Validation of a universal prehospital termination of resuscitation clinical prediction rule for advanced and basic life support providers.

Summary

Background

Prehospital termination of resuscitation rules have been derived for Emergency Medical Technician-Paramedics providing advanced life support care and defibrillation-only Emergency Medical Technicians providing basic life support care. We sought to externally validate each rule on a prospective cohort of prehospital cardiac arrest patients to determine if either rule could be proposed as a universal prehospital termination of resuscitation rule.
Methods

Investigators at the University of Toronto performed a secondary cohort analysis of data prospectively collected for the Resuscitation Outcomes Consortium Epistry-Cardiac Arrest trial from 1 April 2006 to 1 April 2007 by one site. The diagnostic test characteristics and predicted transportation rate were calculated for each rule.

Results

Of the 2415 patients with cardiac arrest of presumed cardiac etiology, the advanced life support rule recommended termination of resuscitation for 743 patients. No survivors were identified in this group. It had a specificity of 100% for recommending transport of potential survivors, a positive predictive value of 100% for death and a predicted transport rate of 69%. The basic life support rule recommended termination of resuscitation for 1302 patients, with no survivors. This rule had a specificity of 100%, a positive predictive value of 100% and a predicted transport rate of 46%.

Conclusions

Implementing the basic life support rule as a universal termination of resuscitation clinical prediction rule would result in a lower overall transport rate without missing any potential survivors. The universal rule would recommend termination of resuscitation when there was no return of spontaneous circulation prior to transport, no shock was given and the arrest was not witnessed by Emergency Medical Services personnel. This rule may be useful for emergency medical services systems with mixed levels of providers responding to cardiac arrest patients.

Keywords

Emergency medical services; Termination of resuscitation; Universal; Clinical prediction rule; Medical ethics; Out of hospital cardiac arrest; Cardiac arrest
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