hospital selection in the field and to compare it with the clinician's judgment.

Method All thrombolysis candidates transported by the emergency medical services from January to June 2017 were evaluated for FAST-ED scale items by two investigators (TP, DS). A neuroradiologist (PV) evaluated the presence of vessel occlusion on the admission CT angiography in a blinded manner. To compare two independent raters (TP, DS), interclass correlation coefficient was calculated based on a sub-cohort of 100 patients.

Results The sample consisted of 610 thrombolysis candidates. LVO was diagnosed in 39 cases (6.4%). Majority of the patients (81.8%) scored 0–3 on FAST-ED scale. Sensitivity of FAST-ED ≥ 4 to predict LVO was 58%, whereas the specificity 87% and the negative predictive value 94%. For more experienced clinician, it was 79.4%, 88% and 97%, respectively. For less experienced clinician the corresponding numbers were 50%, 89%, and 92%. Interclass correlation coefficient for both raters for the whole range of FAST-ED was 0.92 (0.88–0.94).

Conclusion The higher the FAST-ED score, the higher the probability of correctly identifying LVO in the field. However, with the most commonly used cut-off of ≥ 4 points, only 28% of the thrombolysis candidates had LVO.

REFERENCE

1. Lima FO, Silva GS, Furie KL, Frankel MR, Lev MH, Camargo EC, et al. Field assessment stroke triage for emergency destination: A Simple and Accurate Prehospital Scale to detect large vessel occlusion strokes. *Stroke* 2016;**47**:1997–2002.

Conflict of interest None.

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12 ASSOCIATION BETWEEN USE OF PREHOSPITAL MECHANICAL CPR DEVICE FOR OUT-OF-HOSPITAL CARDIAC ARREST AND OUTCOME BY PATIENT TRANSPORT INTERVAL: PILOT STUDY

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Background In this study, we aimed to investigate effect of mechanical CPR device (MechCPR) on OHCA by patient transport interval (PTI). We hypothesized MCPR is effective on survival with prolonged PTI (P-PTI).

Method This is an observational study using Korean Cardiac Arrest Research Consortium (KoCARE) data from October 2015 to Jun 2018. EMS treated OHCA presumed of cardiac etiology without field return of spontaneous circulation (ROSC) was included. Patients with less than 15 years old, with unknown information of MechCPR, PTI and outcome were excluded. Exposure was prehospital MCPR use and outcome was survival to admission. PTI was defined as time interval between scene to hospital. P-PTI was defined if PTI longer than 9 min and NP-PTI if less. Multivariable logistic regression by PTI group (reference=manual CPR) was performed to calculate adjusted odds ratios (AORs) with 95% confidence intervals (95% CIs) for outcome.

Results From total 2,214 OHCA patients, in rate difference of survival to admission in NP-PTI group comparing no-MCPR to MCPR was -3.44% (-11.95% – 5.08%) and in P-PTI -4.34% (-11.14% – 2.46%). In multivariable logistic analysis, aOR was 1.63 (0.94–2.85) in NP-PTI group and 1.74 (1.14–2.67) in P-PTI group.

Conclusion For OHCA with PTI 9 min or longer, MechCPR was associated with survival to admission for patients failed to be restored in field. Based on this pilot study, further study in larger population is needed to investigate optimized use of MechCPR for survival benefit.

Conflict of interest No conflict of interest.

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13 VALIDATING THE HEART RATE VARIABILITY RISK PREDICTION MODEL AND ACCELERATED DIAGNOSTIC PROTOCOL (HRVPM-ADP) FOR CHEST PAIN PATIENTS AT THE ED

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Background Patients presenting to the emergency department (ED) with chest pain can have varying etiologies from benign musculoskeletal pain to life-threatening acute myocardial infarction. HRVPM-ADP¹ was previously derived as a non-invasive risk stratification tool for chest pain. We aimed to validate this novel triage method and compare it against the HEART score.

Method This study retrospectively analysed 545 chest pain patients presenting to Singapore General Hospital between January 2014 and June 2016. The primary outcome was 30 day major adverse cardiac events (MACE). HRV prediction model (HRVPM) was previously derived with 6 HRV and 3 ECG variables. Troponin results were then added to develop an accelerated diagnostic protocol (HRVPM-ADP). Performance of the HRVPM-ADP was validated and compared against the HEART score.

Results HRVPM had an AUC of 0.711 (95% CI 0.659, 0.763). This outperforms HEART with AUC 0.708 (95%CI 0.658, 0.758). HRVPM-ADP identified low risk chest pain with sensitivity of 98.5% (95%CI 96, 100) and negative predictive value (NPV) of 96.0% (95% CI 89, 100). In comparison, a low risk HEART score (0–3) had sensitivity of 94.8% (95%CI 89, 98) and NPV of 92.7% (95%CI 85, 97).

Conclusion HRVPM is a non-invasive risk stratification tool which has demonstrated comparable performance with the HEART and can be used as an ADP to identify low-risk chest pain patients in the ED who are safe for early discharge.

REFERENCE

1. Ting CE, et al. Heart rate variability and pre-hospital risk stratification of chest pain patients. European EMS Congress, Copenhagen, Denmark, April 2018.

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