Abstract

Introduction: There is limited data on paediatric resuscitation outcomes in Asia. We aimed to describe outcomes of paediatric in-hospital cardiac arrests (IHCA) and peri-resuscitation factors associated with mortality in our institution. Materials and Methods: Using data from our hospital’s code registry from 2009 to 2014, we analysed all patients younger than 18 years of age with IHCA who required cardiopulmonary resuscitation (CPR). Exposure variables were obtained from clinical demographics, CPR and post-resuscitation data. Outcomes measured were: survival after initial CPR event and survival to hospital discharge. We analysed categorical and continuous variables with Fisher’s exact and Wilcoxon rank-sum tests respectively. Statistical significance was taken as $P < 0.05$. Results: We identified 51 patients in the study period. Median age of patients was 1.9 (interquartile range [IQR]: 0.3, 5.5) years. Twenty-six (51%) patients had bradycardia as the first-recorded rhythm. The most common pre-existing medical condition was respiratory-related ($n = 25$, 48%). Thirty-eight (75%) achieved sustained return of spontaneous circulation, 24 (47%) survived to paediatric intensive care unit (PICU) discharge and 23 (45%) survived to hospital discharge. Risk factors for hospital mortality included: age, duration of CPR, adrenaline, calcium or bicarbonate administration during CPR, Paediatric Index of Mortality (PIM)-II scores, first recorded post-resuscitation pH and hyperglycaemia within 24 hours of resuscitation. Conclusion: We demonstrated an association between clinical demographics (age, PIM-II scores), CPR variables (duration of CPR and administration of adrenaline, calcium or bicarbonate) and post-resuscitation laboratory results (first recorded pH and hyperglycaemia within 24 hours) with PICU survival. The availability and quality of post-resuscitation care may have implications on survival after paediatric IHCA.

Key words: Cardiopulmonary resuscitation, Child, Infant