Abstracts

11 OUTCOMES AND MODIFIABLE RESUSCITATIVE CHARACTERISTICS AMONGST PAN-ASIAN OUT-OF-HOSPITAL CARDIAC ARREST OCCURRING AT NIGHT – A MULTINATIONAL, PROSPECTIVE, OBSERVATIONAL STUDY

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Aim The past decade has seen increasing civilian tourniquet use driven largely by a military evidence base. This work intended to correlate available data on the frequency of UK prehospital tourniquet use.

Methods Freedom of information requests were made to 13 UK ambulance trusts for numbers of the incidence of tourniquet use from 2015–16 and patient haemodynamic status (blood pressure and pulse) at time of application.

Results Most (9/13) trusts were unable to provide data regarding prehospital haemorrhage control techniques as this something that was not routinely recorded. Two trusts had only recently begun recording tourniquet use and so were unable to provide 12 months of data and another was able to deliver number of recorded uses but not patient haemodynamic status. A single trust was able to provide full details of annual tourniquet use in 31 patients. 14/31 (45%) of patients had a systolic BP of <100 mmHg and a further 6/31 (19%) had a pulse >100/min at application. 2 patients had a haemostatic pressure dressing applied before tourniquet use.

Conclusion There is a significant lack of data regarding UK ambulance service tourniquet use and this should be urgently increased to improve both research and clinical governance. Many (45%) patients are already in significant levels of shock prior to application of tourniquet use which is associated with very high levels of mortality and only further data collection will help to understand and ultimately address the reasons underlying this.

References

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12 INITIAL PREHOSPITAL VITAL SIGNS TO PREDICT SUBSEQUENT ADVERSE HOSPITAL OUTCOMES

12.2.1 TA Williams, JMK Ho, TH Tohira, DM Fatovich, PB Bailey, D Brink, PG Gwesen, GD Perkins, JH Finn. Prehospital Resuscitation and Emergency Care Research Unit, Curtin University; St John Ambulance Western Australia; Emergency Medicine, The University of Western Australia; School of Public Health and Preventive Medicine, Monash University; Warwick Medical School, University of Warwick; Heart of England NHS Foundation Trust; Emergency Medicine Royal Perth Hospital; and the Centre for Clinical Research in Emergency Medicine, Harry Perkins Institute of Medical Research; Intensive Care Unit, Royal Perth Hospital; School of Population Health, The University of Western Australia; Lead Consultant Paramedic, Clinical Directorate Scottish Ambulance Service

Aim There is growing interest to improve identification of the critically ill patient in the prehospital setting. We aimed to assess whether initial vital physiological signs in the prehospital setting can predict subsequent adverse hospital outcomes, defined as intensive care (ICU) admission or death in the emergency department (ED).

Methods The initial prehospital physiological data of all adult patients, transported by the St John Ambulance Service to the metropolitan public EDs were linked to the ED information system in this retrospective cohort study. Cardiac arrest unwitnessed by paramedics, rural, inter-hospital, non-emergency, and

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air transfers were excluded. Area under receiver operating characteristic curve (AUROC) was assessed. Logistic regression with a restricted cubic spline function was used to assess the ability of four physiological variables: systolic blood pressure (BP), heart rate (HR), respiratory rate (RR) and Glasgow Coma Score (GCS) to predict adverse hospital outcomes.

Results Of the 1 79 374 patients, 2268 (1.3%) were subsequently admitted to ICU or died in the ED. AUROC was 0.829 (95% confidence interval 0.820–0.839). The GCS was the most important vital sign, and explained about 56% of the variability of the outcome compared to <11% by each of the other vital signs. A strong non-linearity between initial BP and adverse hospital outcomes was also observed but not with GCS, HR or RR.

Conclusion Initial prehospital vital signs, in particular GCS, may predict subsequent adverse hospital outcomes. Non-linear associations between initial physiological signs and subsequent outcomes should be considered in developing prehospital alert systems.

REFERENCES

Conflict of interest P. Bailey is the Clinical Services Director of St John Ambulance-Western Australia. D. Brink is the Executive Manager Clinical Governance St John Ambulance-Western Australia. D. Brink is the Executive Manager Clinical Governance St John Ambulance-Western Australia. St John Ambulance Western Australia played a role in the development of the tool.

We compared survival in out-of-hospital cardiac arrest (OHCA) cases recognised at initial dispatch (“primary recognition”) with those subsequently recognised as OHCA (“secondary recognition”) and those not recognised as OHCA (“non-recognition”).

Methods We analysed cases of paramedic-confirmed OHCA in Perth, Western Australia (WA), from January 2014 to December 2015. We excluded traumatic OHCA, paramedic-witnessed arrests, and cases where paramedics did not attempt resuscitation. Emergency ambulance calls in WA are processed using the Medical Priority Dispatch System, via ProQA software. We analysed the ProQA data of each call for the presence of OHCA-specific dispatch codes (including code revisions) and call-taker instructions for cardiopulmonary resuscitation (CPR).

Results Among 1430 cases of OHCA, 84% (n=1195) were recognised by call-takers as OHCA. Of the 1195 recognised cases, 32% (n=386) were identified through secondary recognition. Survival to 30 days was significantly higher among cases with secondary recognition (13.2%) than among cases with primary recognition (7.9%) and non-recognised cases (7.7%) (p=0.008). More than half of all cases of secondary recognition were initially dispatched as Unconscious/Fainting patient.

Conclusion Nearly one third of call-taker recognition of OHCA occurs after initial dispatch. The higher survival probability of patients recognised by secondary recognition is consistent with those patients arresting more recently relative to the timing of the call. For many cases of OHCA, the call-taker’s ability to stay on the call and remain alert to the possibility of OHCA may strengthen the chain of survival.

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