

Prognostic impact of a primary PCI regional network implementation for the treatment of patients with ST-segment elevation myocardial infarction



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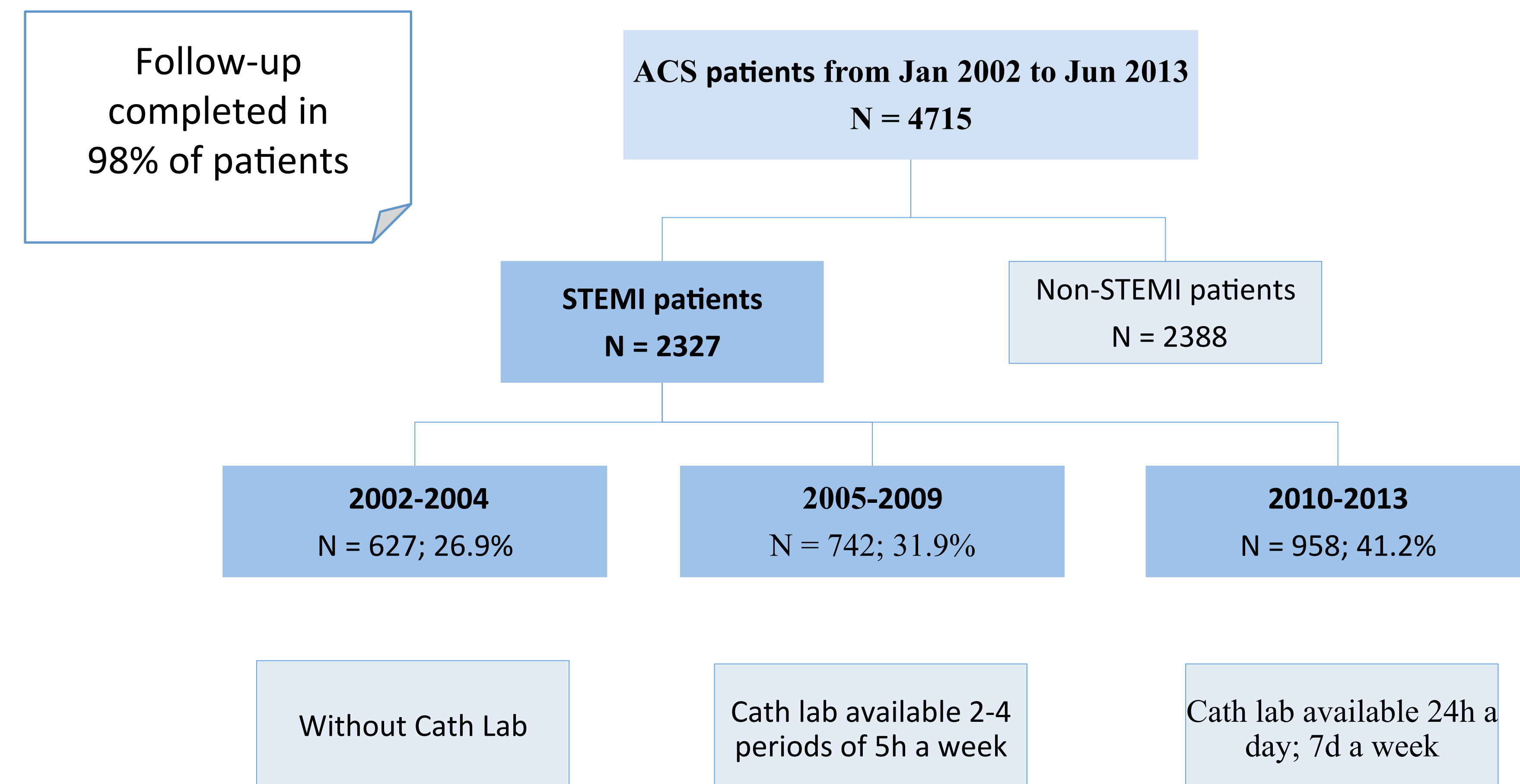
Background

Primary percutaneous coronary intervention (PCI) is superior to fibrinolysis in patients presenting with acute ST-elevation myocardial infarction (STEMI) when it can be expeditiously performed by an experienced team in a hospital with established interventional cardiology programme (24h/7d) and PCI related time delay compared to fibrinolysis is no longer than 90 - 120 minutes.

Purpose

To determine if the availability of a 24h/7d regional interventional cardiology programme is associated with improved prognosis in STEMI patients.

Methods



Primary Endpoint → Occurrence of Death at 6 months

Results

Table I - Baseline patients' characteristics on admission, according to temporal period

	Group 1 (n=627; 26.9%)	Group 2 (n=742; 31.9%)	Group 3 (n=958; 41.2%)	P for trend
Demographic				
Age (years)	63±13	63±14	63±14	NS
Male (%)	77.8	74.5	80.4	0.016
Cardiovascular Risk Factors (%)				
Diabetes	20.1	23.0	22.7	NS
Hypertension	49.6	59.6	58.5	<0.001
Dyslipidemia	37.2	45.3	49.9	<0.001
Active smoker	30.3	29.0	36.7	<0.001
Active or ex-smoker	44	41.6	53.1	<0.001
Previous Cardiovascular History (%)				
Myocardial Infarction	8.6	9.4	7.9	NS
Stroke	6.1	6.6	5.9	NS
Angina	9.9	9.7	9.2	NS
PCI	1.8	3.0	1.1	0.023
CABG	0.3	1.6	4.6	<0.001
Clinical Presentation (%)				
Killip class > 1	23.8	21.2	20.1	NS
Killip class = 4	2.1	2.4	4.1	0.043
Renal Failure	15.6	17.5	23.8	<0.001
Anaemia	14.1	19.2	21.8	0.005

Table II - Treatment and procedures during hospitalization, according to temporal period

	Group 1 (n=627; 26.9%)	Group 2 (n=742; 31.9%)	Group 3 (n=958; 41.2%)	P for trend
In-Hospital medication (%)				
Aspirin	99.8	99.6	99.2	NS
Beta-blockers	78.6	87.6	84.6	<0.001
ACE inhibitors	85.4	88	84.8	NS
Statins	78.8	97.7	98	<0.001
UFH	48	30.5	72.1	<0.001
LMWH	22.2	26.2	14.3	<0.001
Nitrates	66.2	60.9	19.1	<0.001
GP IIb/IIIa inhibitors	3.6	6.2	20.5	<0.001
Procedures (%)				
Thrombolysis	51	44.5	0.8	<0.001
PCI	13.3	69	87.7	<0.001
CABG	6.4	7.1	4.4	0.042

Conclusion

Overall improvement of care and implementation of a 24h/7d primary PCI programme was associated with a progressive reduction of mortality in STEMI patients admitted to our coronary care unit over the past 12 years, despite an increased in risk profile.

The authors have no conflicts of interest to declare

Proportion of mortality events (%)

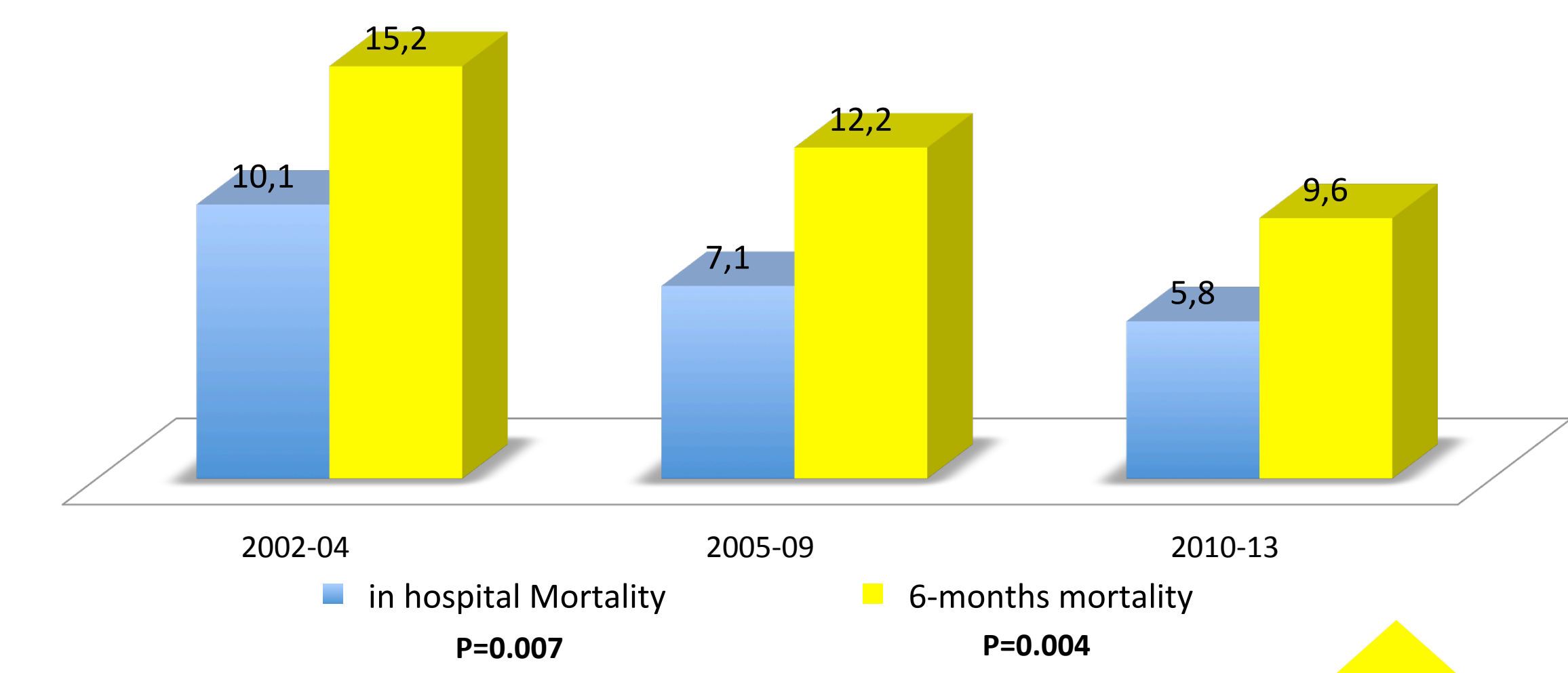


Table III - Independent predictors of 6-month death, by Cox Regression analysis.

Variable	OR	95% CI	p
KK admission > 1	4.22	(3.18-5.61)	<0.001
Hypertension	1.09	(0.82-1.44)	0.575
Diabetes	0.94	(0.70-1.25)	0.655
eGFR < 60 ml/min	4.44	(3.32-5.95)	<0.001
Anaemia	1.60	(1.21-2.12)	0.001
Temporal Period			
G2 (2005-08) vs G1 (2002-04)	0.90	(0.63-1.27)	0.53
G3 (2009-13) vs G1 (2002-04)	0.64	(0.45-0.91)	0.012

G3 vs G1
↓36%

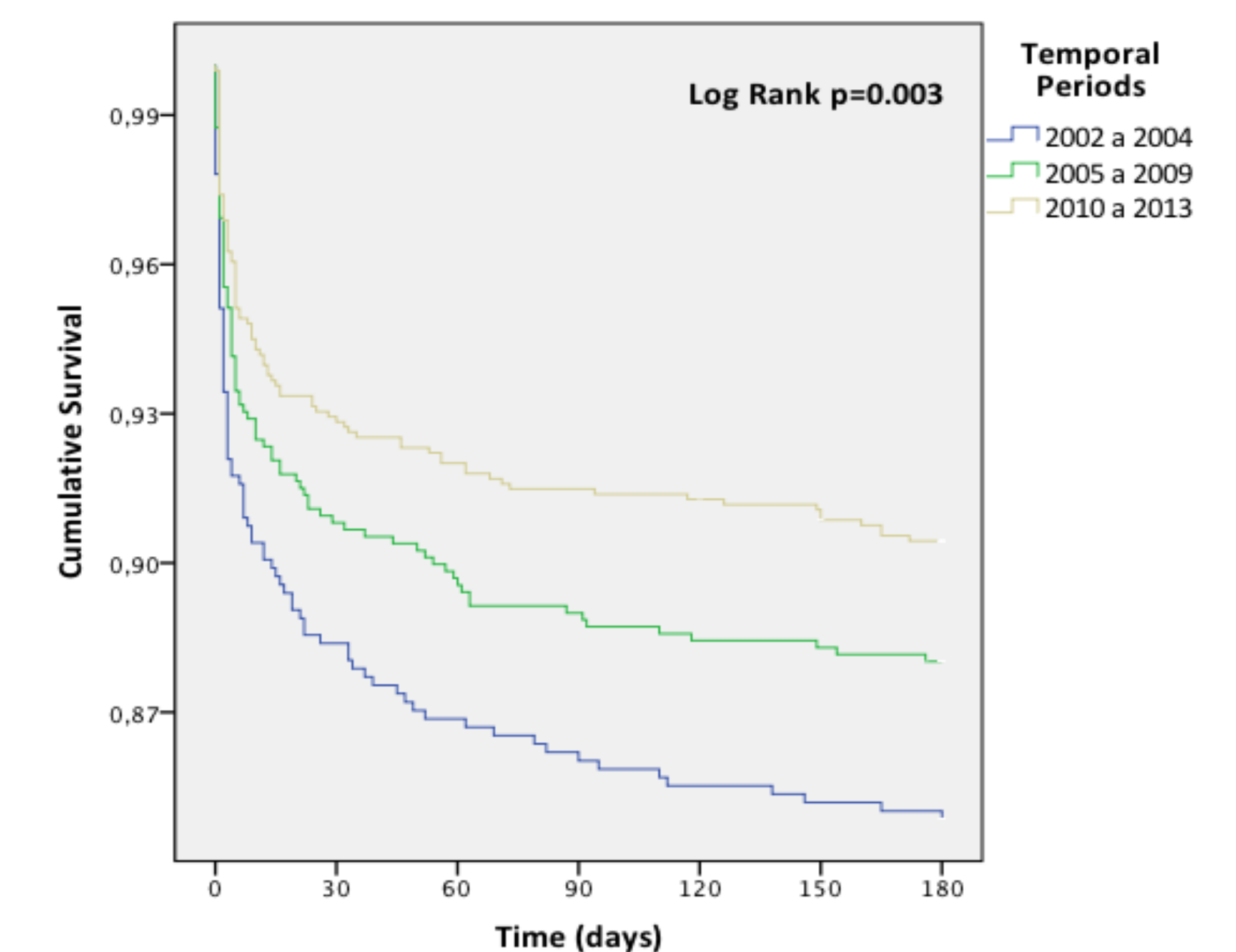


Fig 2 - Survival analysis by Kaplan-Meier survival curves