of administrative databases and the potential selection bias in patient referral require cautious interpretation of the observed relationship between hospital complexity and prognosis. Future studies integrating hospital registries with emergency medical services data and detailed clinical variables would allow a more accurate assessment of the true impact of healthcare organization on outcomes in these patients.

Hedgar Berty Gutiérrez[1],
Elier Carrera González[2],
Jaykel Evelio Gómez Triana[3]

[1]*Family Doctors, Marshai Health S.L, Santa Cruz de Tenerife, Spain.*
[2]*Unidad de Terapia Intensiva, Hospital Docente Clínico Quirúrgico "Dr. Miguel Enríquez". La Habana, Cuba.*
[3]*Centro de Salud Nuestra Señora del Castillo, Sevilla, Spain.*

hedgarbg@gmail.com

Conflict of Interest Disclosures: None declared.

Author Contributions, Funding, and Ethical Responsibilities: All authors have confirmed their authorship, the non-existence of external funding, and the maintenance of confidentiality and respect for patients' rights in the author's responsibilities document, publication agreement, and assignment of rights to EMERGENCIAS.

Editor in Charge: Òscar Miró.

Article not commissioned by the Editorial Board and with external peer review.

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