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Tanaka H

Kokushikan University, Japan

Quick Epinephrine administration induces favorable neurological outcomes in out-of-hospital cardiac arrest patients

Objective: The evaluate impacts of quick Epinephrine (as epi) administration time on favorable neurological outcome at 1 month and ROSC in patients.

Method: A total of 506,046 witnessed OHCA patients conducted between Jan. 2011 to Dec.2014 were for nationwide prospective, population-based observational study. We extracted 13,326 eligible patients with inclusion criteria, in which ELST reached the patient within 16 minutes after emergency call and epi was then administered within 22 minutes of contacting the patients (within 99% percentile). We divided subjects into two groups: Early response (as ER) group (n=6,956) was contacted within 8 minutes after 119 call and delay response (as DR) group (n=6,370) was contacted between 8 minutes to 16 minutes after 119 call. Further divided into sub groups in which the epi was administered within 10 minutes after patients contact (Early Administration: as EA) and epi was administered 10 minutes or more after contact (Prolong Administration: as PA), respectively. Multiple logistic regression analysis and adjusted odds ratio (AOR) were determined for CPC1-2 as primary outcome at 1 month after and as secondary outcomes.

Results: The ER group and DR group had almost identical clinical background. When taking both ER and DR groups with prolong epi administrations as reference, AOR of the ER groups with early administration was 2.12 (1.54-2.92) and DR group with early administration was 2.66 (1.97-3.59) in CPC1-2. AOR of the ROSC rate was 2.00 (1.79-2.25) for ER group with early administration and also 2.00 (1.79-2.25) for DR group with early administration. Both the CPC1-2 rate and the ROSC rate were significantly higher for the both ER and DR with early administration groups compared to the prolong administration. Considerations: In cases of OHCA, it clearly indicates that the CPC1-2 rate after 1 month can be improved even in the cases of epi administered within 10 minutes after ELST contact, even delay response time up to 16 minutes.

Conclusion: We conclude that target time for field epi administration on OHCA is 10 minutes. Prolong administration should be prohibit. ELST must administer epi within 10 minutes after contact OHCA patient, but further, Improvement such as revising local protocols to allow the quick administration of epi are also required.

Biography

Tanaka H is a Professor, Director and Chairman of EMS system at Graduate School of Kokushikan University and Senior Research Scientist of Disaster Prevention at EMS and Rescue Institute of Kokushikan University. He is also appointed as First President of Asian Association of EMS, All Japan Paramedic Education Association, Committee Member of National Resuscitation Council, PAD Council of Ministry of Health Welfare and Labor and Board Member of Japanese Society of Emergency Medicine, Japanese Association of First Aids and Emergency Medicine.

Notes:

hidetana@kokushikan.ac.jp