

EFFECTS OF ANTIHYPERTENSIVE, HYPOLIPIDEMIC AND REPERFUSION THERAPY ON IN-HOSPITAL MORTALITY IN PREDOMINANTLY HYPERTENSIVE PATIENTS WITH THE FIRST MYOCARDIAL INFARCTION (FMI)



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Aim

The aim was to evaluate effects of the therapy initiated at the day of admission on in-hospital mortality (HM) in patients with FMI - 5-year pilot registry (2003-2007) of six Czech small district hospitals referring patients for percutaneous coronary intervention (PCI) to larger cathlab centers.

Methods and Results

The sample consisted of 2108 eligible patients, 56.2 % men and 43.8 % women, aged 65.3 and 73.9 years, respectively. Their risk factors (RF) were (in %): hypertension (EH: 71.5), dyslipidemia (DLP: 44.9), diabetes (36.2) and smoking (27.2). There were 35.8 % STEMI and HM was 8.8 % (Table 1). The previous therapy consisted of aspirin (ASA) in 28.7 %, β -blockers (BB) 32.1 %, ACEI/ARB 38.0 % and statins in 13.9 % of patients (Fig. 3).

The odds of death (OD) increased with each year of age (1.1 in odds ratio OR), influence of gender on death was not proven (Fig.1). Smoking was not evaluated as it was strongly negatively correlated with age. Smokers, however were about 13 years younger (Table 2). OD were associated especially with presence of heart failure (HF, OR=3.5), DM (OR=1.5) and STEMI compared to NSTEMI (OR=4.1). The reperfusion therapy for STEMI (primary PCI) decreased OD to the level of NSTEMI. PCI was performed nearly exclusively in STEMI (Fig. 4). Contrary to DM, the partially treated EH and DLP significantly reduced OD (both OR=0.6). Aspirin (OR=0.5), β -blockers (OR=0.6) and statins (OR=0.4) reduced OD. ACEI/ARB did not change OD (OR=1.0) but reduced them significantly when used in HF (OR=0.4). OD decreased with increasing number of recommended drugs 1: OR=0.55, 2: OR=0.34, 3: OR=0.15 and 4 drugs: OR=0.10 (Fig. 2). The most frequent drug in monotherapy was ASA (23.8 %) and drug combinations ASA + BB (10.3 %), ASA + BB + statin (12.5 %) and ASA + BB + statin + ACEI/ARB in 19.3 %. Pharmacotherapy at discharge is shown in Table 3.

The paradoxical OR decrease in patients with partially treated EH and DLP could be explained both by the differences between normal and goal values and by the benefits of appropriate drugs beyond BP and cholesterol reducing effect, respectively. The OR decrease in treated DLP was also seen in the OPERA registry, whereas untreated DLP increased OR.

Conclusions

The therapy for both dyslipidemia and hypertension reduced OD below the risk level of normolipidemic and normotensive patients with FMI. The loss of RF significance could happen when a given therapy during hospitalization overwhelms its significance. The simultaneous use of aspirin, statin, β -blocker and ACEI/ARB reduced the odds of death in FMI to one tenth.

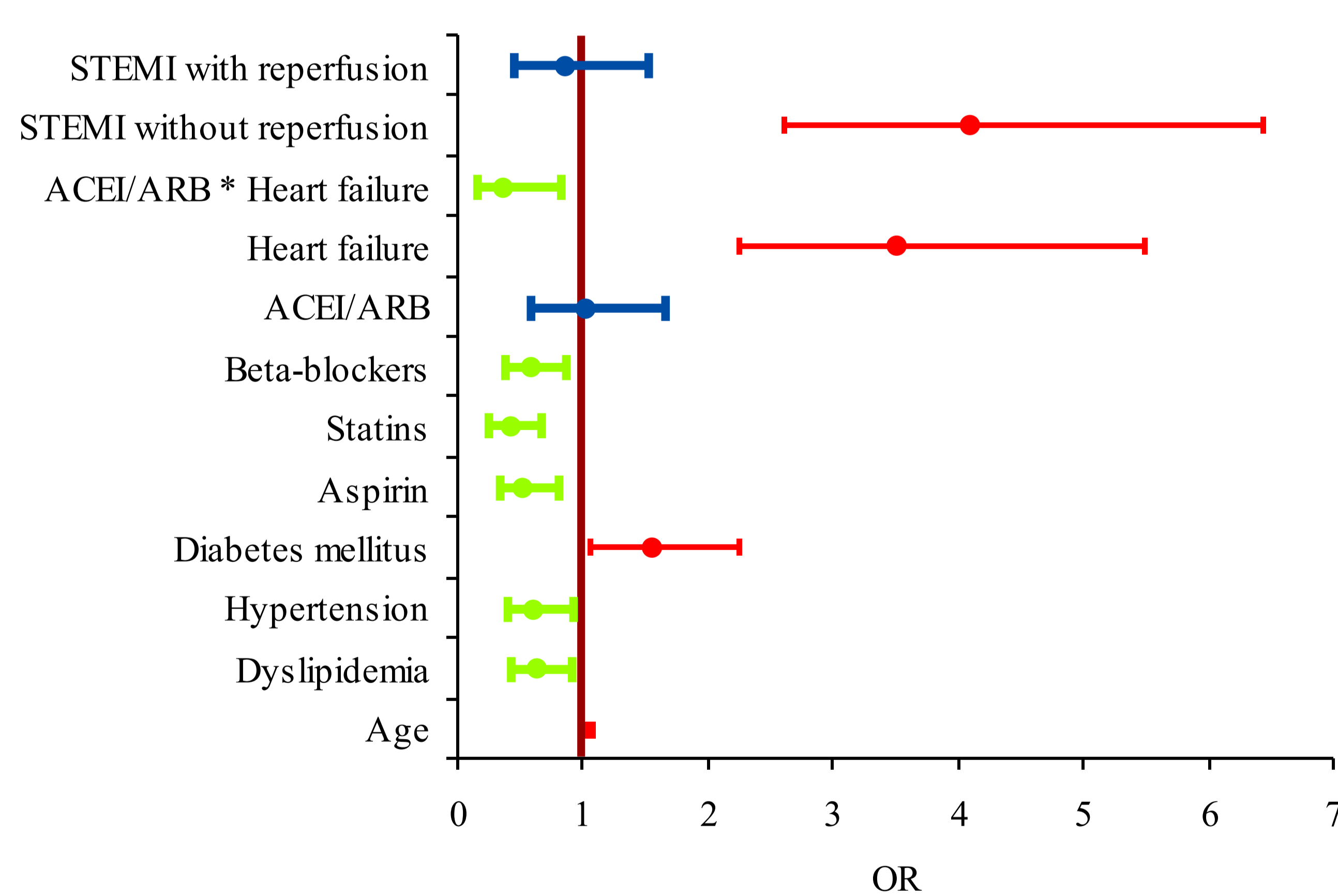


Figure 1. Odds ratio (OR, 95% CI) of in-hospital mortality

Legend: Factors decreasing odds significantly (green), Not significant Factors (blue), Factors increasing odds significantly (red).

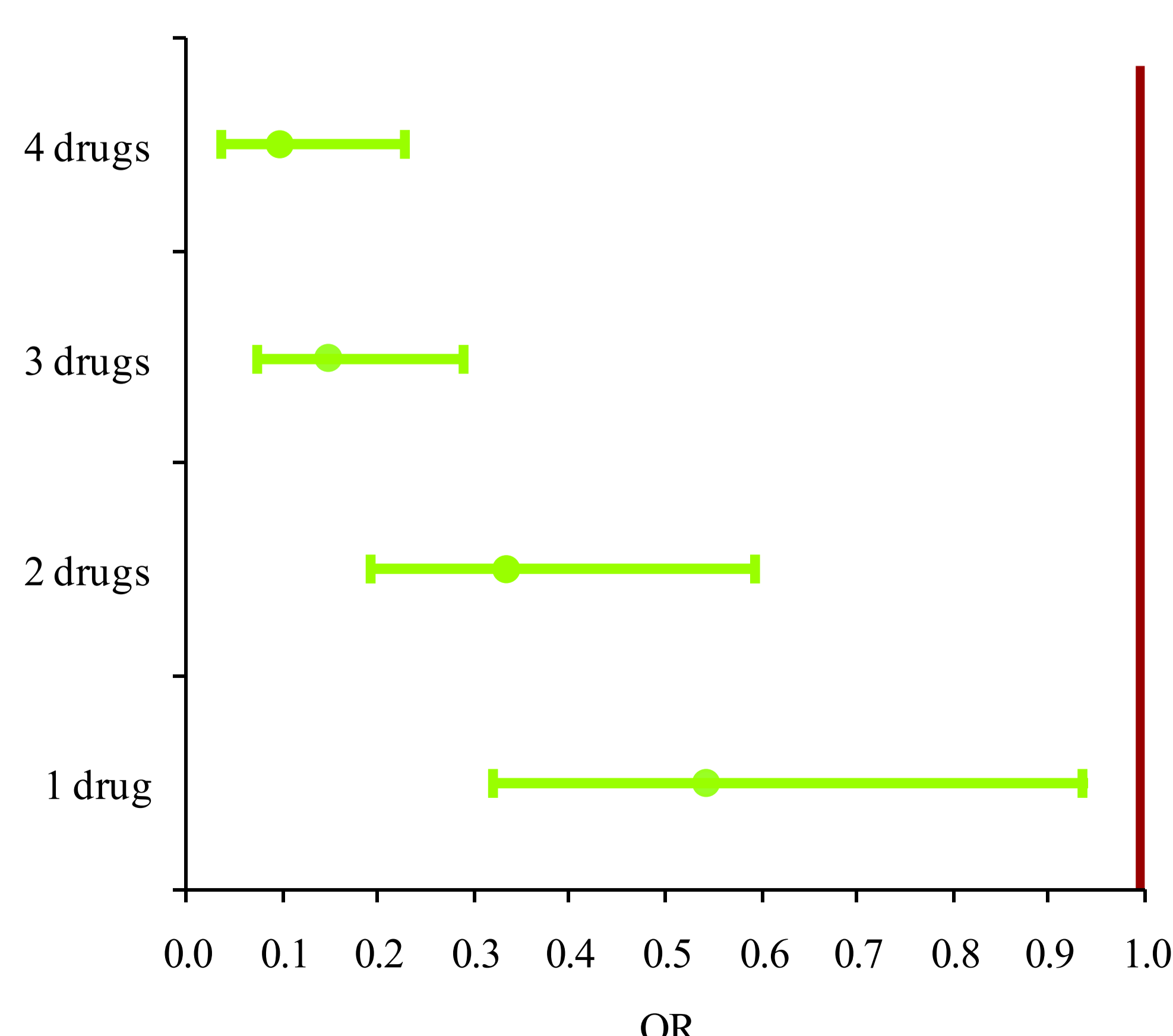


Figure 2. Odds ratio (OR, 95% CI) of in-hospital mortality in relation to number of drugs

Table 1. Sample characteristics

Characteristics	Men	Women	p-value*	Total	
	%	%		%	n
Smoking	39.5	11.3	<0.001	27.2	2009
Diabetes mellitus	29.7	44.4	<0.001	36.2	2042
Dyslipidemia	44.0	45.9	0.006	44.9	1999
Hypertension	63.9	81.1	<0.001	71.5	2059
Heart failure	15.3	22.4	n.s.	18.4	2049
STEMI	40.2	30.1	n.s.	35.8	2093
In-hospital mortality	7.5	10.4	n.s.	8.8	2062

* p-value age-adjusted

Table 2: Age (years, mean \pm standard deviation)

Risk factors	Men			Women		
	Without	With	p-value	Without	With	p-value
Smoking	69.3 \pm 11.5	58.4 \pm 10.8	<0.001	75.1 \pm 9.5	62.0 \pm 10.1	<0.001
Diabetes mellitus	63.9 \pm 12.8	68.7 \pm 10.8	<0.001	72.6 \pm 11.5	75.3 \pm 8.7	<0.001
Dyslipidemia	66.3 \pm 12.9	63.9 \pm 11.7	0.001	75.4 \pm 10.8	71.8 \pm 9.7	<0.001
Hypertension	62.1 \pm 13.6	67.0 \pm 11.4	<0.001	69.7 \pm 12.8	74.8 \pm 9.5	<0.001

Previous/in-hospital pharmacotherapy: ■ No/No ■ Yes/No ■ No/Yes □ Yes/Yes

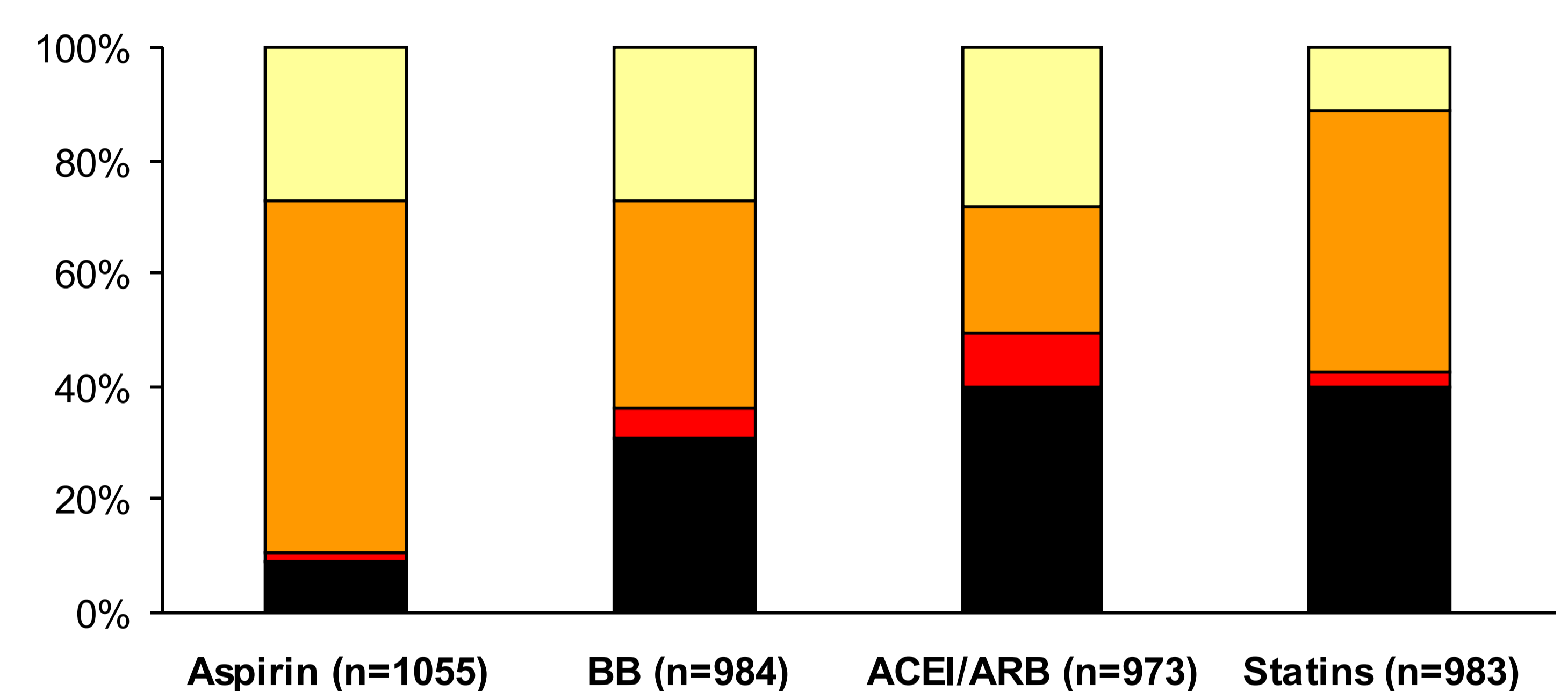


Figure 3. Pharmacotherapy 2005-2007

Table 3. Pharmacotherapy at discharge

Pharmacotherapy	2003 (n=330) %	2007 (n=303) %
Aspirin	74.5	91.4
Ticlopidin	10.3	7.6
Clopidogrel	26.4	63.4
Beta-blockers	62.7	86.1
ACEI/ARB	54.8	77.2
Statins	54.5	79.5

* Clopidogrel in 2004 (n=608)

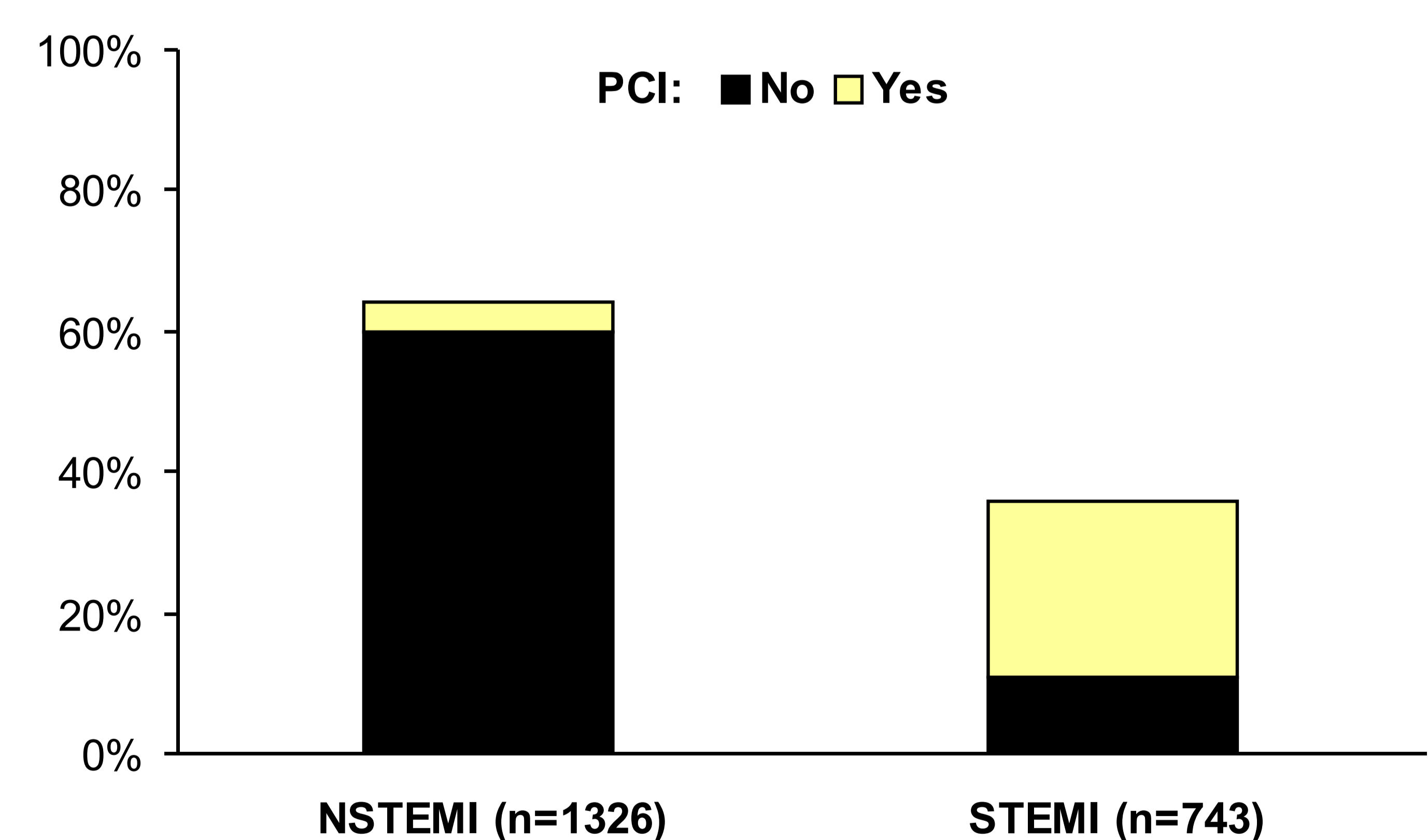


Figure 4. PCI in NSTEMI and STEMI 2003-2007

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