Grupos de Apoyo al Manejo de la Endocarditis Infecciosa en España

Proyecto: Influencia de la cirugía precoz en el pronóstico de la endocarditis infecciosa izquierda sobre válvulas nativas

Juan Gálvez Acebal
Hospital U V Macarena, Sevilla
Grupo GAMES

Introduction

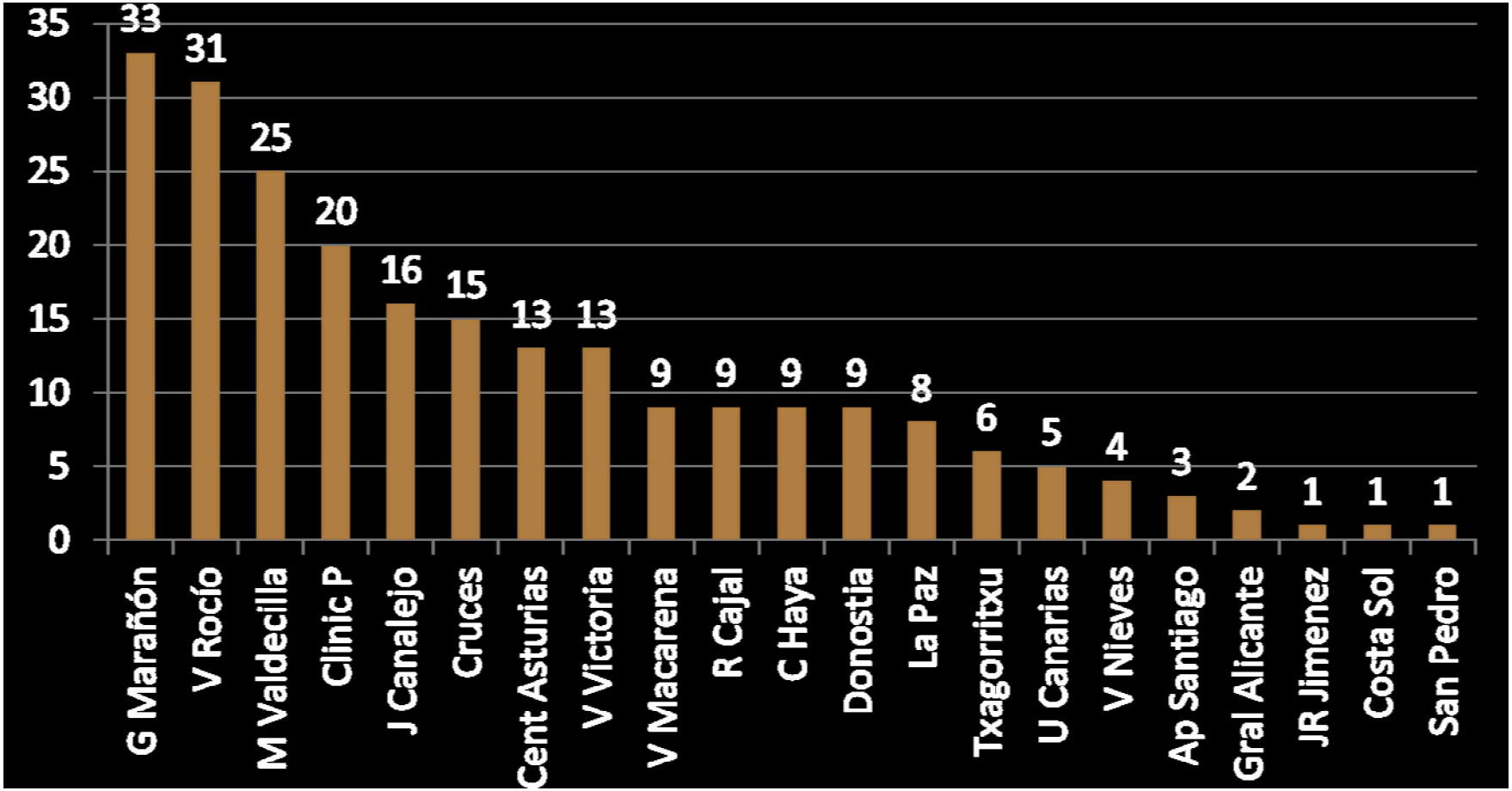
- Surgical treatment has contributed significantly to improving the prognosis of patients with infective endocarditis.
- Currently between 30 and 60% of patients are operated during the initial phase of the disease.
- No consensus exist on the optimal timing of surgical treatment.
- Early surgery can improve prognosis, especially in cases complicated by heart failure and perivalvular extension. Best control of focus and prevention of embolism.
- However may lead to greater number of recurrences and/or reoperation.

- **Objective**: The aim of this study is to analyze the impact of the timing of cardiac surgery in prognosis of patients with left-sided native endocarditis.

Methods

- **Design**: Prospective cohort study
- **Setting**: 21 Spanish hospitals
- **Period**: January 2008 to December 2010
- **Population**:
  - Consecutive cases of IE with definite and possible diagnosis according modified Duke criteria .Adult > 18 years, native mitral and/or aortic valve affectation.
  - Prosthetic and intracardiac devices related and right sided endocarditis were excluded.
- **Endpoints**:
  - Main outcome was in-hospital mortality.
  - Secondary outcomes were: recurrences, reoperations and late mortality
    - Recurrences: New episode of IE caused by same microorganism, within 3 moths after the end of therapy.
    - Combined outcome: recurrences, mortality and reoperation until 12 moths after end of treatment
- **Definitions**:
  - Early surgical treatment: surgery performed within 7 days of initial admissions.
  - Late surgery: surgery performed after 7 days of initial admissions.

Partipating hospitals

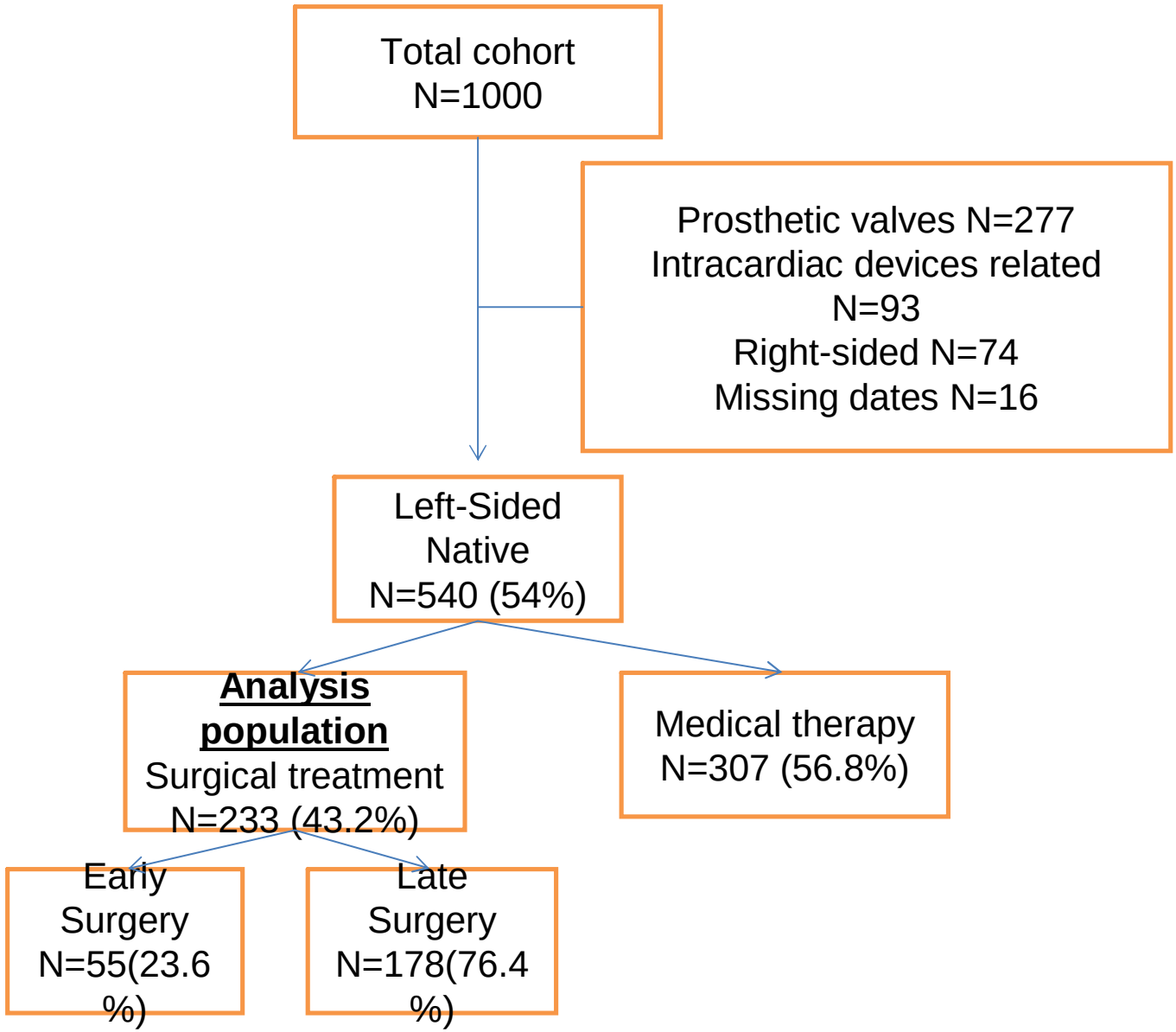


Methods: Statistical analysis

- Differences between the two groups was calculated by means of the χ 2 test or Fisher's test for qualitative variables and t-student test for quantitative variables.
- Factors associated with mortality was analyzed using logistic regression and propensity score matching.
- Survival was performed by Kaplan-Meier analysis. Data analysis was performed with SPSS software (v 18.0; SPSS, INC, Chicago, IL).

Results

- The GAMES Cohort enrolled 1000 cases of infective endocarditis, of which 540 (54%) correspond to left-side native valve. 233 (43.2%) patients were operated and 307 (56.8%) received medical treatment.
- One hundred and eight patients failed surgical intervention for high-risk surgical or critical clinical situation.
- The 233 patients operated during the active phase formed our study population, 55 (23.6%) patients in early group and 178 (76.3%) in late group.
- The 90.5% of the patients had a definitive diagnosis according to the modified criteria of Duke


Total cohort
N=1000
Prosthetic valves N=277
Intracardiac devices related
N=93
Right-sided N=74
Missing dates N=16
Left-Sided
Native
N=540 (54%)
Analysis
population
Surgical treatment
N=233 (43.2%)
Medical therapy
N=307 (56.8%)
Early
Surgery
N=55(23.6
%)
Late
Surgery
N=178(76.4
%)

Baseline characteristics of patients

Variable	Early surgery N=55	Late surgery N=178	P value
Age (mean, IQR) days	55 (44-71)	64.4 (16.1)	0.180
Male gender	44(80%)	137(77%)	0.637
Transferred	19(34.5%)	67(37.6)	0.394
Charlson index (mean, IQR)	**1(0-2)**	2(0-3)	0.042
S viridans group etiology	6(10.9%)	19(10.7%)	0.961
S aureus etiology	12(22.2%)	32(18%)	0.497
Enterococcus sp etiology	5 (9.1%)	24(13.5%)	0.388
Streptococcus agalactiae etiology	**4(7.3%)**	3(1.7%)	0.034
III-IV Class (NYHA) Heart failure	30(54.5%)	96(53.9%)	0.936
Severe aortic regurgitation	32(58.2%)	81(45.7%)	0.100
Severe mitral regurgitation	21(38.2%)	56(31.4%)	0.328
CNS event	8(14.5%)	33 (18.6%)	0.456
Perivalvular extension	**22(58.2%)**	35(19.6%)	0.001
Severe sepsis	15(27.8%)	29(16.7%)	0.070

Operative data

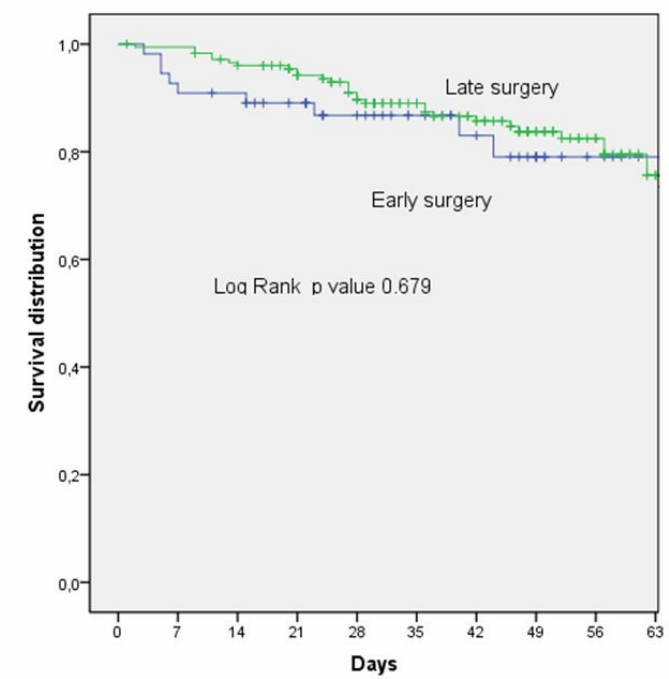
	Early surgery	Late surgery N=178	P value
Operative timing (median,± DS),	3.2±4.6	23.1±19.9	<0.01
Indication			
Severe heart failure	35(63.2%)	102(57.6%)	0.369
Severe valve regurgitation	24(45.6%)	89(50.3%)	0.453
Perivalvular complications	**19(35.1%)**	20(11.2%)	<0.001
Virulent microorganism	**14(24.6%)**	27(6.5%)	<0.001
Embolism	4(7.4%)	15(8.6%)	0.786
Aditive EUROscore	9.6(±4.1)	9.2(±6.8)	0.682
Logistic EUROscore (%)	**25.8 (±21.8**)	18.7(±19)	0.04
Surgical procedure			
Valve repair	6 (11.1%)	21 (11.8%)	0.859
Valve replacement	49(96.5%)	154(87%)	0.646
Elective	12(23.1%)	132(78.1%)	<0.001
Urgent surgery	**30 (68.4%)**	33(19.5%)	
Emergency	**10(19.2%)**	4(2.4%)	
Positive valve culture	**23(42.9%)**	32(18%)	<0.001

Outcome

Variable	Early surgery	Late Surgery	P value
In-hospital mortality (N=233)	9(16.4%)	36 (20.2%)	0.526
Combined 12 months	15(27.3%)	45(25.3%)	0.768
Late mortality	2(0.8%)	1(0.6%)	0.968
Reintervention	3(6.4)	6(3.8)	0.436
Recurrences	2(4.3%)	2(1.4%)	0.421

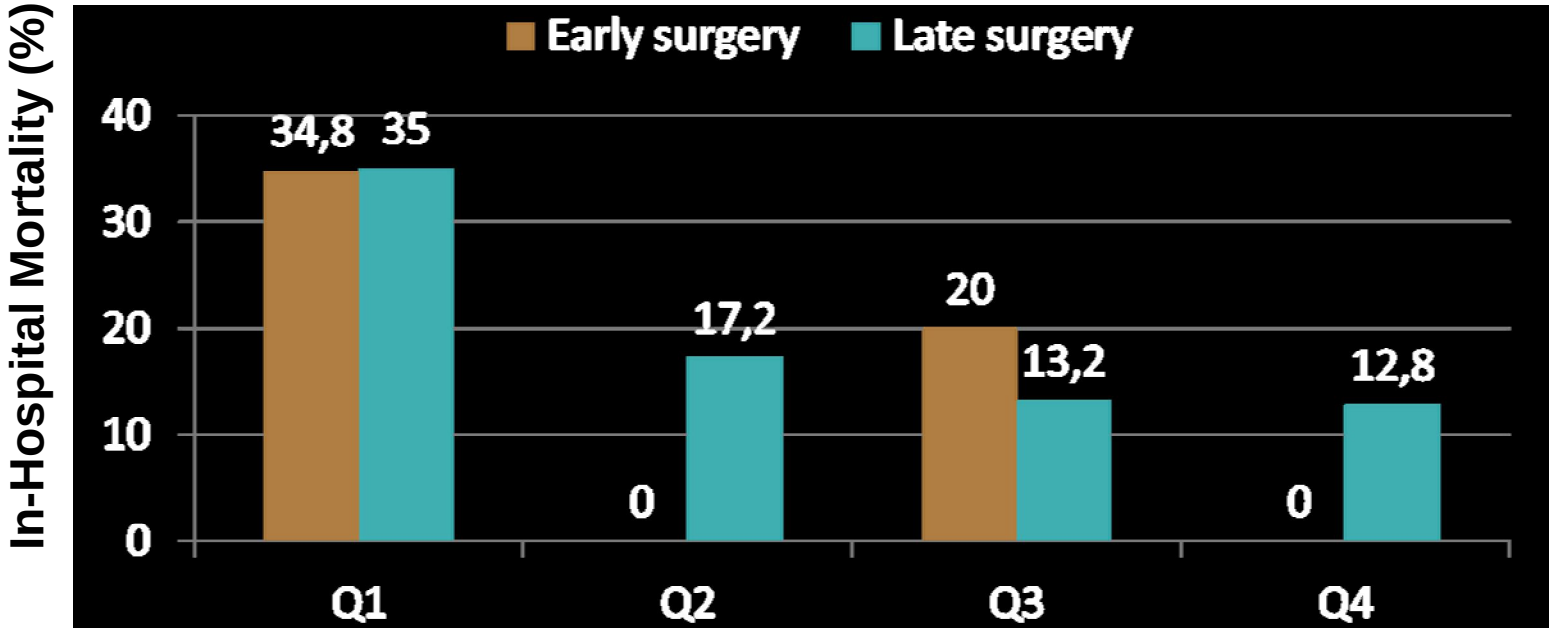
Multivariate analysis of factors associated with in-hospital mortality

Variable	OR	IC95%	p
Complicacion SNC	3,11	1,54-6,30	0,002
Renal failure	2,81	1,27-6,18	0,01
Non elective surgery	2,78	1,38-5,57	0,004
EuroScore	1,03	1,00-1,06	0,024



Kaplan Meier curve for in-hospital mortality

In-hospital mortality in relation with timing of surgical treatment by propensity score quartile

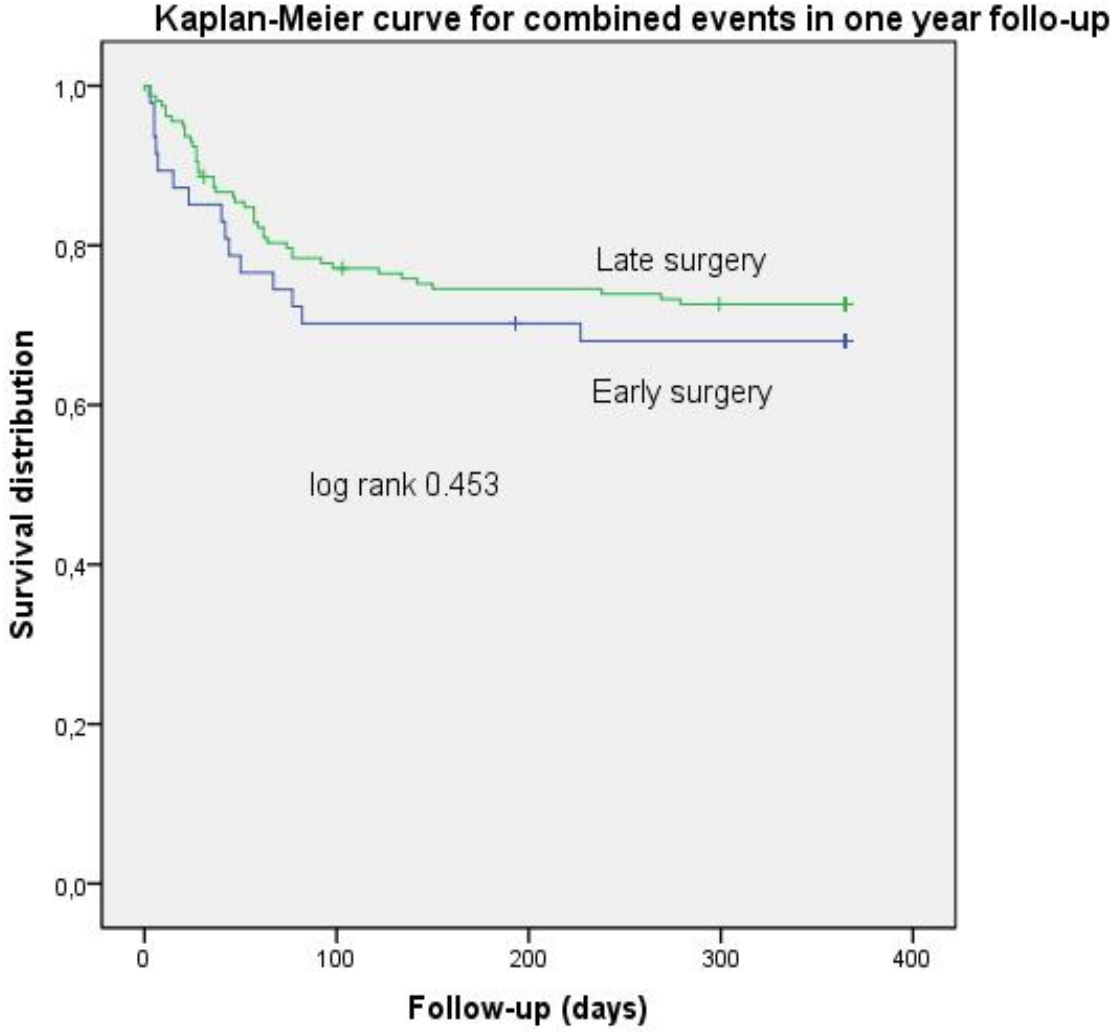


Patients at risk	23	20	13	29	5	37	3	39

Propensity Score Quartile

Multivariable analysis (Cox regression) of factors associated with any event on one year follow up.

Variable	HR	95% CI	P value
Non elective surgery	3.03	1.46-6.28	0.003
CNS event	3.01	1.49-6.08	0.002
Acute renal failure	2.32	1.08-5.01	0.031
Severe heart failure	2.88	1.30-6.36	0.009
Female gender	2.23	1.12-4.41	0.021


Kaplan-Meier curve for combined events in one year follo-up
Survival distribution
1,0
0,8
0,6
0,4
0,2
0,0
Late surgery
Early surgery
log rank 0.453
0
100
200
300
400
Follow-up (days)

Conclusions

- Early surgery did not increase in-hospital mortality in comparison with late surgery performed during hospital admission.
- There was a nonsignificant increase of recurrences and reoperations in patients undergoing early surgery treatment.