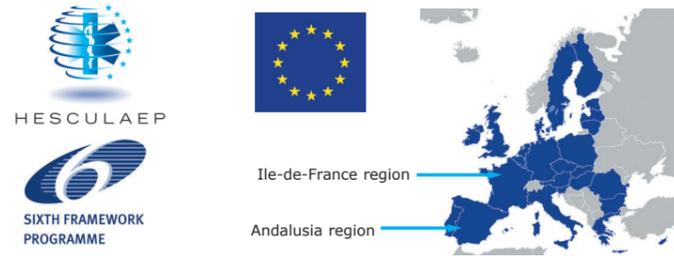


Pre-hospital Care Of Patients With ST-elevation Myocardial Infarction In Two Different European Regions: Data From Two Regional, Pre-hospital Registries, Concerning Myocardial Infarction In Ile-de-France And Andalusia

Sophie Bataille¹, Anna Ozguler², Fernando Rosell Ortiz³, Emilio Perea-Milla⁴, Jose Javier Garcia del Aguila³, Luis Olavarria Govantes³, Yves Lambert⁵, Michel Baer²
 1. Ile-de-France Regional Agency of Hospitalization, Paris, France 2. SAMU 92, APHP, Garches, France; 3. Empresa Pública de Emergencias Sanitarias, Malaga, Spain; 4. Hospital Costa del Sol, Marbella, Spain 5. SAMU 78, Versailles, France



INTRODUCTION

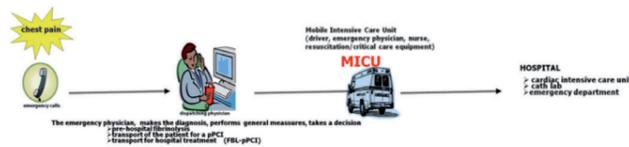
Hesculaep project is a European project (6th Framework Programme). It's main objective is the setting up of a sustainable long-term cooperation between similar research programs in 10 European countries (Czech Republic, France, Iceland, Israel, Italy, the Netherlands, Slovenia, Spain, Sweden and United Kingdom). One of the main results of Hesculaep project is the identification of similar registries, with common goals on Acute Coronary Syndrome (ACS), Cardiac Arrest and trauma:

- The ACS registries concerned 2 regions: Andalusia (Spain) and Ile-de-France area (France), with different population, geographical and health equipment.

- These registries were comparable in EMS organization and had similar inclusion criteria.

Registries of clinical practices are becoming increasingly widespread, producing real world knowledge and could improve patient management.

Organisation of Emergency Medical Services in France and Spain, from chest pain to access to cathlab.



OBJECTIVES

The objective of this study is to compare these 2 registries, taking into account territorial, population and methodological differences.

METHODOLOGY

A common subgroup of patients has been identified in both registries. These were all patients having a typical chest pain, lasting less than 24 hours in 2006. This concerned:

- 1618 patients included for e-MUST registry (France)
- 725 patients included for PEFEX registry (Spain)

Then, all identical variables were compared on aggregated data. The tests used for analyses were: t-tests and chi-square tests.

RESULTS (1)

Comparison of Ile-de-France and Andalusia regions, in terms of number of inhabitants, population density, EMS and cathlab equipments

Provinces	Ile-de-France	Andalusia
Number of inhabitants	11 577 000	7 975 672
Area (km ²)	12 011	87 268
Population density (inhabitants/km ²)	964	91.39
Regions	8	1
EMS	8	1
MICU (sites)	40	25 (+ 5 Helicopters)
Number of Emergency Physicians	600	170
Mean number ACS ST+ with typical chest pain, <24 hours/year	1600	750
Number of cath lab	41	17

These two regions are quite different in terms of population density. Ile-de-France has a higher population density, with more urban areas. The number of cathlabs is also more important in this region. Andalusia is a mix of urban and rural areas, with more people living at a longer distance from medical facilities.

RESULTS (2)

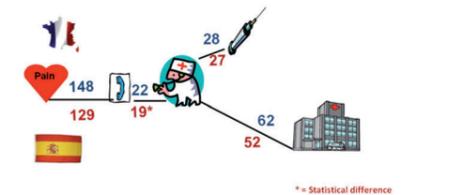
Comparisons of study population and risk factors between the two registries

	e-MUST (n=1618)	PEFEX (n=725)	p
Sex-ratio	77,5	76,4	
Age (mean)	61,1	64	< 10 ⁻³
History of CAD	314 (22%)	172 (25%)	0,09
Family history of CAD	300 (21%)	17 (2%)	< 10 ⁻³
Smokers	767 (53%)	270 (46%)	< 10 ⁻³
Diabetes mellitus	194 (13 %)	190 (28 %)	< 10 ⁻³
Hypertension	553 (38%)	388 (54%)	< 10 ⁻³
Hypercholesterolemia	515 (36%)	248 (33%)	0,15

Patients were more often men (77%) in both registries. They were younger in France (61 years old versus 64), p<10⁻³. Cardio-vascular risk factors were quite different: there were more often smokers and dyslipemia in France, and more often High Blood Pressure and diabetes in Spain.

There were no difference between the 2 registries concerning Killip > 1 : 10% for e-MUST and 11% for PEFEX and location of Myocardial Infarction.

Time distribution from call to arrival to hospital or thrombolysis in the 2 registries



The PEFEX registry described shorter time intervals from onset of pain to call to EMS, from call to EMS and arrival of EMS teams (with a statistical difference), from arrival of EMS teams to arrival to hospital or thrombolysis, compared with e-MUST data.

Comparison of treatment strategies in both registries

Pre-hospital management	e-MUST	PEFEX	p
Pre-hospital thrombolysis	398 (25%)	282 (35%)	<10 ⁻³
Decision of PTCA	1085 (68%)	52 (6%)	
IV nitrates	340 (21%)	642 (89%)	<10 ⁻³
Analgesics	624 (51%)	580 (80%)	<10 ⁻³
Aspirine	1490 (92%)	660 (91%)	ns
Anticoagulants (UFH, LMWH)	1480 (92%)	370 (51%)	<10 ⁻³
Other antithrombotics	676 (36%)	123 (17%)	<10 ⁻³
Beta-blockers	44 (2%)	3 (<1%)	<10 ⁻³

in e-MUST, 93% benefited from repermeabilisation decision by the ALS emergency team, versus 41% in PEFEX. Repermeabilisation consisted in thrombolysis in 27% in e-MUST versus 85% in PEFEX. Apart from Aspirin used in more than 90% of cases in both registries, adjuvant treatment was also quite different: antithrombotic and anticoagulant were less used in PEFEX than in e-MUST (respectively 17% versus 36% and 51% versus 92%). This was the opposite for nitrates and analgesics.

Mortality:
 We can report only preliminary data due to the fact that, at the present time both registries have a lot of missing data for this variable 'work in progress'. In-hospital mortality was respectively
 n= 70 (6.1%) for e-MUST
 n= 26 (6.5%) for PEFEX

CONCLUSION

The populations had quite different characteristics in both registries with older population in Spain and very different risk factors. The treatment strategies differed also between e-MUST and PEFEX. The intervention time was faster in Spain.

The limits of this study were the number of missing data (mainly for mortality) and the differences in methodology for collecting data: PEFEX automatically collects data out of EMS files, although e-MUST collects data from paper forms filled in by Emergency Physicians. Another limit is the comparisons made on aggregated data due to confidentiality procedures.

Register is an essential tool to know and improve clinical practice. These results show different treatment strategies across Europe. This is the first step before more complete analyses through which we expect to report trends on several years. It opens the way to pursue cooperation with other European registries: MINAP (UK), RIKS-HIA (Sweden)

Based on this study and at a further step, it is important to deeply analyse added-information and consequently improve patients' management.