TRANSPORT WITH ONGOING RESUSCITATION AFTER OUT-OF-HOSPITAL CARDIAC ARREST – HOW, WHEN AND FOR WHOM?

BACKGROUND

Patients with out-of-hospital cardiac (OHCA) arrest who do not achieve return of spontaneous circulation (ROSC) in the prehospital setting pose a great challenge to emergency medical services (EMS). The introduction of automated chest compression (ACC) devices has made transport of patients with ongoing resuscitation more feasible, but the impact of such practice on actual patient outcomes and provider safety is poorly understood. The universal termination of resuscitation-rule (uTOR) has been proposed to help identify futile cases.

METHODS AND AIMS

The Swedish cardiopulmonary resuscitation registry is a prospectively recorded nationwide registry of patient characteristics and resuscitation data including all patients with attempted resuscitation after OHCA. This was used to study the utilisation of ACC devices within Sweden and their association with survival. Moreover, local hospital registries and medical records in Lund, Sweden and West Midlands, United Kingdom were studied to identify and characterise patients taken to hospital with ongoing resuscitation after OHCA. These cohorts were studied regarding survival, frequency of hospital-based interventions and diagnostic performance of the uTOR.

PRELIMINARY RESULTS

Utilisation of ACC devices varied substantially between Swedish regions, ranging from 0.8 % to 79.8 % of all cases of OHCA. A negative association between device utilisation and survival was seen despite adjustment for measured confounders, but this finding must be interpreted with caution due to the risk of unmeasured confounding. Patients transported to hospital with ongoing CPR had very low survival rates in both Lund and West Midlands (1.7 and 1.3 %, respectively). Hospital-based therapies were performed in a minority of cases (21.3 % in Lund and 35.2 % West Midlands, respectively). The uTOR identified non-survivors with high positive predictive values (98.4 % in the Lund-cohort and 100 % in the West Midlands-cohort) but lacked specificity in the Lund-cohort (71.4 %).

SIGNIFICANCE

Patients with refractory OHCA should not routinely be taken to hospital with ongoing resuscitation and the uTOR might support EMS providers considering termination of resuscitation in the field. Our results do not support routine use of ACC devices, but they could pose a reasonable option in selected cases when transport with ongoing CPR is deemed necessary.

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