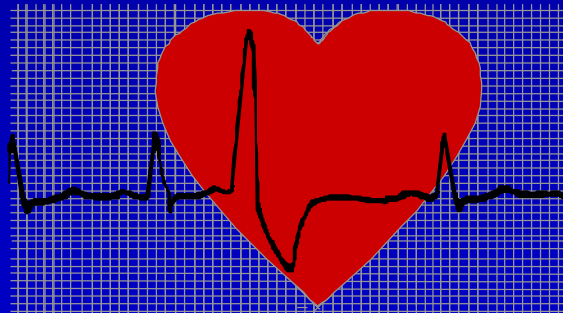


Primary PCI compared to early thrombolysis in patients with acute myocardial infarction:
Results of the Berlin Myocardial Infarction Registry from 1999 and 2000

B. Maier, R. Matteucci Gothe,
A. Mohadjer, S. Rux for the Berlin
Myocardial Infarction Registry in Berlin



Berliner Herzinfarktregister e.V.

Technische Universität Berlin
Institut für Gesundheitswissenschaften

Supported by

The Berlin Myocardial Infarction Registry is supported by:

- Berliner Herzinfarktregister e.V. (registered association)
- Technical University Berlin
- Senatsverwaltung für Gesundheit, Soziales und Verbraucherschutz (Health Administration of Berlin)
- Ärztekammer Berlin (Physicians' Council of Berlin)
- Boehringer Ingelheim
- MSD

Participating hospitals

25 participating hospitals in Berlin

Vivantes Auguste-Viktoria Klinikum, Bundeswehrkrankenhaus, Caritas-Klinik Pankow Ber. Maria Heimsuchung, Charité- Campus Buch (Franz-Vollhard Klinik), Charité Campus Mitte, Dominikus Krankenhaus, DRK-Klinik Mark Brandenburg, DRK-Klinikum Westend, Elisabeth-Krankenhaus, Ev. Waldkrankenhaus, Gemeinschaftskrankenhaus Havelhöhe, Vivantes Humboldt-Klinikum, Jüdisches Krankenhaus, Vivantes Klinikum am Urban, Krankenhaus Hedwigshöhe, Vivantes Klinikum Hellersdorf, Vivantes Klinikum im Friedrichshain, Krankenhaus Moabit, Martin-Luther-Krankenhaus, Oskar-Ziethen Krankenhaus, Parkklinik Weißensee, St. Marien Krankenhaus, St. Gertrauden-Krankenhaus, Unfallkrankenhaus Berlin, Vivantes Wenkebach Klinikum



Aim of the study

- Description of the day to day treatment of patients with AMI in Berlin with its many high volume PCI centers and a centrally organized emergency system attended to by qualified physicians
- Comparison of in-hospital mortality of patients with AMI treated with primary thrombolysis and primary PCI
- Comparison of the results of the Berlin Myocardial Infarction Registry with other registries

Methods used

Prospective cohort study

Criteria for inclusion of patients

- arrival in the hospital within 48h after onset of AMI
- WHO-definition of AMI

Collection of data and monitoring

- 4-page questionnaire with part 1: on acute care (<48h), part 2: on postacute care (>48h)
- completeness of data collected monitored through visits by monitors



Study population

- Data of 3436 patients collected in 1999/2000
- The following cases were not included in the analysis:
 - cases with time since onset of symptoms to hospital >48hours
 - cases with missing data on in-hospital mortality or on reperfusion therapy
 - cases not eligible for thrombolysis (contraindications)
 - cases with a non-cardiac cause of death
- **New study population N=2491 patients
(Basis for the study to be presented)**

Distribution of patients within the study population

Study population: N=2491

with reperfusion therapy
N=1501
(60% of study population)

without reperfusion therapy
N=990
(40% of study population)

primary thrombolysis
N=862
(57% of pts. with reperfusion)

primary PCI
N=639
(43% of pts. without reperfusion)



Characteristics of patients with reperfusion (I)

Parameters	all N=2491	with Rep. N=1501	without Rep. N=990	p (<0.05)
Age in years (mean \pm SD)	66 \pm 14	62 \pm 13	71 \pm 13	*
Females (%)	36	29	47	*
Risk factors				
Hypertonus (%)	60	56	66	*
Hypercholesterinaemia (%)	40	46	31	*
Smoking (%)	37	46	25	*
Diabetes mellitus (%)	28	22	34	*
Medical history				
CHF/prior MI (%)	24	18	32	*



Characteristics of patients with reperfusion (II)

Parameters	all N=2491	with Rep. N=1501	without Rep. N=990	p (<0.05)
Clinical factors on admission				
Card.shock/heart failure (%)	7	8	6	NS
Pulmonary oedema (%)	22	13	34	*
Diagnostic first ECG(%)	82	92	65	*
Anterior MI (%)	46	45	48	NS
Time AMI to hospital<3h (%)	62	67	47	*
E&R physician treatment (%)	47	56	35	*
Capacity to perform PCI (%)	68	79	46	*

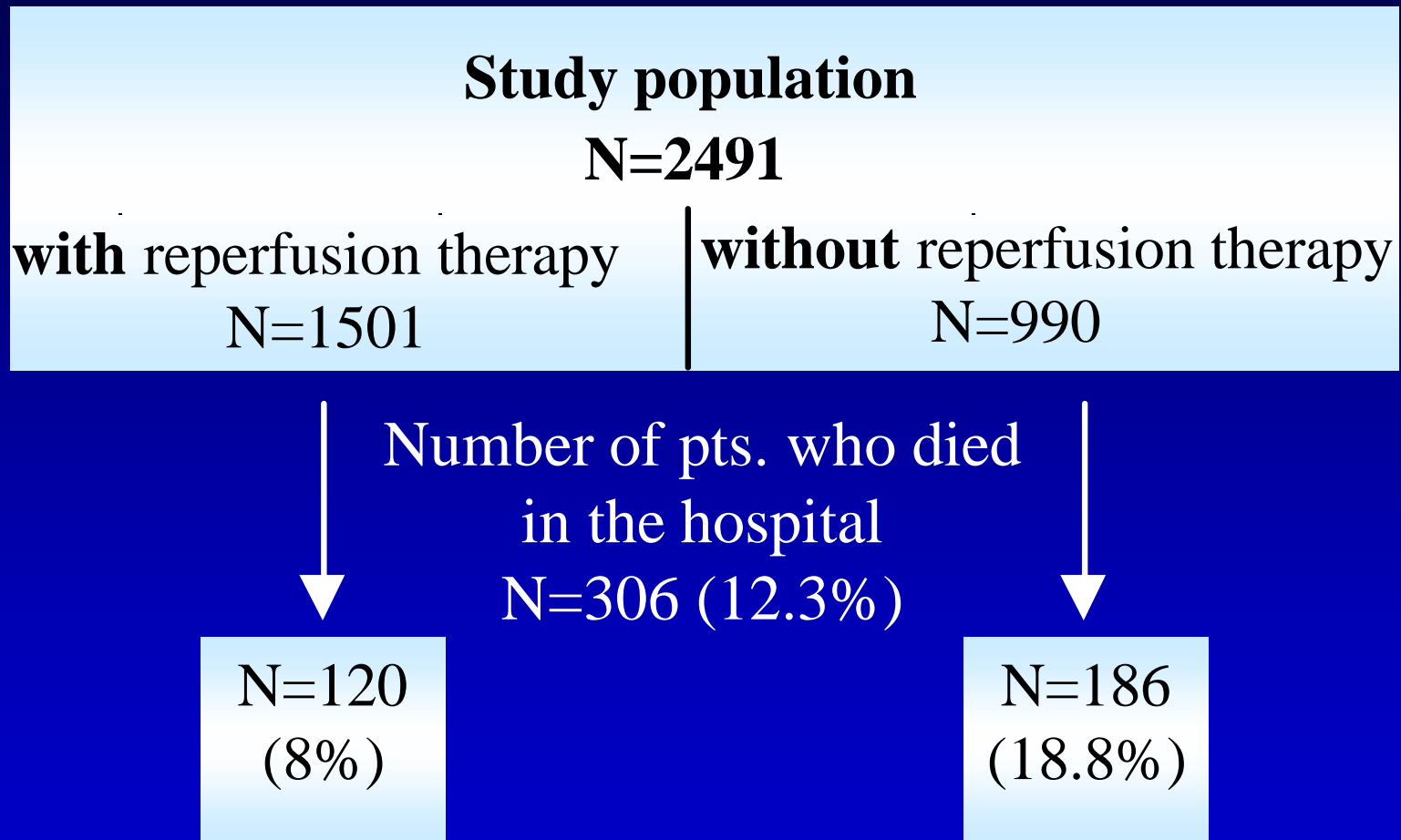


Characteristics of patients treated with primary thrombolysis and with primary PCI

Parameters	primary lysis N=992	primary PCI N=749	p (<0.05)
Age in years (mean \pm SD)	62 \pm 13	62 \pm 13	NS
Females (%)	31	27	NS
Risk factors			
Diabetes mellitus (%)	21	25	NS
Medical history			
CHF/prior MI (%)	18	17	NS
Clinical factors on admission			
Cardiog. shock/heart failure (%)	8	8	NS
Pulmonary oedema (%)	14	12	NS
Diagnostic first ECG (%)	95	86	*
Anterior MI (%)	44	44	NS
Time AMI to hospital $<3h$ (%)	74	55	*
E&R treatm. by physician (%)	54	58	NS
Capacity to perform PCI (%)	68	95	*

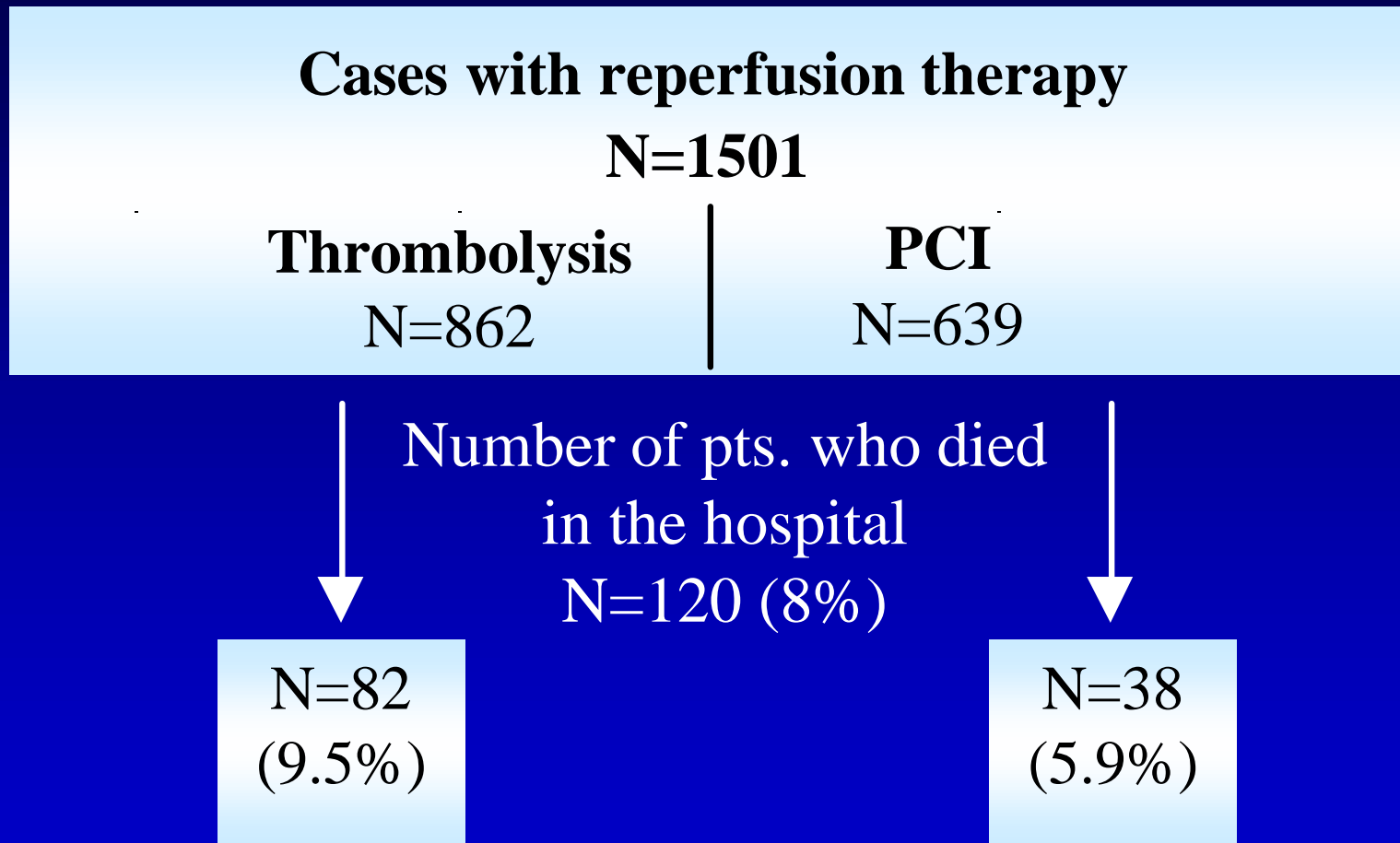


In-hospital mortality of patients treated with and without reperfusion therapy



* ($p < 0.05$)

In-hospital mortality of patients treated with primary thrombolysis or primary PCI



* ($p < 0.05$)

Results of a multivariate logistic regression analysis: Influence of different parameters on in-hospital mortality of patients treated with reperfusion therapy

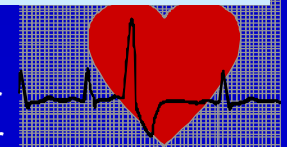
Parameters	with reperfusion N=1501 Odds Ratio with (95% KI)	
Age in years	1.05	(1.03 - 1.07)
Females	2.01	(1.21 - 3.33)
Risk factors		
Diabetes mellitus	1.89	(1.14 - 3.13)
Medical history		
CHF/prior MI	1.99	(1.13 - 3.33)
Clinical factors on admission		
Cardiog. shock/heart failure	22.66	(12.29 - 41.78)
Pulmonary oedema	2.54	(1.41 - 4.58)
Anterior MI	3.01	(1.86 - 5.06)
PCI versus Thrombolysis	0.72	(0.43 - 1.19)



Comparison of different Registries

Registry	N	year	in-hospital mortality for Lysis	in-hospital mortality for PCI	OR	Literatur
NRMI	62299	94/99	5.4** (-6.2)*	3.4** (-5.9)*	0.6** (-1.0)*	JAMA 284 (2000)
MITI	3145	88/94	5.6	5.5	1.0	NEJM 335 (1996)
FRANK	721	95	7.6	9.2	2.9 [1.3-6.3]	Circul 99 (1999)
MIR MITRA	9906	94/98	11.3	6.4	0.6 [0.4-0.8]	JACC 73 (2001)
BHIR	1251	99/00	9.5	5.9	0.8 [0.5-1.3]	-

** high volume * low volume



Summary

- After controlling for confounding parameters the difference in in-hospital mortality between patients treated with primary PCI and those treated with primary thrombolysis was not statistically significant.
- Treating as many patients as possible with the best reperfusion strategy available remains the most important message on this subject.

