Factors of importance for outcome of patients admitted to hospital after out-of-hospital cardiac arrest in Estonia

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Purpose of the study:

To evaluate factors affecting survival to hospital discharge of patients who were resuscitated from bystander-witnessed out-of-hospital cardiac arrest (OHCA) and admitted to hospital alive.

Materials and Methods:

Prospective observational cohort study of out-of-hospital resuscitation attempts in Estonia since 1999 to 2013 was conducted according to the Utstein style.

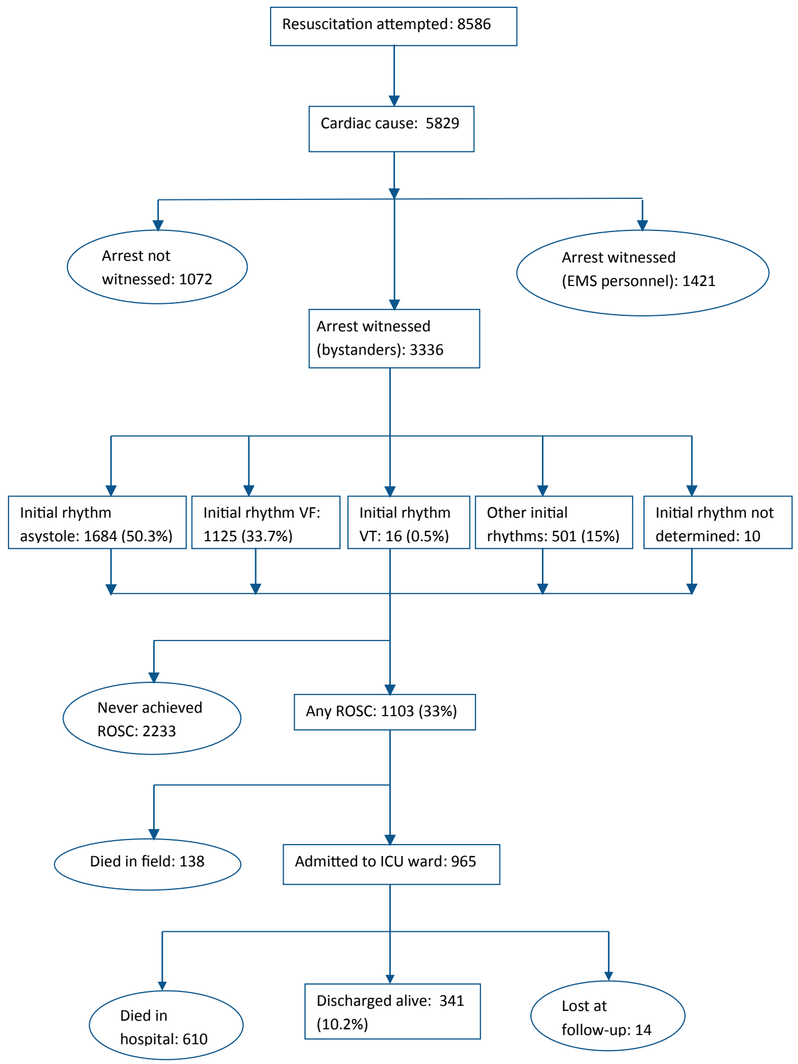
Results:

In Fig. 1, the patient material is presented according to the Utstein model. In all, 38.9% (3336/8586) of the cardiac arrests were of presumed cardiac etiology and bystander-witnessed. Of these 28.9% (965/3336) of patients were admitted to hospital after return of spontaneous circulation (ROSC) and 10.2% (341/3336) were discharge alive in good cerebral performance categories (CPC 1, 2). In group of patients who were admitted to ICU survival rate was 35.9% (341/951). Comparison of differences between survived and non-survived patients of this group is shown in Table 1.

Conclusion:

After hospital admission patients who were resuscitated from bystander-witnessed OHCA had more chance of survival to hospital discharge if they were younger than 60 years old (in men group), had initial rhythm ventricular fibrillation, bystander CPR, shorter response and resuscitation time interval. The role of therapeutic hypothermia was also important.

Fig.1. Out-of-hospital resuscitation attempts in Estonia in 1999-2013
(Utstein template)



VF, ventricular fibrillation; VT, pulseless ventricular tachycardia.

Table1 . Comparison of differences between survived and non-survived patients admitted to ICU after ROSC (bystander-witnessed OHCA)

	SURVIVED TO HOSPITAL DISCHARGE (n=341)	DIED IN HOSPITAL (n=610)	P value
Male *Female*	264 (38.9%) 77 (28.2%)	414 196	<0.01
Men age (mean, SD)	59.6±0.8	63.1±0.6	<0.001
Female age (mean, SD)	65.6±1.8	68.1±0.8	NS
Scene of collapse *Home* *Public place*	 153 (29.8%) 107 (41.6%)	 360 150	 <0.01
Bystander CPR *Yes* *No*	 137 (45.7%) 204 (31.3%)	 163 447	 <0.001
VF/VT *Yes* *No*	 283 (49.8%) 58 (15%)	 285 325	 <0.001
Call-response interval (min) (median, mean, SD)	6 6.4±3.99	7 7.7±5,5	<0.001
Time interval from collapse to ALS intervention (min) (median, mean, SD)	6 6.8±3.7	8 8.6±4.8	<0.001
Resuscitation time (min) (median, mean, SD)	11 15.6±12.3	21 26.4±17.4	<0.001
Physician crew *Nursing crew*	231 110	408 202	NS
Therapeutic hypothermia *Yes* *No*	 85 73	 79 133	 <0.01

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