

[EngO2]English Session2

Chair:Fumimasa Amaya(Kyoto Prefectural University of Medicine, Japan)

Fri. Mar 1, 2019 2:00 PM - 3:00 PM 第11会場 (国立京都国際会館1F Room C-2)

[EngO2-2]Effect of certified emergency life saving technicians for out-of-hospital cardiac arrest patients: A report from the JCS-ReSS study

Hiromichi Naito^{1,2}, Tetsuya Yumoto^{1,2}, Yoshio Tahara^{1,3}, Naohiro Yonemoto^{1,4}, Hiroshi Nonogi^{1,5}, Hiroaki Shimokawa^{1,6}, Ken Nagao^{1,7} (1.JCS-ReSS Group, Japan, 2.Okayama University Hospital, Advanced Emergency and Critical Care Medical Center, Japan, 3.Division of Coronary Disease, National Cerebral and Cardiovascular Center Hospital, Japan, 4.Department of Biostatistics, Kyoto University School of Public Health, Japan, 5.Shizuoka General Hospital, Japan, 6.Department of Cardiovascular Medicine, Tohoku University Hospital, Japan, 7.Nihon University Hospital, Cardiovascular Center, Japan)

【ライブ配信】

Introduction: Emergency life-saving technicians (ELSTs) are certified specialists trained to provide technique and knowledge for prehospital emergency care in Japan. Since April 1991, number of ELSTs is increasing. Commonly, ambulances are organized to have three emergency medical service (EMS) personnel with at least one ELST. However, there are still some cases without an ELST. Use of advanced airways (endotracheal intubation/supra-glottic airways) and administration of adrenaline are limited to ELST by law, nevertheless, previous studies could not demonstrate their efficacy. Effectiveness of ELSTs over basic EMS personnel on out-of-hospital cardiac arrest (OHCA) remains unclear.

Hypothesis: We tested whether presence of an ELST improves the outcome for OHCA patients.

Methods: We conducted a retrospective study using Utstein-Style population cohort database (Japanese National Registry). Patients with OHCA transported to hospital from 2011 to 2015, were included. Patients under 18; patients with “do not resuscitate order”; presence of a doctor during the transport were excluded. We compared two OHCA patient groups. Group A: patients transported by EMS including at least one ELST. Group B: patients transported only by basic EMS personnel. The primary outcome measure was good neurological outcome defined by Cerebral Performance Category (CPC) 1 or 2. The secondary outcome measures were 1-month survival and return of spontaneous circulation (ROSC). A multivariable logistic regression model was used to adjust for the patient baseline characteristics.

Results: Included were 586623 OHCA patients with 571588 patients in Group A and 15035 patients in Group B. Patient baseline characteristics were as follows: age (Group A vs Group B [Mean ± SD]: 75.2 ± 15.6 vs 75.7 ± 15.2 years), male sex (56.7 vs 57.1%), proportion of initial rhythm VF/VT (7.2 vs 6.7%), estimated cardiac origin (59.4 vs 62.1%), witnessed collapse (40.5 vs 40.3%), bystander CPR (45.1 vs 44.5%), dispatcher instruction for CPR (53.0 vs 49.9%) and time from EMS call to hospital arrival ([Mean ± SD]: 33.9 ± 12.5 vs 34.4 ± 13.5 min). In the multivariable logistic regression, there was significant difference in proportion of CPC 1/2 (Group A vs Group B: 2.5% vs 2.1%, OR: 1.16, 95%CI: 1.02-1.31, p = 0.04), 1-month survival (4.9% vs 4.1%, OR: 1.19, 95%CI: 1.08-1.31, p < 0.001), or ROSC (8.2% vs 5.3%, OR: 1.69, 95%CI: 1.56-1.84, p < 0.001) between two groups.

Conclusions: ELSTs contribute to improve the outcome of OHCA patients with their knowledge and technique probably other than advanced airway management or administration of adrenaline.