

Letter

Timeliness of administration of vasopressors in CPR

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Published: 28 January 2009
This article is online at <http://ccforum.com/content/13/1/401>
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Critical Care 2009, **13**:401 (doi:10.1186/cc7691)

We read with great interest the report by Gueugniaud and coworkers [1] on the role of combined vasopressin and epinephrine during advanced cardiac life support for out-of-hospital cardiac arrest. The authors conclude that the combination does not improve outcome. In some of our previous studies [2,3] we identified improvements in restoration of spontaneous circulation (ROSC) and/or survival and neurological outcome when combining vasopressors to manage out-of-hospital cardiac arrest, and therefore we were surprised by the results of this study.

In our study [2] we showed that combined vasopressor treatment increased end-tidal carbon dioxide and mean arterial pressure values during cardiopulmonary resuscitation (CPR), and consequently improved ROSC, short-term survival and neurological outcome. Additionally, improved hospital discharge was observed in the subgroup of patients with initial asystole. In a previous study [3] we identified a significantly higher hospital discharge rate in the subgroup of patients with acute myocardial infarction as the underlying cause of ventricular fibrillation, when vasopressin was used during CPR.

In our opinion, the differences in findings between our studies [2,3] and that by Gueugniaud and coworkers [1] result partly from use of different methodology and partly from differences in population characteristics.

In the study by Gueugniaud and coworkers [1], the average arrival time of the advanced cardiac life support team and, especially, the average time to first application of vasopressor (22 minutes) are simply too long; this is probably the cause of the disappearance of shockable rhythm at arrival. In our study the time to first injection of vasopressin was on average between 10 and 11 minutes, which is at the end of second (circulatory and haemodynamic) phase of cardiac arrest, when vasopressors will still be expected to have some efficacy.

The average time to ROSC in our studies [2,3] was significantly shorter than in the study by Gueugniaud and

coworkers [1] (19 minutes in the vasopressin group and 29 minutes in epinephrine group in our study versus approximately 44 minutes in both groups in the new study). In our opinion the prolonged low-flow interval with ischaemia underpins the poor efficacy of combined vasopressors observed by Gueugniaud and coworkers.

In the study by Gueugniaud and coworkers [1], capnometric monitoring was not conducted in about 50% of CPRs, and so the efficacy of resuscitative efforts and corrections for potential insufficient cardiac massage during CPR are questionable.

We believe this study is more a demonstration of how important timely application of vasopressors is, rather than providing evidence of insufficiency of combined vasopressin and epinephrine in the treatment of cardiac arrest.

Competing interests

The authors declare that they have no competing interests.

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