Abstract: 6031

Out-of-hospital cardiac arrest - incidence of coronary artery disease, comorbidity and survival

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Background:
Data from the European Cardiovascular Disease Statistics from 2012 shows that 20% of all deaths are caused by coronary artery disease with cardiac arrest (CA) as the most common scenario. Historic data have shown that coronary artery disease was present in approximately 70% of unselected out-of-hospital CA (OHCA) patients by angiography. As registry and retrospective data are prone to bias it remains unknown whether an early invasive strategy translates into improved outcome, we present our experience from a large urban region of Denmark.

Purpose:
The aim was to describe a consecutive OHCA-cohort with regards to incidence of coronary artery disease, comorbidity and survival rate.

Methods:
A consecutive unselected cohort of patients with OHCA in the Capital Region of Denmark was included (n=1,003) from 2007 to 2011. After successful resuscitation patients were admitted for post-resuscitation care at 1 of 8 hospitals including coronary angiography and percutaneous coronary interventions (PCI) when indicated.

Results:
Patients were 65 ±15 years old, 71% were male, 52% had shockable primary rhythm, median time to return of spontaneous circulation (ROSC) was 22 minutes (Q1-Q3: 13-37 min), the majority was unconscious at hospital admission (89%), and no previous comorbidity was noted in 52%. The majority of the cohort had OHCA due to a cardiac cause (n=806, 80%). Acute coronary syndrome (ACS) was diagnosed in 39% of the total cohort (n=389), and in 48% of patients with cardiac cause with ST-segment elevation myocardial infarction being more frequent (n=236, 60% of ACS).

30-day mortality was 59% in the total cohort and 46% in patients with ACS (plogrank< 0.001). A favourable neurological outcome (Cerebral Performance Category 1 or 2) was noted in 84% of all patients discharged alive (n=347), and in 85% of patients with ACS (n=178). In the total cohort ACS was independently associated with a lower 30-day mortality rate (hazard ratio (HR) = 0.62, 95% confidence interval (CI) 0.51 – 0.75, p<0.001) after adjustment for age, pre-hospital OHCA circumstances (bystander CPR, public arrest and witnessed arrest), time to ROSC, primary admission to a tertiary heart centre, and degree of comorbidity. In OHCA-patients with ACS only, successful PCI was independently associated with a lower 30-day mortality after adjustment for the mentioned prognostic factors (HR all ACS= 0.46, 95% CI 0.31-0.67, p<0.001, HR STEMI= 0.43, 0.27-0.69, p<0.001, HR NSTEMI= 0.12, 0.03-0.51, p=0.004).

Conclusion:
In an unselected clinical cohort of out-of-hospital cardiac arrest survivors less than half of the patients was diagnosed with acute coronary syndrome. ACS was associated with a better prognosis even after adjustment for prognostic factors. Successful PCI was likewise an independent prognostic factor, however this may be due to selection bias and a direct support of acute angiography in all OHCA-survivors should await the results of randomised clinical trials.
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