

Category : **Cardiovascular: cardiac arrest\CPR**

A46 - Dispatcher-assisted conventional cardiopulmonary resuscitation and outcomes for pediatric out-of-hospital cardiac arrests

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Introduction:

In pediatric out-of-hospital cardiac arrest (OHCA), as asphyxia cardiac arrest is more common than cardiac arrest from a primary cardiac event, effective ventilation is crucial during CPR. We hypothesized that dispatcher-assisted conventional CPR would be better than dispatcher-assisted compression-only CPR as a bystander CPR instruction.

Methods:

We analyzed the records of 8172 children who received bystander dispatcher-assisted CPR after OHCA using the All-Japan Utstein-style registry for 13 years (2005–2017). Patients were divided into conventional CPR (n=3077) and compression-only CPR (n=5095) groups. The primary study endpoint was 1-month neurological intact survival, defined as a Cerebral Performance Categories score of 1–2 (CPC 1–2). Secondary study endpoints were 1-month survival and pre-hospital return of spontaneous circulation (ROSC).

Results:

The CPC 1–2 rate was significantly higher in the conventional CPR group than in the compression-only CPR group (before propensity score [PS] matching, 5.7% [175/3077] vs. 3.1% [160/5095], p<0.0001; after PS matching, 6.0% [156/2618] vs. 2.6% [69/2618], p<0.0001). Multivariable logistic regression analysis revealed that compared with compression-only CPR, conventional CPR was associated with increased odds of CPC 1–2 (before PS matching, adjusted OR 2.48, 95% CI 1.91–3.22, p<0.0001; after PS matching, adjusted OR 2.42, 95% CI 1.76–3.32, p<0.0001). There were significant differences in the survival and ROSC analysis between the conventional CPR and compression-only CPR groups (before PS matching, 13.4% [412/3077] vs. 10.3% [523/5095] for survival, p<0.0001, 8.0% [246/3077] vs. 6.2% [315/5095] for ROSC, p<0.01; after PS matching, 13.9% [365/2618] vs. 9.4% [245/2618] for survival, p<0.0001, 8.5% [223/2618] vs. 5.2% [135/2618] for ROSC, p<0.0001).

Conclusion:

Dispatcher-assisted conventional CPR may be preferable to dispatcher-assisted compression-only CPR as an optimal CPR instruction for coaching callers to perform bystander CPR.