

Risk Factors for Mortality after Out-of-hospital Resuscitation are More Diverse than Assumed

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Dear Editor,

We were interested to read the article by Al-Habsi et al. on a 5-year retrospective review of the risk factors for mortality in 586 patients who underwent attempted cardiopulmonary resuscitation after out-of-hospital cardiac arrest (OHCA).¹ Of the 586 patients included, return of spontaneous circulation (ROSC) was achieved in 178 (30.4%) patients.¹ Risk factors for mortality were identified as male gender, arterial hypertension, diabetes, respiratory disease, more than 2 comorbidities, and previous emergency department visits for cardiac symptoms or dyspnea.¹ The study is excellent, but some points should be discussed.

The first point is that it was not stated how it was ensured that the indication for cardiopulmonary resuscitation (CPR) was truly cardiac and not pulmonary or cerebral. Therefore, we should know how many of those admitted were ultimately diagnosed with pulmonary embolism, ischemic stroke, seizure, encephalitis or sinus vein thrombosis.

The second point is that it was not analyzed how many of the people admitted to the emergency room had been resuscitated by laypersons and how many by medical professionals outside the hospital. The outcome of resuscitation strongly depends on whether the resuscitation is performed by experienced personnel or by inexperienced laypersons.²

The third point is that in 96% of patients who did not survive, no autopsy was performed. Knowledge of the results of a cerebral, cardiac, and pulmonary autopsy in particular would be useful to determine whether a deceased person really died from a cardiac cause. Pulselessness, asystole or ventricular fibrillation can be caused not only by cardiac disease but also by cerebral, metabolic, immunological, infectious, or pulmonary disease.

The fourth point is that concomitant medication was not included in the assessment. The outcome of CPR can be highly dependent not only on comorbidity but also on concomitant medication. In particular, patients taking medication with arrhythmogenic or cardiodepressant side effects may have a worse outcome than patients who are not taking such medication at the time of CPR.

The fifth point is that the time between OHCA and the start of resuscitation was not measured. Since it is obvious that the earlier resuscitation is initiated, the greater the likelihood of ROSC, it would be imperative to include this latency period in the analysis.³

The sixth point is that the latency between the start of resuscitation and arrival in the emergency department may also be a crucial parameter influencing the outcome of patients with an OHCA.¹

The seventh point refers to the statement that 178 patients achieved ROSC in the emergency department. Does this mean

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that there was no out-of-hospital resuscitation? If this is indeed the case, why were these patients included and why were they not resuscitated earlier?

Overall, this interesting study has limitations that put the results and their interpretation into perspective. A discussion of these limitations would strengthen the conclusions and reinforce the message of the study. Risk factors for mortality after out-of-hospital resuscitation are more diverse than anticipated.

Availability of Data and Material

All data are available from the corresponding author.

Author Contribution

JF: was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. CAS, FAS, ACF: contributed to literature search, discussion, correction, and final approval.

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