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## Abstract

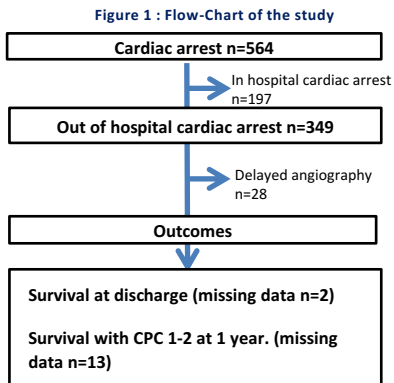
**Background** Myocardial infarction is the main cause of out-of-hospital-cardiac arrest (OHCA). While systematic coronary angiography for a potential percutaneous coronary intervention (PCI) associated to Extra-corporal life support (ECLS) is the standard of care in OHCA, the benefit on survival remains debated.

**Purpose** Our study evaluated the impact of successful PCI and ECLS use on the survival of patients admitted for OHCA.

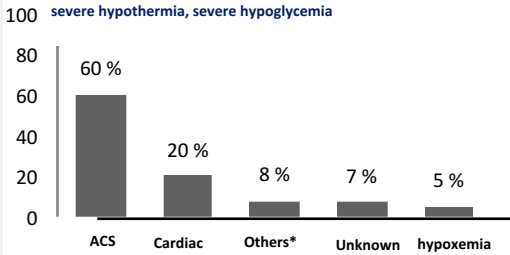
**Methods** In this observational study, we included the patients admitted for an OHCA without obvious extra cardiac cause who underwent a systematic coronary angiography. The impact of successful PCI and use of ECLS after resuscitation were evaluated on in-hospital survival and one-year survival without severe brain injury (cerebral performance category 1-2).

**Results** Of the 321 patients included, 197 (62%) had one or more significant acute coronary lesions whom 93.5% were successfully treated by PCI. ECLS was used in 21% of patients with severe cardiogenic shock (25%) or refractory cardiac arrest (75%). In-hospital survival rate was 35.5% and one-year survival rate without severe brain injury was 29%. At one year, patients with a PCI failure despite of a serious coronary lesion had a poor prognosis compared to patients who underwent a successful PCI (9% vs 40%, HR = 4.9, 95% CI (1.7-14), p < 0.005). Patients with successful PCI and those without coronary lesions had similar survival rate (29% vs 33%, HR = 1.2 p = 0.9). Patients treated by ECLS had a similar survival than patients who did not require any (23% vs 38%, HR=1.42, p=0.15).

**Conclusion** In our study, successful PCI was associated with a similar prognosis than patients without coronary artery disease, whereas PCI failure was associated with a very poor prognosis. ECLS, using has a rescue support for cardiogenic shock was associated with a similar prognosis than patients without needs of it.



**Figure 2 : Causes of the cardiac arrest.**  
Others\*: in same proportion (1.3%) Dyskalemia, aortic dissection, severe hypothermia, severe hypoglycemia



**Table 1 : Flow-Chart of the study**

	Total (n=322)	% ou DS
Age, y	58	14.1
Male	248	77%
HTA	128	39.7%
Dyslipidemia	106	32.9%
Smoking	149	46.3%
Diabetes mellitus	45	13.9%
History of coronary artery disease	65	20.2%
Shockable rhythm	202	62.7%
ECG post-ROSC		
ST elevation	135	41.9%
Others	187	58.1%
Time of no flow (min)	6.5	5
Time of low flow (min)	36.3	38.5
Mechanical ventilation	304	94.4%
Cardiogenic/ Vasoplastic shock	222	68.9%
Therapeutic hypothermia	258	80.1%
ECLS	71	21%
Initial pH	7.2	0.2
Initial blood lactate level (mmol/L)	7.4	5.5

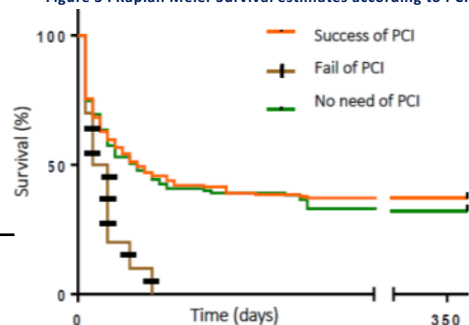
**Table 2 : Angiography coronary results**

	TOTAL (n=322)
Acute coronary occlusion (TIMI 0 or TIMI 1)	147 (45.7%)
Coronary artery stent thrombosis	12 (3.7%)
Significant stenosis >70% as culprit lesions	51 (15%)
Spontaneous coronary spasm	9 (2.8%)
Single-vessel involved	127 (64)
Two-vessel disease	53 (27%)
Three-vessel disease	20 (10%)
Left main coronary involved	19 (9.9%)
Non-significant coronary lesions	186 (33%)

**Table 3 : Multivariable analysis of predictors of death**

	OR	95% IC	p
Ventricular Fib/Tachy	0,11	0,02 - 0,62	0,012
Defibrillation	0,158	0,05 - 0,52	0,002
Non ischemic cardiac cause of OHCA	0,31	0,12 - 0,79	0,015
Time before spontaneous circulation	1,025	1,02 - 1,05	0,3
Age	1,035	1,005 - 1,06	0,02
Initial Blood lactate level	1,176	1,04 - 1,33	0,011
Glasgow (per points below 15)	1,199	1,03 - 1,4	0,022

**Figure 3 : Kaplan Meier Survival estimates according to PCI**



**Figure 4 : Kaplan Meier Survival estimates according to ECLS**

