7 - Effects of age, gender, and response time on the outcomes of patients following out-of-hospital cardiac arrest in Asia

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Background

Out-of-hospital cardiac arrest (OHCA) is one of the major public health concerns with, e.g., mortality rates 7.5% in the United States and 10.8% in Denmark. In the recent 5 years, the trend of survival rates has overall increased by 2%. However, the survival rate of OHCA patients in Asia nowadays is still only 5.4%, remaining relatively low compared with the western countries. Many prehospital factors have proved to be associated with the survival rate of OHCA, including initial cardiac rhythm, bystander CPR, bystander witnessed, location, and EMS system factors. However, whether gender and age are associated with the survival rate of OHCA remains controversial. While there have been Asian studies showing gender disparity in the survival rates of OHCA (women had better outcomes than men), similar studies in the western countries presented totally opposite results.

Aim

This study aims to identify whether gender and age factors affect the survival rate of OHCA.

Method

We analyzed the Utstein-based registry OHCA data from *Pan-Asian Resuscitation Outcomes Study (PAROS)* from 2009 to 2012.

Inclusion criteria: adult, aged ≥ 18 years, non-traumatic, underwent resuscitation attempts.

Exclusion criteria: witnessed by EMT, response time ≥ 60 minutes.

Subgroup analysis: young man (< 65 years old), elder man (≥ 65 years old), young women (< 65 years old), and elder women (≥ 65 years old).

Exposures: response time

Outcome of interest: survival to discharge

Results

Enrolled patients: 50,276 patients

Main findings:

- Increased response time was negatively associated with the survival rate (aOR 0.93, 95% CI 0.91 – 0.94)
- Survival chance decreased by 7% per minute increase of response time.

Subgroup analysis: the young male group had the highest crude survival rate, followed by the young female, elder male, and elder female groups (**Figure 1**). However, after adjusting multiple factors*, young female became the top survival group, followed by the young male, elder male and elder female groups (**Figure 2**).

*witnessed status, shockable rhythm, bystander cardiopulmonary resuscitation, and prehospital advanced life support

Figure 1. Survival Rates and Response Time by Gender and Age

Figure 2. Adjusted Odds Ratio in Logistic Regression

Conclusions

- The chance of OHCA survival to discharge decreased 7% by per minute increase of response time in Asia.
- Although young male after OHCA appeared to have the highest survival rates, young female might have better chances of survival compared to young male if received the same prehospital attention and intervention.

Questions? Scan it to contact the author!
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