

How does cardiac arrest of traumatic origin affect the prognosis of children?

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Abstract

Objective

To know the outcome of children who suffered from traumatic cardiac arrest (CA) compared to children with other causes of CA, and if there are some differences in both groups regarding to some predictors in children.

Methods

Multicentre prospective study in children until 18 years, presenting CA in an emergency prehospital or hospital service. We collected first known rhythm, lactate, pH and PELOD (Paediatric Logistic Organ Dysfunction scale) in first 24 hours. We also recorded if there was return of spontaneous circulation (ROSC), survival and POPC (Paediatric Overall Performance Category) at discharge and 6 months. We used Student test, Chi squared test and Fisher test with risk ratio (RR) and its 0.95 confidence interval in case of statistical significance.

Results

27/188 (14.4%) were patients with traumatic CA, 62.6% male. Median age 2.5 years (range 0-17.1)

There was no statistical difference in age in both groups, but we found a higher proportion of males in trauma group (88.9% vs 57.1%), $p= 0.02$, RR 4.9 (1.5-15.7).

There were not significant differences regarding to proportion of asystole, lactate, pH or PELOD.

We didn't find any significant differences related to ROSC, sustained ROSC, POPC under 3 – better outcome- at discharge or at 6 months. Nevertheless, there was worse survival at discharge in trauma patients, 12% vs 40.3%, $p=0.006$, RR 1.5 (1.2-1.8) and at 6 months, 8.3% vs 30.9%, $p=0.24$, RR 1.3 (1.1-1.6). Two patients survived at 6 months with POPC under 3.

Conclusions

CA of traumatic origin decreases the survival of children at hospital discharge and at 6 months, however some children who suffered traumatic CA achieve a good functional outcome at 6 months.

Patients who suffered from traumatic CA didn't have any differences in some known prognosis factors (asystole, lactate, pH, PELOD).