



## **Dispatch of fire-fighters and police officers in out-of-hospital cardiac arrest: A nationwide prospective cohort trial using propensity score analysis**

**Background:** Dispatch of basic life support (BLS)-trained first responders equipped with automated external defibrillators (AED) in addition to advanced life support (ALS)-trained emergency medical services (EMS) personnel in out-of-hospital cardiac arrest (OHCA) has in some minor cohort studies been associated with improved survival. The aim of this study was to evaluate the association between BLS + ALS response and survival in OHCA at a national level.

**Methods:** This prospective, cohort study was conducted from January 1<sup>st</sup>, 2012, to December 31<sup>st</sup>, 2014. OHCA victims in nine Swedish counties covered by BLS + ALS response was compared with a propensity-matched contemporary control group of OHCA victims in 12 counties where only EMS were dispatched providing ALS. Primary outcome was survival to 30 days.

**Results:** In total, 8698 OHCA were included of which 2786 in each group were matched. The median time from emergency call to arrival of EMS or first responder was nine minutes in the intervention group vs. ten minutes in the controls ( $p < 0.001$ ). The proportion of patients admitted alive to hospital after resuscitation was 31.4% (875/2786) in the intervention group versus 24.9% (694/2786) in the controls (adjusted OR 1.40, 95% CI 1.24–1.57). Thirty-day survival was 9.5% (266/2786) in the intervention group versus 7.7% (214/2786) in the controls (adjusted OR 1.27, 95% CI 1.05–1.54).

**Conclusions:** In this nationwide interventional trial, using propensity score matching, dispatch of first responders in addition to EMS in OHCA was associated with a moderate but significant increase in 30-day survival.

Ingela Hasselqvist-Ax  
Karolinska Institutet  
Center for Resuscitation Science  
Mail: [ingela.hasselqvist-ax@sll.se](mailto:ingela.hasselqvist-ax@sll.se)  
Homepage: [www.hjartstoppcentrum.se](http://www.hjartstoppcentrum.se)