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Original scientific articles

Is emergency department resuscitative thoracotomy futile care for the critically injured patient requiring prehospital cardiopulmonary resuscitation? [1] â˜†

Danny W Powell BS â^— ... Jeffrey L Johnson MD â^—

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Abstract

Background

Documented prehospital asystole justifies termination of resuscitation, but recently it has been proposed to extend this policy to patients in the field with pulseless electrical activity. Consequently, we questioned whether resuscitative thoracotomy is warranted in the critically injured patient who fails to respond to prehospital CPR.

Study design

A prospective database of all emergency department resuscitative thoracotomies (EDT) performed at our Level I trauma center has been maintained since January 1977. These registry data were augmented by a review of prehospital paramedic records for all survivors of EDT to verify length of CPR.

Results

During the 26-year study period, 959 patients underwent EDT. Of the 62 patients who survived to leave the hospital, 26 (42%) required prehospital CPR. The injury mechanism in these 26 patients was stab wounds in 18 (69%), gunshot wounds in 4 (15%), and blunt trauma in 4 (15%). The duration of prehospital CPR ranged from 3 to 15 minutes and in 7 patients CPR exceeded 10 minutes. Five survivors had asystole documented at the time of EDT; four of these patients had good functional outcomes at discharge. Each of these patients had pericardial tamponade from ventricular stab wounds. Patients with blunt trauma had uniformly dismal neurologic outcomes.

Conclusions

EDT after prehospital CPR can be used to salvage select critically injured patients. Based on these data, we propose that resuscitative thoracotomy is futile care in patients with blunt trauma requiring prehospital CPR longer than 5 minutes, and in patients with penetrating trauma with more than 15 minutes of prehospital CPR. EDT is warranted in those patients with penetrating trauma with less than 15 minutes of prehospital CPR, and should be performed despite documented asystole on arrival if pericardial tamponade is the proximate event.

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1 **No competing interests declared.**

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