Abstract: P4170

Survival after dispatcher assisted CPR in out of hospital cardiac arrest compared to CPR without dispatcher assistance and no CPR before emergency medical services arrival - A nationwide study

Authors:
G Riva¹, M Jonsson¹, M Ringh¹, A Claesson¹, T Djarv¹, P Nordberg¹, J Hollenberg¹, ¹Karolinska Institute, Center for Resuscitation Science, Department of Medicine Solna - Stockholm - Sweden,

On behalf: Center for Resuscitation Science

Topic(s):
Management of Out of Hospital Cardiac Arrest

Citation:

Funding Acknowledgements:
Swedish Heart and Lung Foundation

Background:
Cardiopulmonary resuscitation (CPR) before arrival of emergency medical services (EMS) is associated with survival in out-of-hospital cardiac arrest. Dispatcher assisted CPR (DA-CPR) has been shown to increase CPR rates. However there are several challenges to successful DA-CPR, such as identification of cardiac arrest, time delays to CPR instructions, time delays to start of chest compression and quality of CPR.

Purpose:
The aim of this study is to assess survival in out of hospital cardiac arrest after no CPR, DA-CPR and CPR without dispatcher assistance before EMS arrival in a nationwide cardiac arrest register.

Methods:
A register based observational study. All consecutive Out of Hospital Cardiac Arrests reported to the Swedish Register for Cardiopulmonary Resuscitation in 2010 – 2017 were collected. Patients with cardiac arrest witnessed by EMS, who received CPR by off-duty medical professionals, missing data on CPR, DA-CPR or survival were excluded. Exposure was categorized as either; no CPR before EMS arrival (NO-CPR), dispatcher assisted CPR before EMS arrival (DA-CPR) and CPR before EMS arrival without dispatcher assistance, spontaneous CPR (S-CPR). Propensity score matched cohorts were used for comparison between groups. Primary endpoint was 30-day survival.

Results:
Out of 36309, a total of 15471 patients were included, 41.6% received NO-CPR 31.0% received DA-CPR and 27.4% received S-CPR. In propensity score matched cohorts survival to 30-days was 9.0% after NO-CPR, 13.6% after DA-CPR and 15.8% after S-CPR. Using DA-CPR as reference, NO-CPR was associated with lower survival (Conditional OR 0.61, 95% CI 0.52-0.72), absolute difference 4.6% (95% CI 3.0%-6.2%) and S-CPR was associated with higher survival (Conditional OR 1.21 (95% CI 1.05-1.39), absolute difference 2.3% (95% CI 0.5%-4.0%).

Conclusion:
In this nationwide study spontaneous CPR was associated with the highest survival. When spontaneous CPR is not initiated DA-CPR is a reasonable option.
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