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Authors

Lee, SC
Lee, SY
Song, KJ
et al.

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3 Comparison of the Effect of Audio and Video-Instructed Dispatcher-Assisted CPR on Outcomes After Out-of-Hospital Cardiac Arrest

Lee SC[1], Lee SY[2], Song KJ[3], Shin SD[2] / [1]Department of Emergency Medicine, Dongguk University Ilsan Hospital, Gyeonggi-do, South Korea; [2]Department of Emergency Medicine, Seoul National University College of Medicine; [3]Department of Emergency Medicine, Seoul National University Boramae Medical Center, Seoul, South Korea

Introduction: This study aimed to compare the effect of audio-instructed dispatcher-assisted cardiopulmonary resuscitation (DA-CPR) and video-instructed DA-CPR on resuscitation outcome after out-of-hospital cardiac arrest (OHCA) in the real world.

Methods: We conducted a cross-sectional study for resuscitation-attempted adult OHCAs in Seoul, Korea. In 2017 the dispatch center of Seoul introduced video-instructed DA-CPR; the center had used audio-instructed DA-CPR since implementation in 2010. When more than two bystanders were on the scene and could handle a video-call, a dispatcher would call them back and instruct them in how to perform CPR via the video-call. In other situations, dispatchers would provide standard audio-instructed DA-CPR. The primary outcome was survival to discharge. The secondary outcome was good neurological outcome at hospital discharge. The tertiary outcome was early instruction time interval (ITI), which measured time from the call to the initiation of CPR instruction 90seconds). We then compared the outcomes of DA-CPR (audio group) vs video-instructed DA-CPR (video group). We performed a multivariable logistic regression analysis and calculated adjusted odds ratios (AOR) with 95% confidence intervals (CI), adjusting for potential confounders. The propensity score matching (PSM) method was used to increase comparability of the two groups, and we used the same logistic regression model for the PSM population.

Results: We evaluated a total of 1720 eligible OHCA cases (1489 in the audio and 231 in the video group) ..The median ITI was 136 seconds in the audio group vs 122 seconds in the video group (p=0.12). Survival to discharge was 8.9% in the audio group and 14.3% in the video group (p<0.01). A good neurological outcome was 5.8% in the audio group and 10.4% in the video group (p<0.01). Compared with the audio group, the AORs (95% CIs) for survival to discharge, good neurological outcome and early ITI of the video group were 1.20 (0.74 to 1.94), 1.28 (0.73 to 2.26) and 1.00 (0.70 t0 1.43), respectively. PSM population showed similar results with the original population.

Conclusion: Compared with audio-instructed DA-CPR, video-instructed DA-CPR was not associated with survival improvement in the observational study conducted in one metropolitan city. A randomized, controlled trial would be needed to compare the true effect of video- vs audio-instructed DA-CPR.

4 Changes in Opioid Prescribing in Two Urban Emergency Departments from 2011-2016

Voelker J; Sabonjian M, Maio V, Mammen PE / Jefferson Health, Thomas Jefferson University Hospital, Philadelphia, PA

Objective: In 2011, emergency department (ED) providers were identified as one of the top five opioid prescribers in all age groups under 40 years. Since that time, ED providers have worked to address unsafe opioid-prescribing practices amid the growing opioid epidemic and to develop safer clinical practice strategies and guidelines. We sought to describe the change in annual opioid prescription rates and primary diagnoses for patient encounters discharged from the ED.

Methods: This retrospective study used electronic health records for all patients discharged with and without an opioid prescription from two urban, academic EDs from 2011 – 2016, with no exclusion criteria. We used the *International Classification of Diseases*, 9th and 10th editions (ICD-9 and ICD-10, respectively) codes to categorize discharge diagnoses. The proportion of discharges with an opioid prescription relative to total discharges was calculated by year and also by clinical and demographic characteristics. We performed descriptive statistics including chi-squared tests to describe the change over time in opioid prescription rates.

Results: Of 469,358 discharged patients, 56,684 (12.1%) received an opioid prescription from 2011-2016; 54.5% were female, and mean (standard deviation) age was 44.4 years (16.0). Over time, the proportion of opioid prescriptions decreased, with the highest in 2011 (23.0%) and the lowest in 2016 (5.7%) (p<0.001). The top five diagnostic categories, representing >80% of all opioid encounters, were as follows: injury; poisoning and other external causes (36.6%); musculoskeletal system and connective tissue conditions (17.1%); symptoms, signs, abnormal clinical and laboratory findings, and ill-defined conditions (12.7%); digestive system conditions (8.5%); and genitourinary system conditions (7.8%). In 2011, 45.0% and 44.2% of discharges with a diagnosis involving digestive system conditions and musculoskeletal system/connective tissue conditions, respectively, received an opioid prescription compared to 11.8% and 9.1% in 2016 (p<0.001).

Conclusion: The proportion of discharged patients receiving an opioid decreased by 75% between 2011 and 2016, with focused education and increased awareness. Rates of opioid prescribing decreased for all diagnostic categories, notably for diseases involving musculoskeletal/connective tissue, the digestive system, injury, poisoning and external causes, and neoplasms.