PCI indication

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PCI vs Medical Tx

- STEMI
- NSTE Acute Coronary Syndrome
- Stable CAD

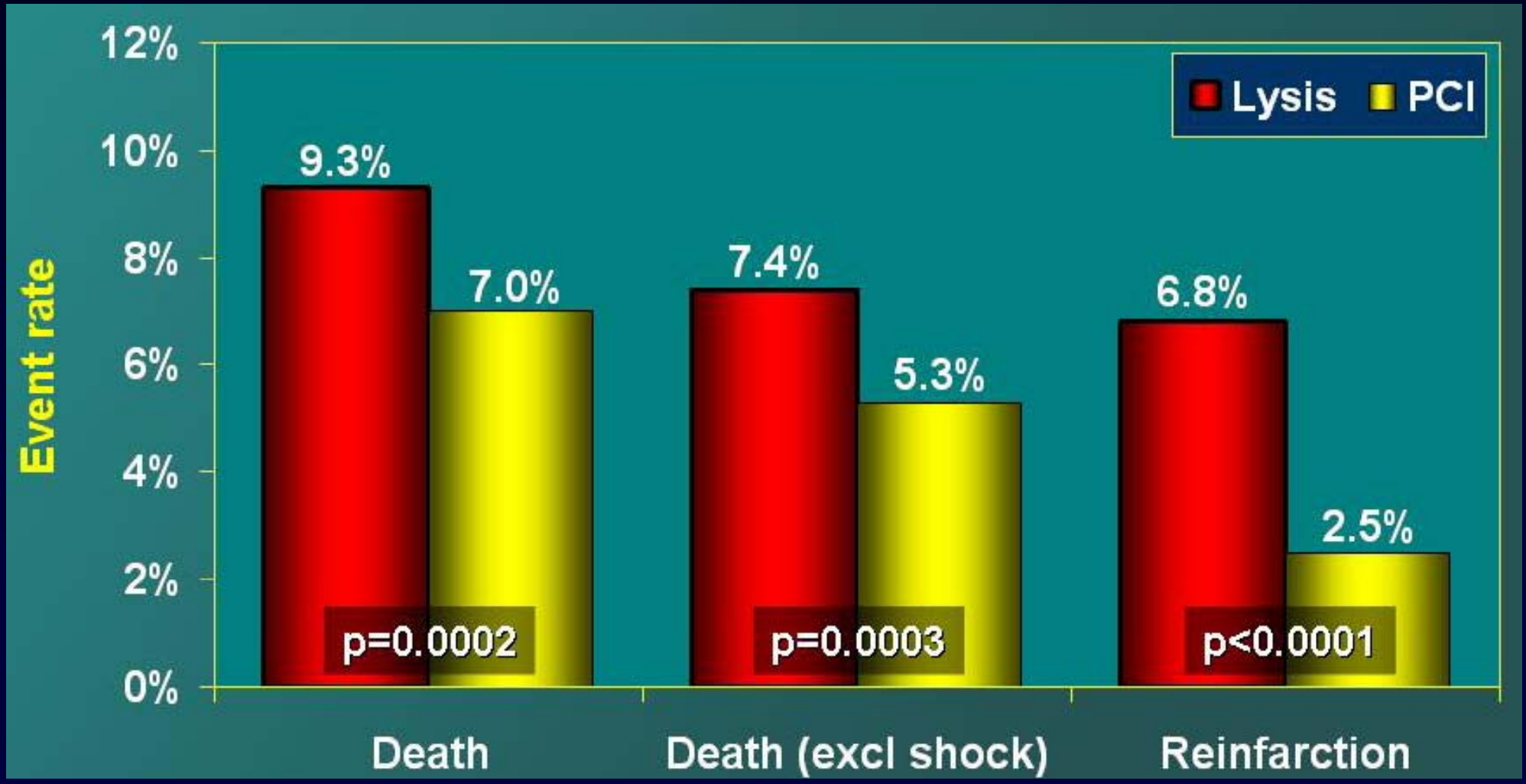
Primary PCI versus thrombolytic therapy Trials (23 RCTs, N=7,739)

	Patients' characteristics	Symptom duration (h)	Number randomised to PTCA (n=3872)	Numer randomised to thrombolysis (n=3867)	Stents used	Glycoprotein IIb/IIIa antagonists used	Thrombolytic agent used, administration time	Time to treatment (min)	
								PTCA	Thrombolytic therapy
Streptokinase trials (n=1837)									
Zijlstra[8]	Age ⩽75 years, ST↑	<6	152	149	No	No	1·5 million U SK, 1h	62*	30*
Riberio[9]	Age <75 years, ST↑	<6	50	50	No	No	1·2 million U SK, 1h	238	179
Grinfeld[10]	ST↑	<12	54	58	No	No	1·5 million U SK, 1h	63†	18†
Zijlstra[11]	ST↑, low risk	<6	47	53	No	No	1·5 million U SK, 1h	68*	30*
Akhras[12]	ST↑	<12	42	45	No	No	1·5 million U SK, 1h	NA	NA
Widimsky[13]**	ST↑, LBBB	<6	101	99	Yes	No	1·5 million U SK, 1h	80†	70†
de Boer[14]	Age ⩾76 years; ST↑	<6	46	41	Yes	No	1·5 million U SK, 1h	59*	31*
Widimsky[15]	ST↑	<12	429	421	Yes	Yes	1·5 million U SK, 1h	277‡§	245‡§
Fibrin-specific trials (n=5902)									
DeWood[16]	Age ⩽76 years; ST↑	<12	46	44	No	No	Duteplase, 4h	126*	84*
Grines[17]	ST↑	<12	195	200	No	No	t-PA, 3h	60†	32†
Gibbons[18]	Age <80 years; ST↑	<12	47	56	No	No	Duteplase, 4h	45†	20†
Ribichini[19,20]	Age <80 years; inferior MI, anterior ST↓	<6	55	55	No	No	Accelerated t-PA	40†	33†
Garcia[21,22]	anterior MI	5	95	94	No	No	Accelerated t-PA	84*	69*
GUSTO IIb[23]	ST↑, LBBB	<12	565	573	No	No	Accelerated t-PA	114†	72†
Le May[24]	ST↑, LBBB	<12	62	61	Yes	Yes	Accelerated t-PA	77†¶	15†
Bonnefoy[25]	ST↑	<6	421	419	Yes	Yes	Accelerated t-PA	190†	130†
Schomig[26]	ST↑	<12	71	69	Yes	Yes	Accelerated t-PA	65*¶	30*¶
Vermeer[27]**	Age <80 years; ST↑	<6	75	75	Yes	No	Accelerated t-PA	100†	85†
Andersen[28]	ST↑	<12	790	782	Yes	NA	Accelerated t-PA	NA	NA
Kastrati[29]	ST↑, LBBB	<12	81	81	Yes	Yes	Accelerated t-PA	75*¶	35*¶
Aversano[30]	ST↑	<12	225	226	Yes	Yes	Accelerated t-PA	102*¶	46*¶
Grines[31]	ST↑	<12	71	66	Yes	Yes	Accelerated t-PA	155*	51*
Hochman[7]	Cardiogenic shock	<36	152	150	Yes	Yes	Accelerated t-PA	75†¶	6168†¶‖

Keeley. Lancet 2003;361:13-20

23 Randomized Trials of PCI vs Lysis

N=7,739



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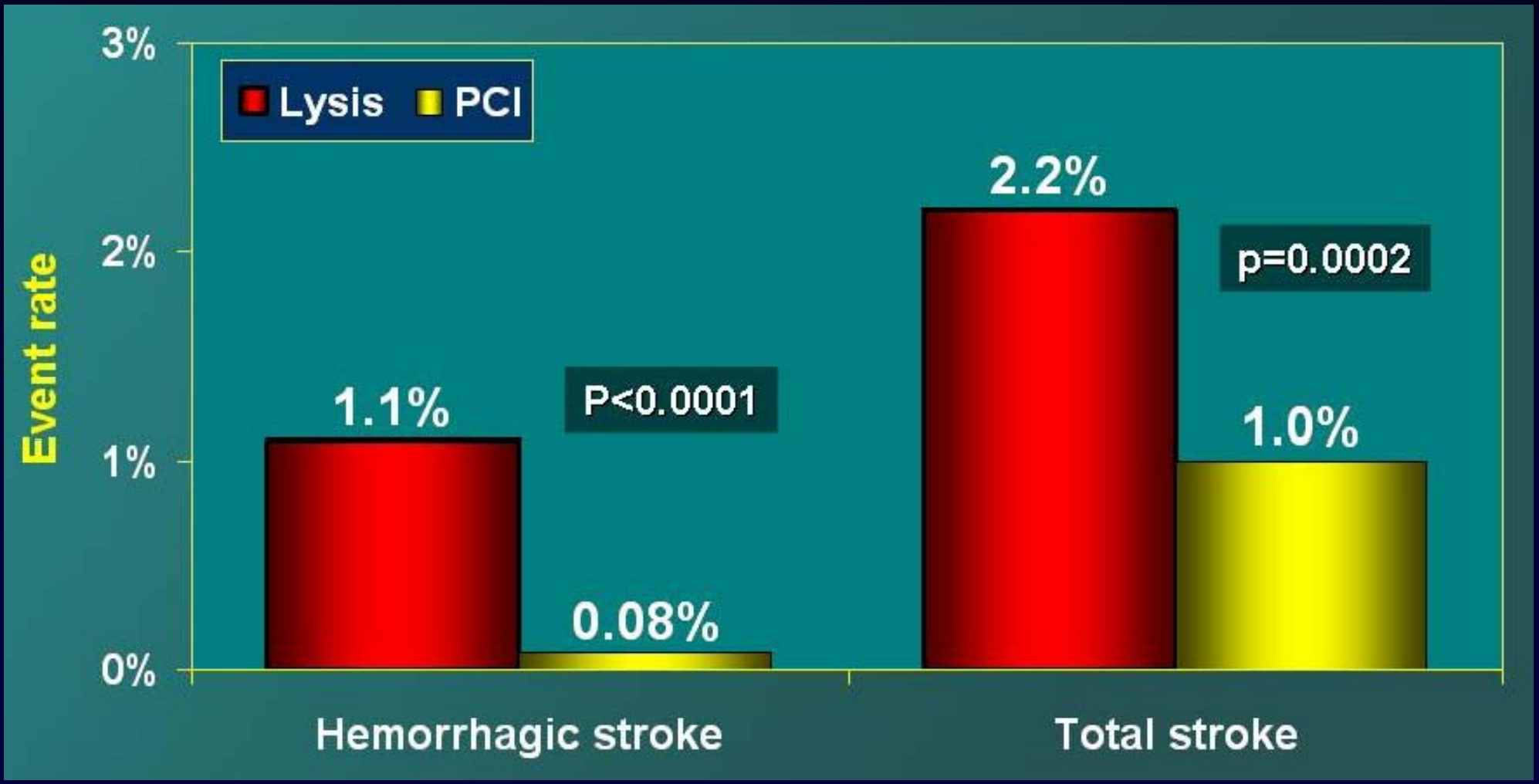


Keeley. Lancet 2003;361:13-20

Other advantages of primary PCI compared to thrombolytic therapy

- Less recurrent ischemia
- Fewer unplanned catheterization and revascularization procedures
- Earlier hospital discharge
- Similar-lower cost

2004 ACC/AHA STEMI Guidelines

Primary PCI

Class I

A

- STEMI (including posterior MI or presumably new LBBB) within 12 hours of symptom onset
  - Door to balloon <90 minutes
  - Skilled operator (>75 PCIs per year)
  - Skilled team (>200 PCIs and >36 primary PCIs per year)
  - Surgical facilities available

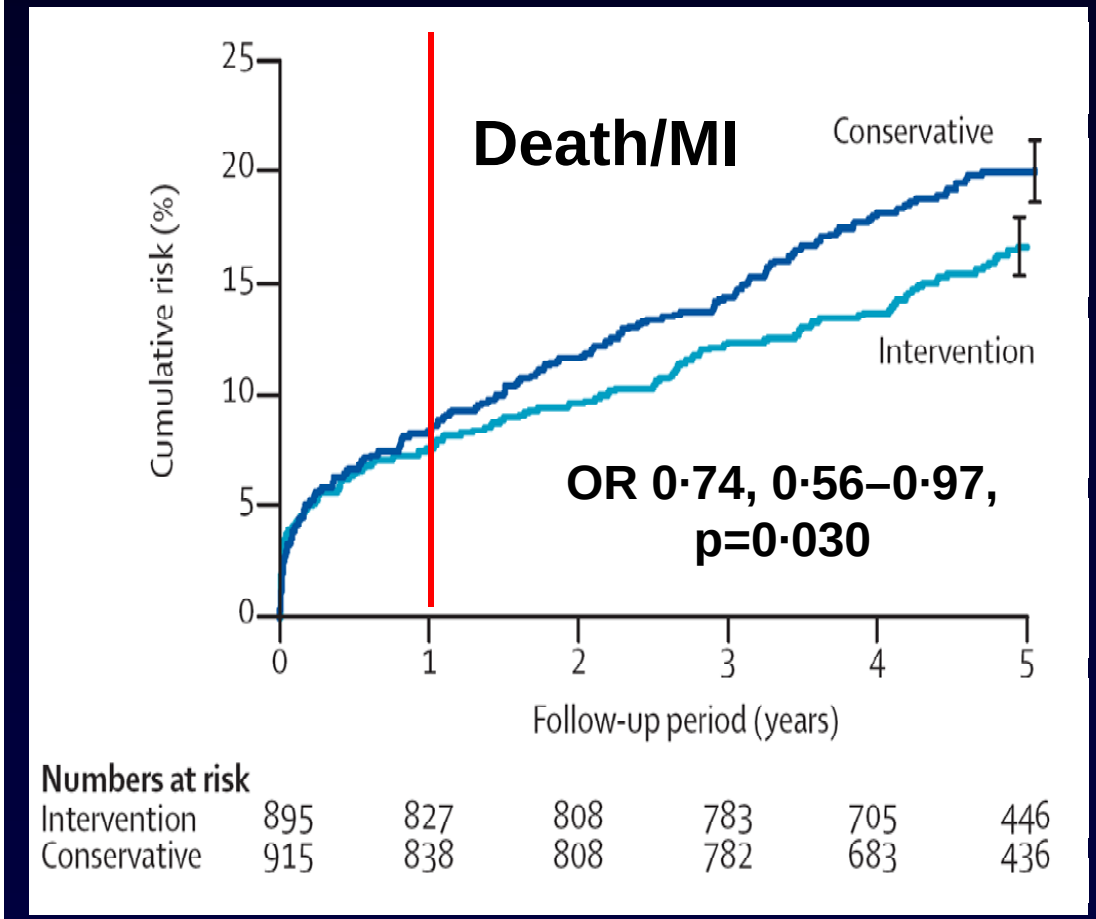
www.aha.org, www.acc.org

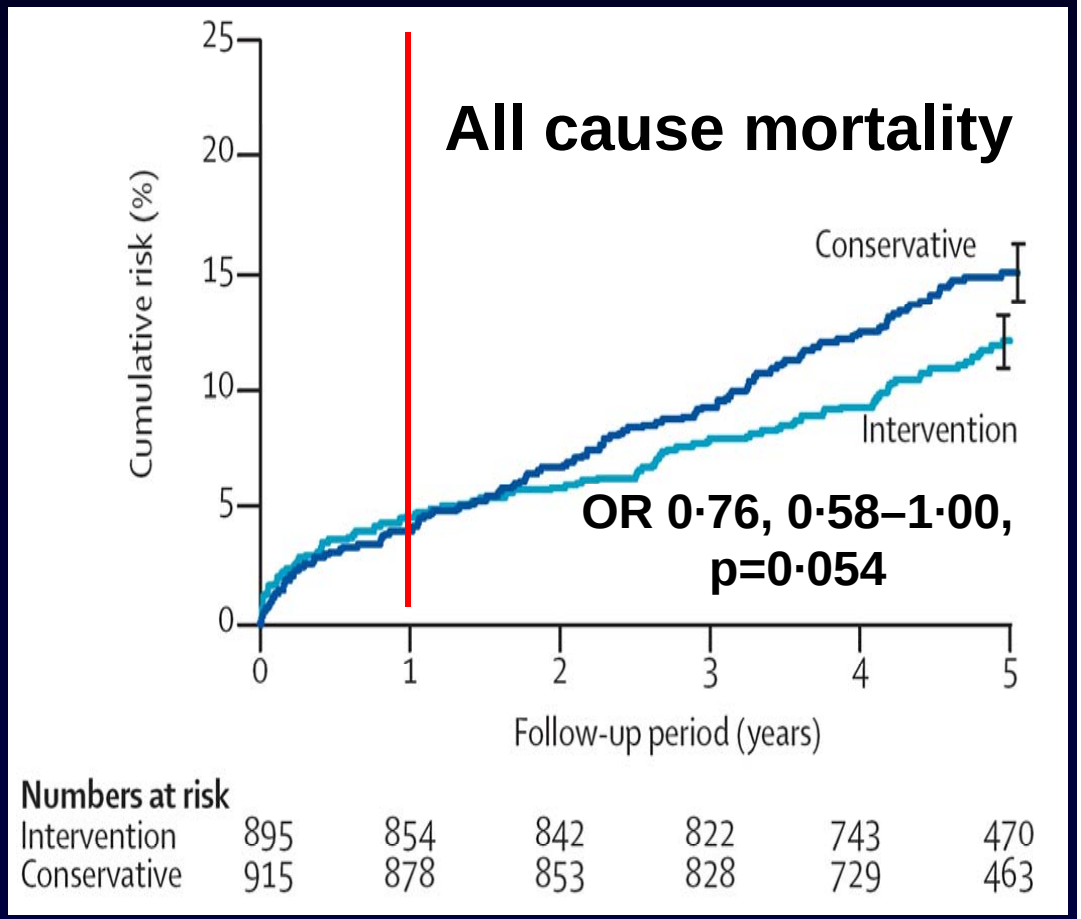
PCI vs Medical Tx

- STEMI
- NSTE Acute Coronary Syndrome
- Stable CAD

5-year outcome of an interventional strategy in NSTE ACS : RITA-3 trial

1810 patients admitted with NSTE ACS were randomly assigned to receive early intervention (n=895) or a conservative strategy (n=915).





Lancet 2005; 366:914–20

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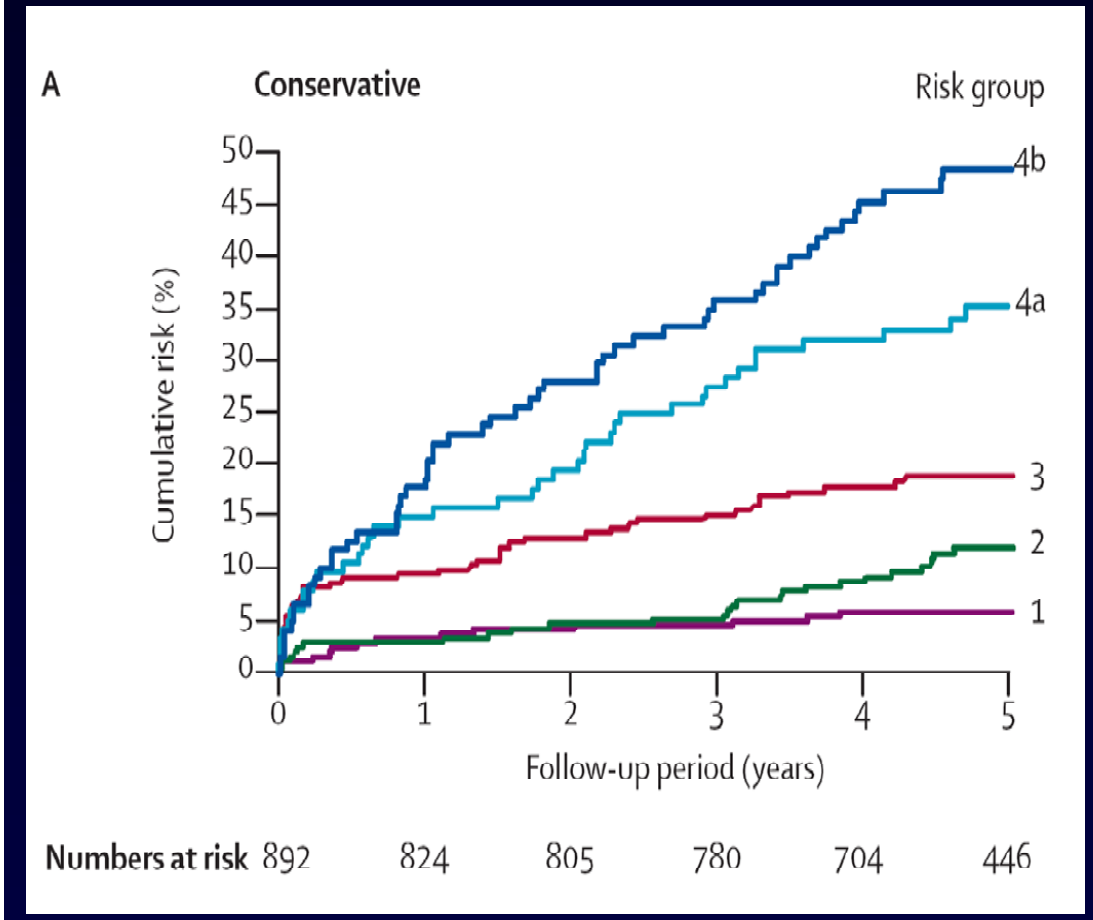
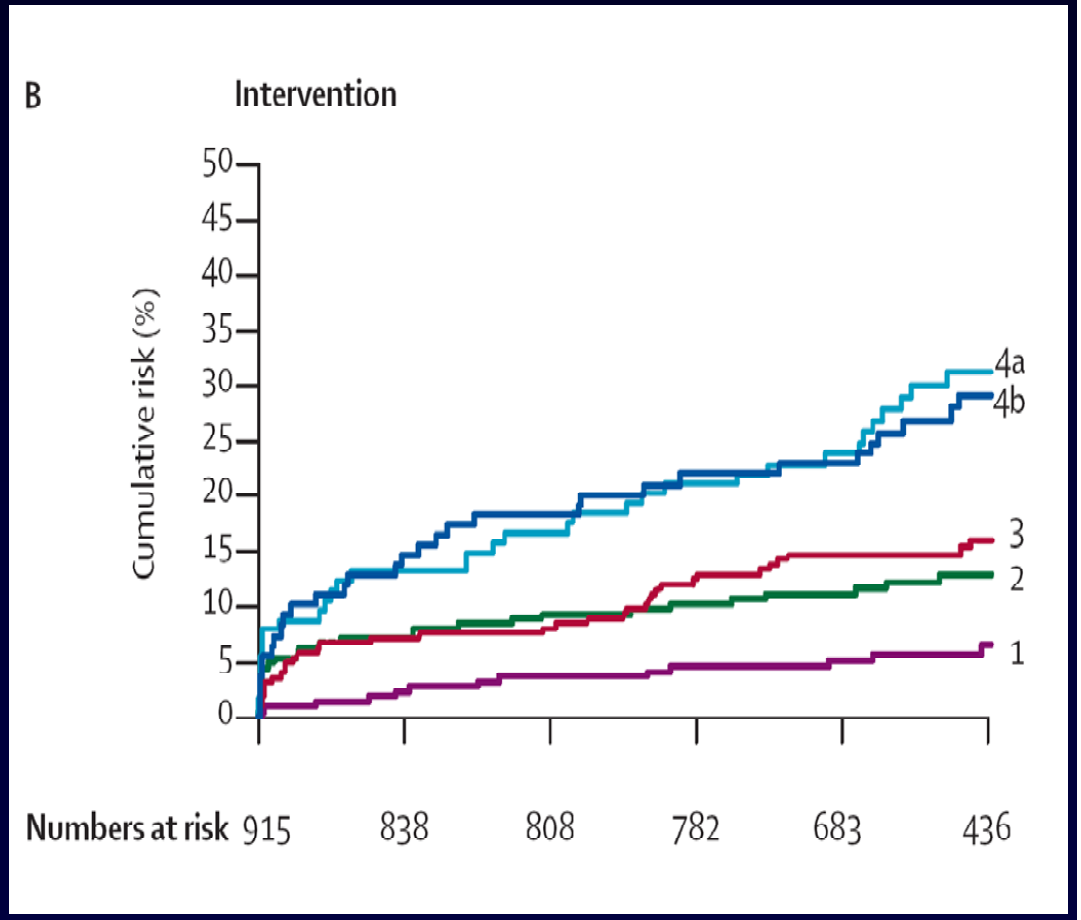




Lancet 2005; 366:914–20

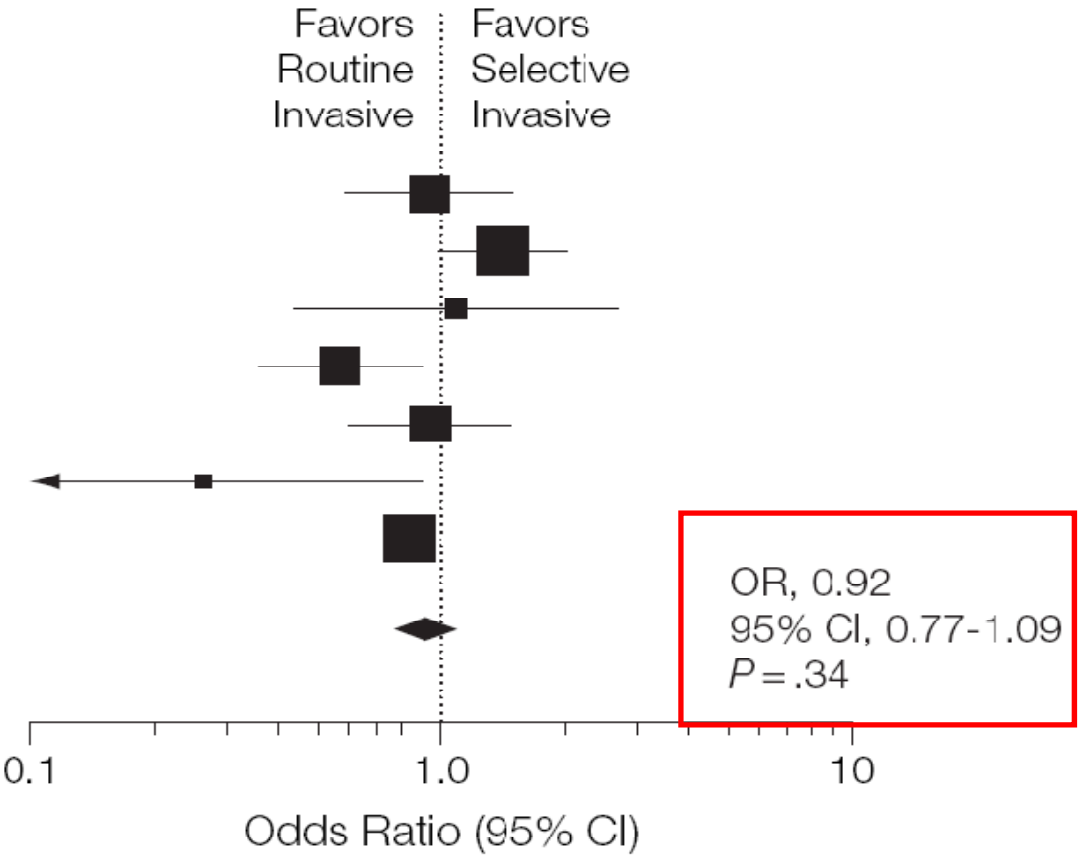
Routine vs Selective Invasive Strategies in ACS : A Collaborative Meta-analysis of RCTs (7 RCTs, N=9212, mean F/U 17 months)

Source	Antithrombotic Treatment		Time to Cardiac Catheterization	
	Background	GpIIb/IIIa Inhibitor, %	Routine Invasive Group, h	Selective Invasive Group, d
TIMI IIIB,[16] 1994	Aspirin, UFH	0	36	7.1
MATE,[17] 1998	Aspirin, UFH	0	16	3.5
VANQWISH,[18] 1998	Aspirin, UFH	0	48	14
FRISC II,[19] 1999	Aspirin, dalteparin	10	96	17
TACTICS-TIMI 18,[20] 2001	Aspirin, UFH, tirofiban	94	22	3.3
VINO,[21] 2002	Aspirin, UFH	0	6.2	61
RITA 3,[22] 2002	Aspirin, enoxaparin	25	48	42.5

JAMA 2005;293:2908–17

Routine vs Selective Invasive Strategies in Patients With ACS : A Collaborative Meta-analysis of Randomized Trials

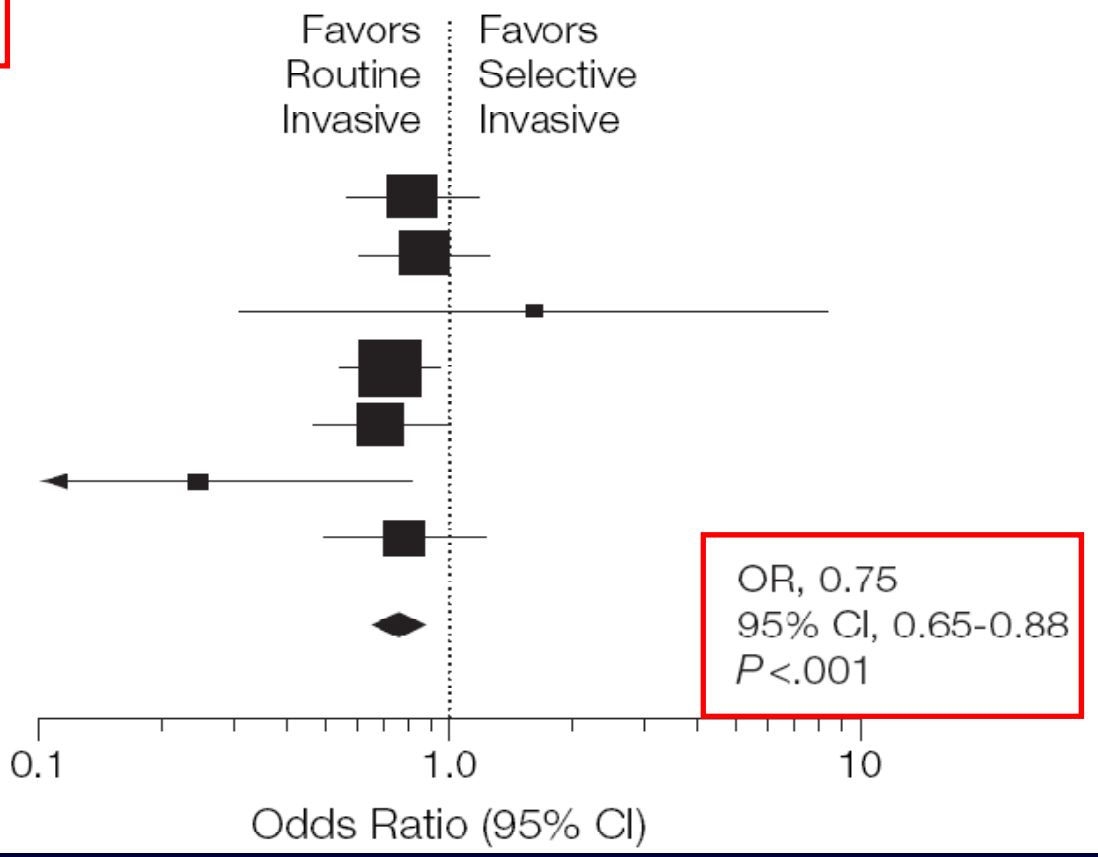
Source	Mortality, No./Total (%) Routine Invasive	Selective Invasive
TIMI IIIB[16]	36/740 (4.9)	38/733 (5.2)
VANQWISH[17]	80/462 (17.3)	59/458 (12.9)
MATE[18]	12/111 (10.8)	9/90 (10.0)
FRISC II[19]	27/1222 (2.2)	48/1234 (3.9)
TACTICS[20]	37/1114 (3.3)	39/1106 (3.5)
VINO[21]	2/64 (3.1)	9/67 (13.4)
RITA 3[22]	60/895 (6.7)	72/915 (7.9)
Subtotal	**254/4608 (5.5)**	**274/4604 (6.0)**



JAMA 2005;293:2908–17

Routine vs Selective Invasive Strategies in Patients With ACS : A Collaborative Meta-analysis of Randomized Trials

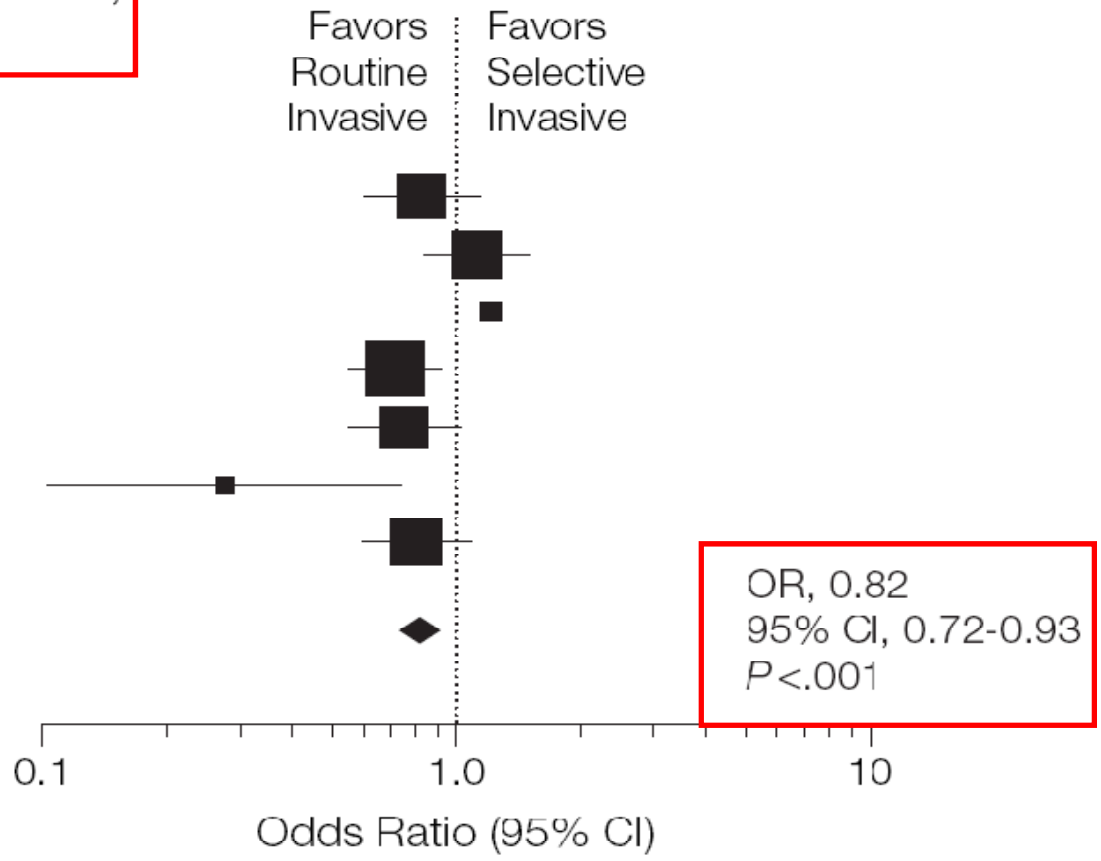
Source	Nonfatal Myocardial Infarction, No./Total (%)	
	Routine Invasive	Selective Invasive
TIMI IIIB[16]	62/740 (8.4)	74/733 (10.1)
VANQWISH[17]	72/462 (15.6)	80/458 (17.5)
MATE[18]	4/111 (3.6)	2/90 (2.2)
FRISC II[19]	105/1222 (8.6)	143/1235 (11.6)
TACTICS[20]	53/1114 (4.8)	76/1106 (6.9)
VINO[21]	2/64 (3.1)	10/67 (14.9)
RITA 3[22]	37/895 (4.1)	48/915 (5.2)
Subtotal	**335/4608 (7.3)**	**433/4604 (9.4)**



JAMA 2005;293:2908–17

Routine vs Selective Invasive Strategies in Patients With ACS : A Collaborative Meta-analysis of Randomized Trials

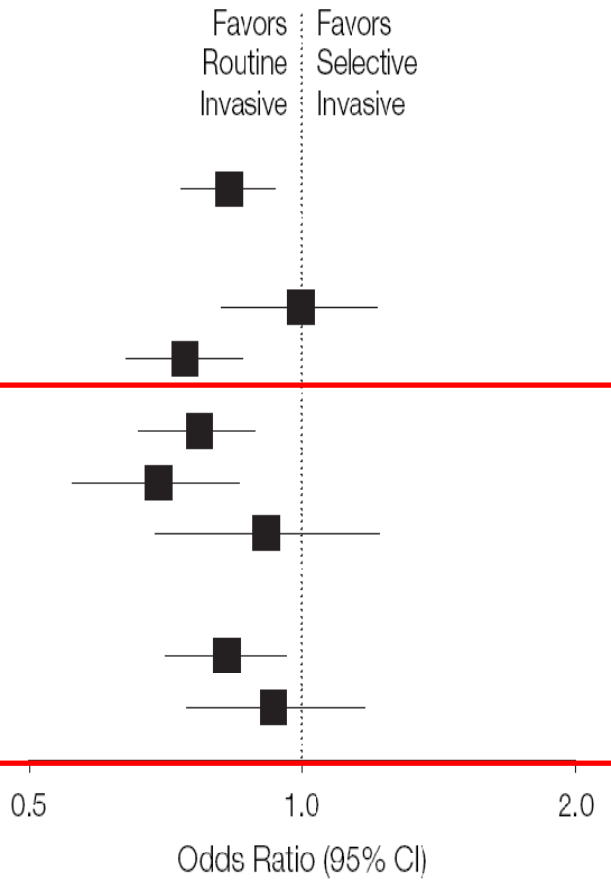
Source	Composite of Death or Myocardial Infarction, No./Total (%)	
	Routine Invasive	Selective Invasive
TIMI IIIB[16]	86/740 (11.6)	101/733 (13.8)
VANQWISH[17]	152/462 (32.9)	139/458 (30.3)
MATE[18]	16/111 (14.4)	11/90 (12.2)
FRISC II[19]	127/1222 (10.4)	174/1235 (14.1)
TACTICS[20]	81/1114 (7.3)	105/1106 (9.5)
VINO[21]	4/64 (6.3)	15/67 (22.4)
RITA 3[22]	95/895 (10.6)	118/915 (12.9)
Total	**561/4608 (12.2)**	**663/4604 (14.4)**



JAMA 2005;293:2908–17

Routine vs Selective Invasive Strategies in Patients With ACS : A Collaborative Meta-analysis of Randomized Trials

Trial	Routine, No./Total (%)	Selective, No./Total (%)	Odds Ratio (95% CI)	*P* Value
Overall	561/4608 (12.2)	663/4604 (14.4)	0.82 (0.72-0.93)	.001
Year of Publication				
Before 1999*	254/1313 (19.3)	251/1281 (19.6)	0.99 (0.81-1.21)	.92
After 1999†	307/3280 (9.4)	412/3314 (12.4)	0.73 (0.63-0.85)	<.001
Trials With Troponin Data‡	303/2316 (9.4)	397/3247 (12.2)	0.75 (0.64-0.88)	<.001
Positive Troponin	148/1473 (10.0)	209/1493 (14.0)	0.69 (0.55-0.86)	0.001
Negative Troponin	94/1412 (6.7)	106/1429 (7.4)	0.89 (0.67-1.18)	.42
Any Cardiac Biomarker				
Positive	348/2364 (14.7)	405/2331 (17.4)	0.82 (0.70-0.96)	.01
Negative	146/1896 (7.7)	164/1938 (8.5)	0.90 (0.72-1.14)	.40



JAMA 2005;293:2908–17

NSTEMI / UA strategy trials

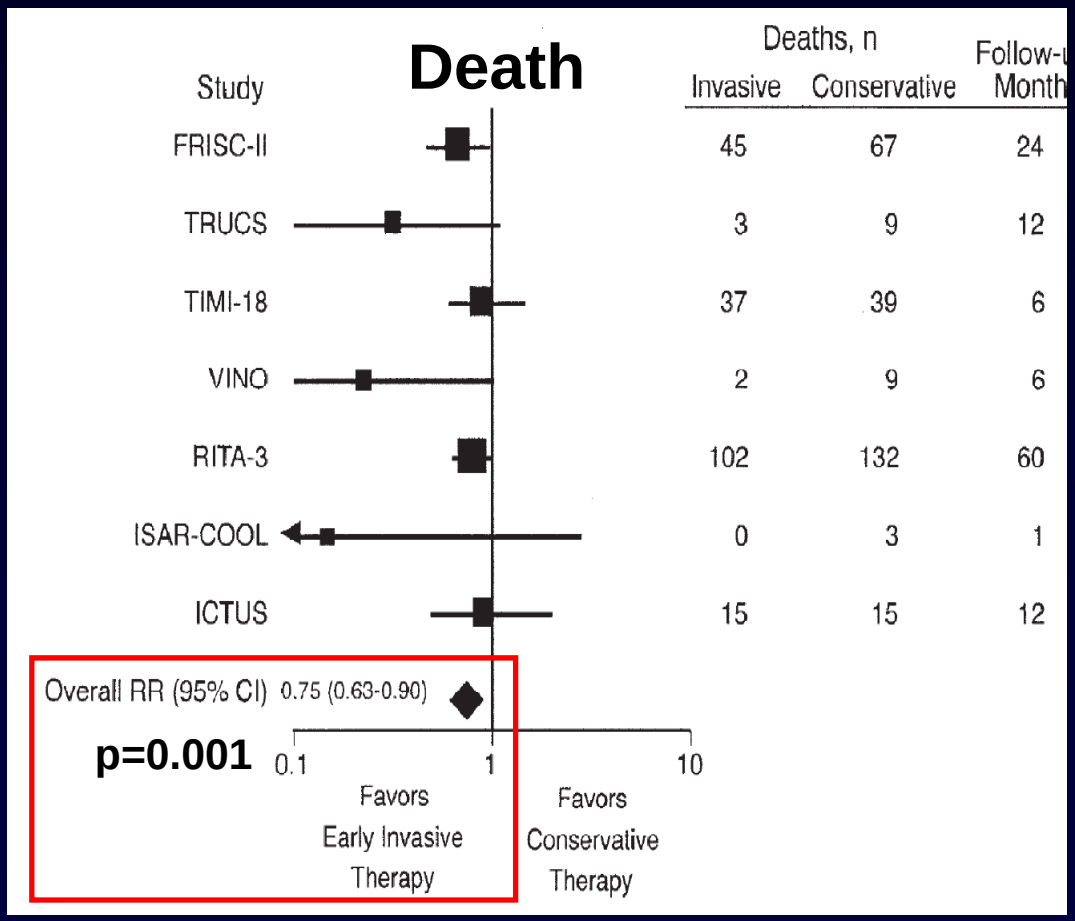
7 RCTs, N=8375, mean F/U 2 years

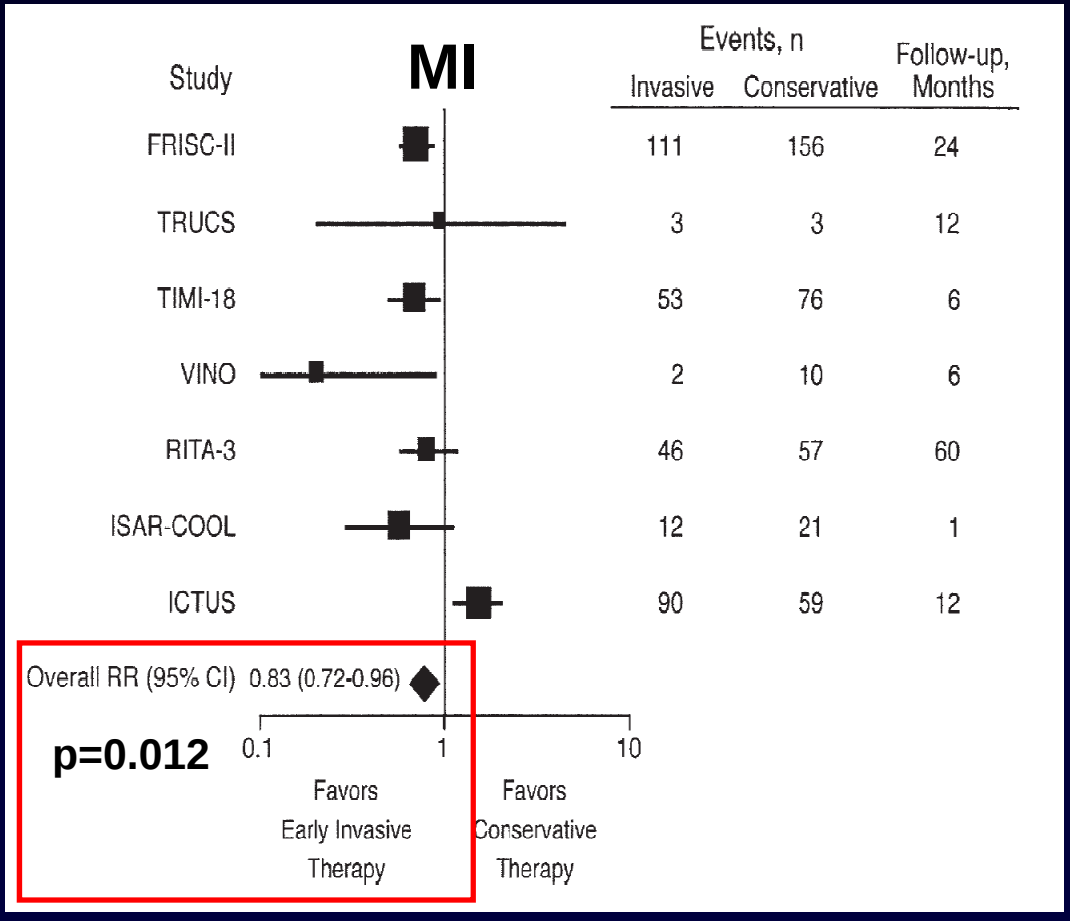
Trial	Enrollment period	No of patient	Invasive/ conservative	F/U months
FRISC-II	1996-1998	2456	1222/1234	24
TRUCS	1997-1998	148	76/72	12
TIMI-18	1997-1999	2220	1114/1106	6
VINO	1998-2000	131	64/67	6
RITA-3	1997-2001	1810	895/915	60
ISAR-COOL	2000-2002	410	203/207	1
ICTUS	2001-2003	1200	604/596	12

JACC 2006;48:1319–25

Benefit of Early Invasive Therapy in ACS : A Meta-Analysis of Contemporary RCTs

RR of all-cause mortality and MI for early invasive Tx vs conservative therapy at a mean follow-up of 2 years





JACC 2006;48:1319–25

Early invasive Tx in NSTE ACS

2007 PCI Focused Update Recommendation
Class I
1. An early invasive PCI strategy is indicated for patients with UA/NSTEMI who have no serious comorbidity† and who have coronary lesions amenable to PCI and who have characteristics for invasive therapy (see Table 3 and Section 3.3 of the ACC/AHA 2007 UA/NSTEMI Guidelines).[14] *(Level of Evidence: A)*

Preferred Strategy	Patient Characteristics
Invasive	Recurrent angina or ischemia at rest or with low-level activities despite intensive medical therapy
	Elevated cardiac biomarkers (TnT or TnI)
	New or presumably new ST-segment depression
	Signs or symptoms of HF or new or worsening mitral regurgitation
	High-risk findings from noninvasive testing
	Hemodynamic instability
	Sustained ventricular tachycardia
	PCI within 6 months
	Prior CABG
	High-risk score (e.g., TIMI, GRACE)
	Reduced LV function (LVEF less than 40%)
Conservative	Low-risk score (e.g., TIMI, GRACE)
	Patient or physician preference in absence of high-risk features

PCI vs Medical Tx

- STEMI
- NSTE Acute Coronary Syndrome
- Stable CAD

PTCA Versus Medical Therapy for Stable Angina Pectoris : ACME

Male patients (n=328) with stable angina pectoris and ischemia on treadmill testing were randomly assigned to PTCA or medical therapy. (double-vessel Disease; n=101, single-vessel disease; n=227)

Exercise Performance, Symptoms and QOL at 6 Months

	Double-Vessel Disease (groups 2a and 2b)			Single-Vessel Disease (groups 1a and 1b)		
	PTCA	p Value	Medical	PTCA	p Value	Medical
Exercise test*						
Duration (min)	+1.2	0.89	+1.3	+2.1	0.0001	+0.6
Onset of angina (min)†	+1.1	0.58	+0.8	+2.6	0.06	+0.8
Max rate–pressure product ($\times 10^{-3}$)	+1.3	0.005	−2.6	+1.8	0.0001	−2.9
Angina frequency‡	−7	0.75	−6	−16	0.05	−7
Angina free at 6 mo (%)	53	0.09	36	63	0.02	48
No. of pts completing questionnaire	45		45	103		107
Quality of life score*	+1.3	0.32	+4.4	+7.1	0.01	+1.5

JACC 1997;29:1505–11

PTCA versus medical treatment for non-acute coronary heart disease:
Meta-analysis of RCTs (6 RCTs, N=1905)

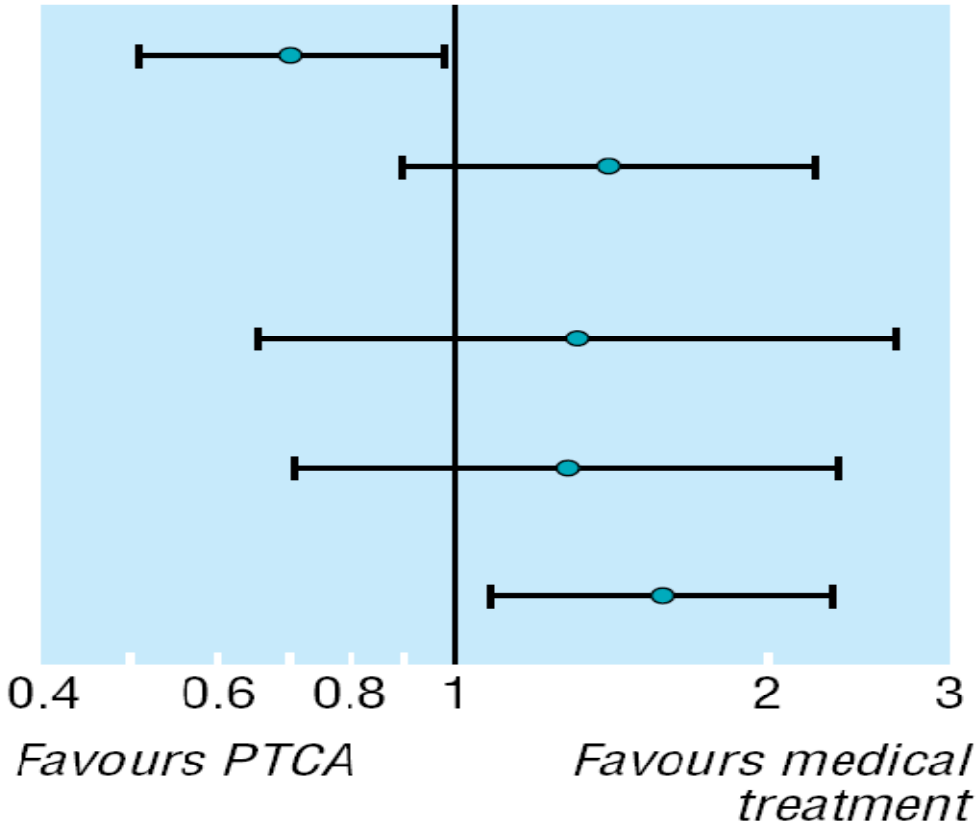
Study	Inclusion criteria		No of vessels (% successful dilatation)	Complications related to PTCA in intervention groups	Follow up (months)	Pre-existing condition (%)		Mean ejection fraction (%)	Trial quality score*
	Clinical	Angiographic				MI	Non-Q MI		
Parisi 1992[17]	Stable angina, history of angina, MI within 3 months, exercise test with ST depression >3 mm, no previous PTCA	Single or serial stenosis within same artery 70% to 99% proximal two thirds	1 (82)	CABG (2.0%); MI (1.0%); non-Q wave MI (3.0%)	6	0	28.8	65	4
Sievers 1993[16]	Previous non-Q wave MI, no angina in daily life, no previous Q wave MI	Mean (SD) degree of stenosis: 86% (11)	1 (100)	None	24	0	54.5	NA	2
MASS 1995[18]	Stable angina, no Q wave MI, no left ventricular dysfunction	Stenosis ≥80% before first diagonal branch, length <12 mm, no total occluded lesion	1 (96)	CABG (2.8%); MI (2.8%)	30	0	0	76	3
Folland 1997[13]	Stable angina, history of angina, MI within 3 months, exercise test with ST depression >3 mm, no previous PTCA	Stenosis ≥70% proximal two thirds, no main artery stenosis >50%, no 3 vessel disease	2 (69)	CABG (2%); MI (0.01%); non-Q wave MI (3.0%)	57	59	NA	66	2
RITA-2 1997[14]	Angina leading to admission within 90 days, previous Q wave MI, no previous PTCA, no left main stem disease	Stenosis ≥50% stenosis in two projections or 70% stenosis in one projection or occluded arteries	1-3 (93)	CABG (1.4%); MI (1.4%); death (0.2%)	32	47	NA	Normal function in 54% of patients	4
AVERT 1999[15]	Angina or asymptomatic, MI or unstable angina but not within 14 days, no triple vessel disease	Stenosis ≥50% in one or two vessels, no main artery stenosis	2 (99)	MI (0.5%)	18	43†		61	4

BMJ 2000;321:73–7

Six RCTs comparing PTCA with medical treatment in patients with stable CAD

Pooled risk ratios for various end points from six randomized controlled trials

End point	Risk ratio (95% CI)
Angina*	0.70 (0.50 to 0.98)
Fatal and non-fatal myocardial infarction	1.42 (0.90 to 2.25)
Death	1.32 (0.65 to 2.70)
PTCA*	1.29 (0.71 to 3.36)
CABG	1.59 (1.09 to 2.32)

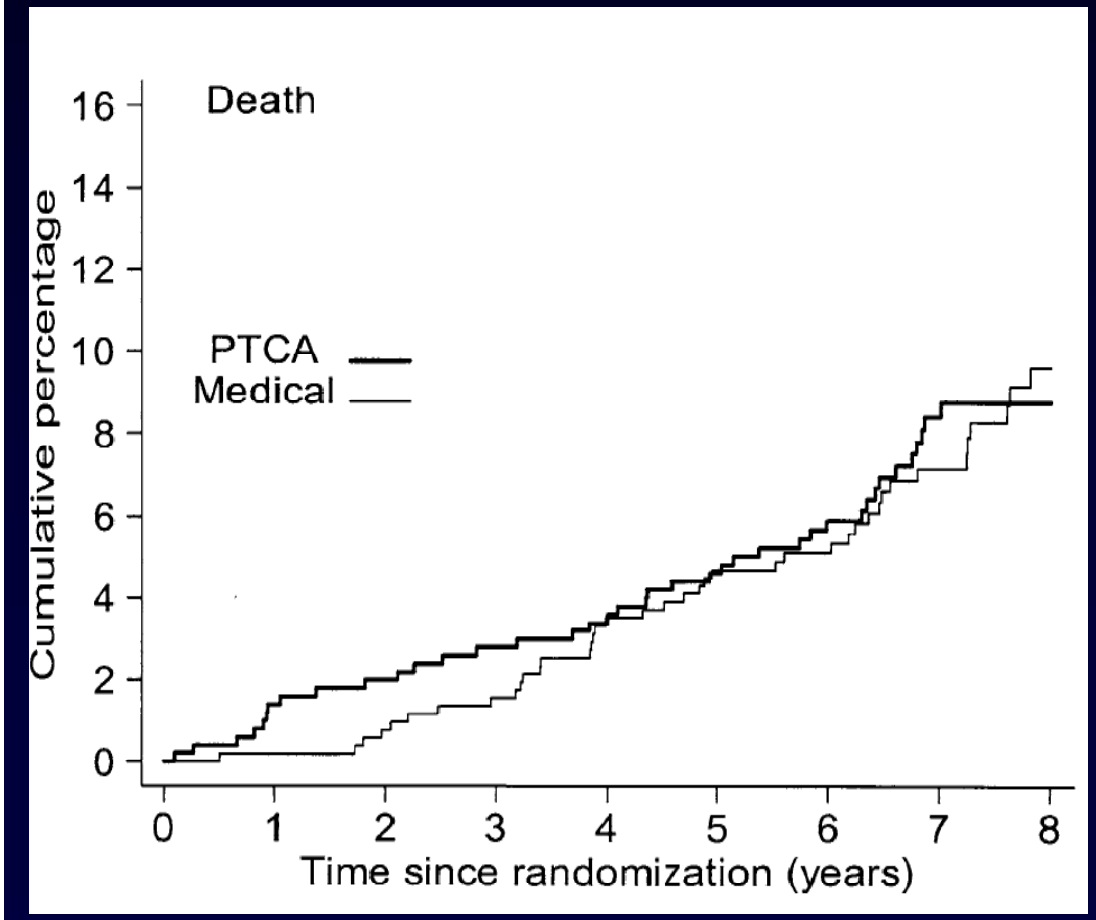


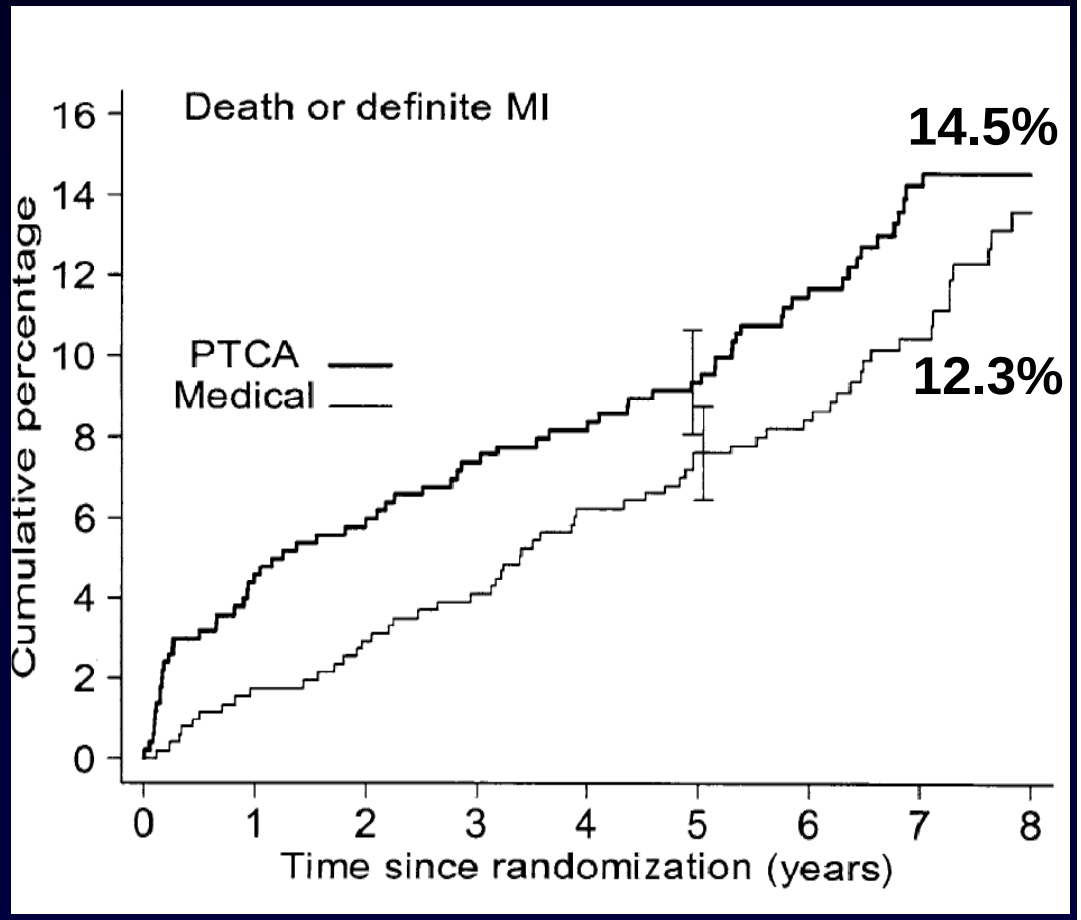
*Test of heterogeneity P<0.001

BMJ 2000;321:73–7

Seven-Year Outcome in the RITA-2 Trial: PTCA Versus Medical Therapy

The 1,018 patients were randomized to coronary angioplasty (n= 504) or continued medical treatment (n= 514).

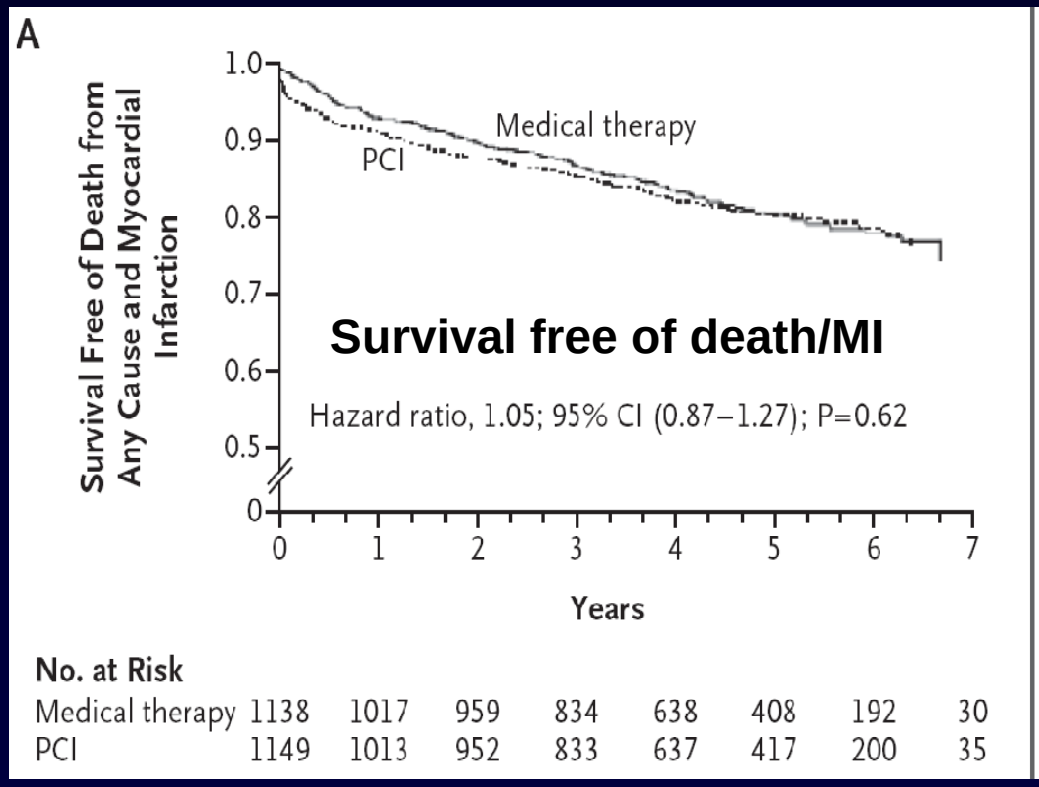


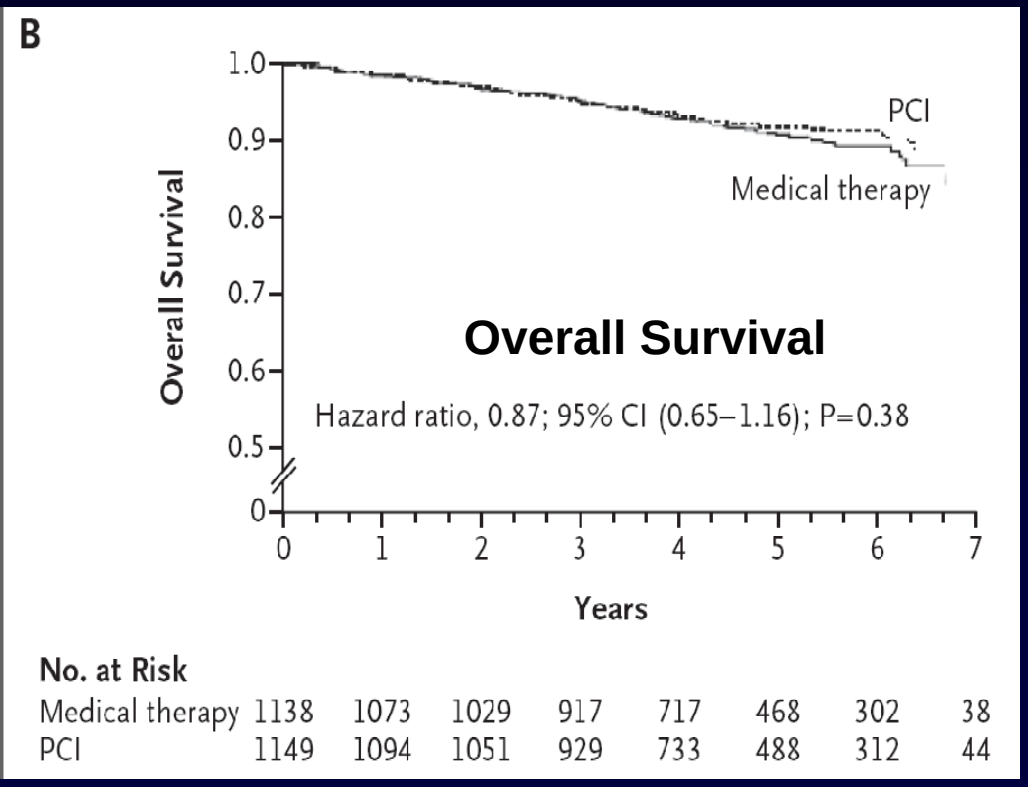


JACC 2003;42:1161–70

Optimal Medical Therapy with or without PCI for Stable Coronary Disease : COURAGE Trial

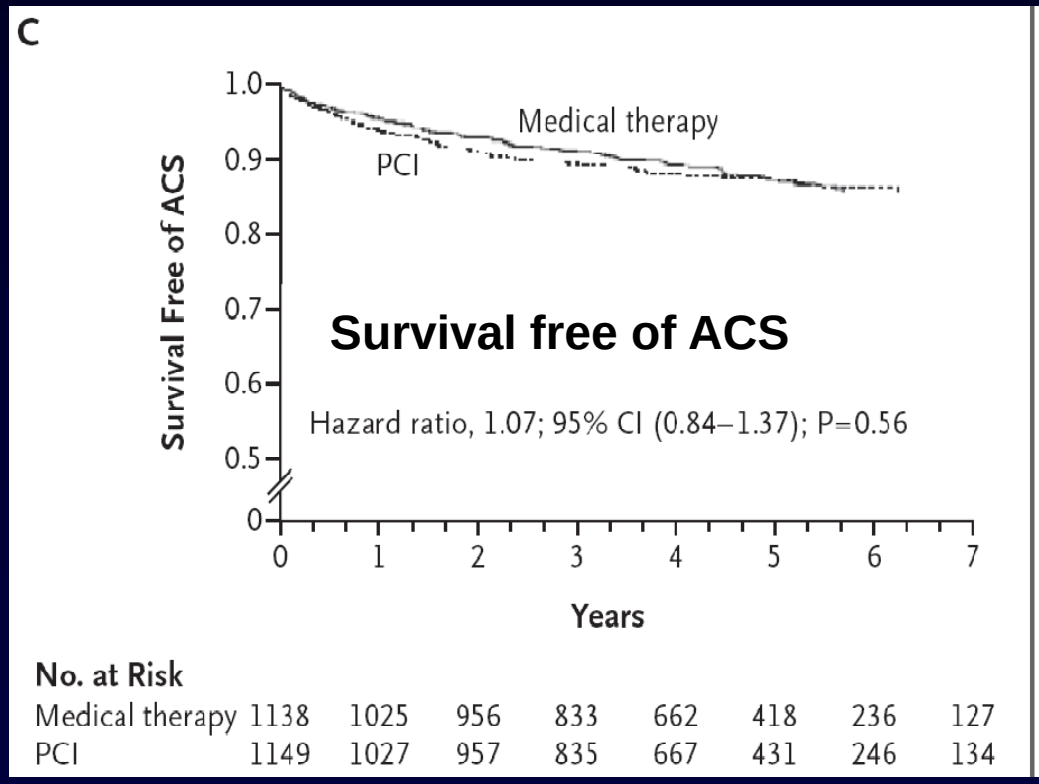
A randomized trial involving 2287 patients who had objective evidence of myocardial ischemia and significant CAD. (PCI group; n=1149, medical-therapy group; n=1138) Median F/U 4.6 yrs

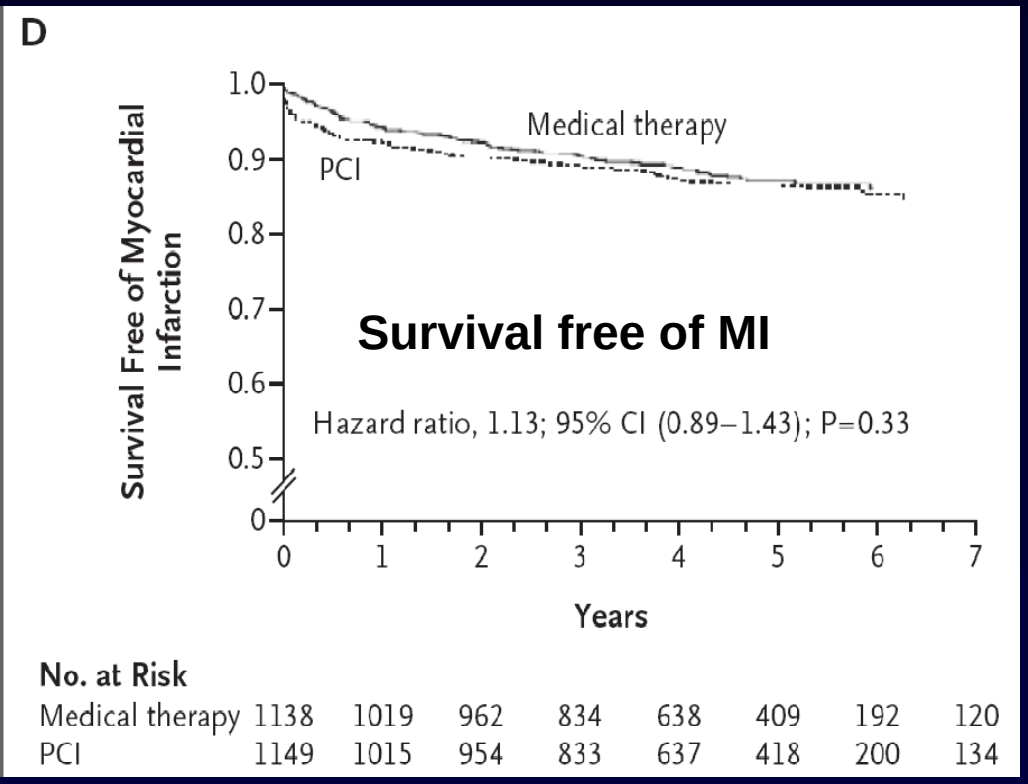




NEJM 2007;356:1503–16

Optimal Medical Therapy with or without PCI for Stable Coronary Disease : COURAGE Trial





NEJM 2007;356:1503–16

Medical Therapy vs PCI for Stable CAD

Trial (Ref. #)	Mortality and MI	Angina Relief	QOL	Repeat Revascularization
RITA-2 (7)	No difference	PCI	PCI	PCI
ACME (8)	No difference	PCI	PCI	PCI
ACME-2 (16)	No difference	PCI	PCI	NA
MASS (9)	No difference	PCI	NA	No difference
MASS-II (11)	No difference	PCI	PCI	No difference
AVERT (10)	No difference	PCI	PCI	No difference
TIME*	No difference	PCI	PCI	PCI
COURAGE (12)	No difference	No difference	PCI	PCI

JACC 2007;50:1598–603

PCI in stable CAD

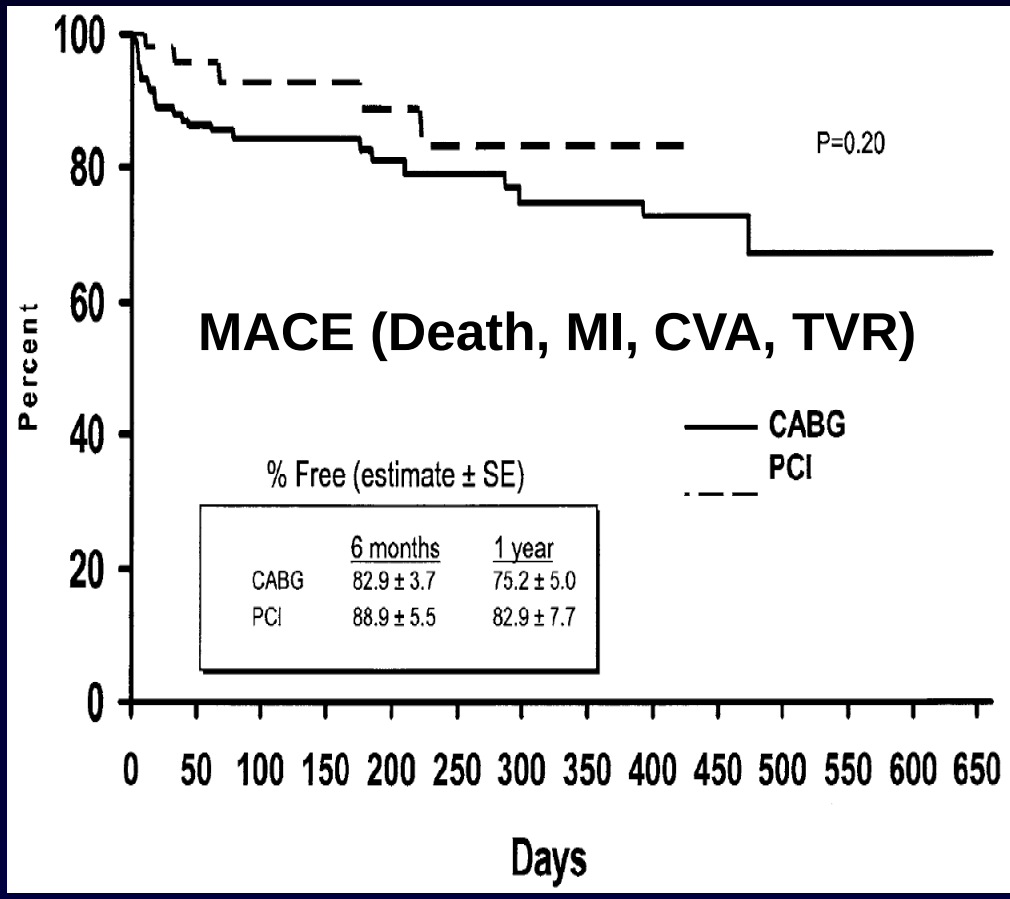
Although the addition of PCI to optimal medical therapy reduced the prevalence of angina, it did not reduce long-term rates of death, nonfatal myocardial infarction.

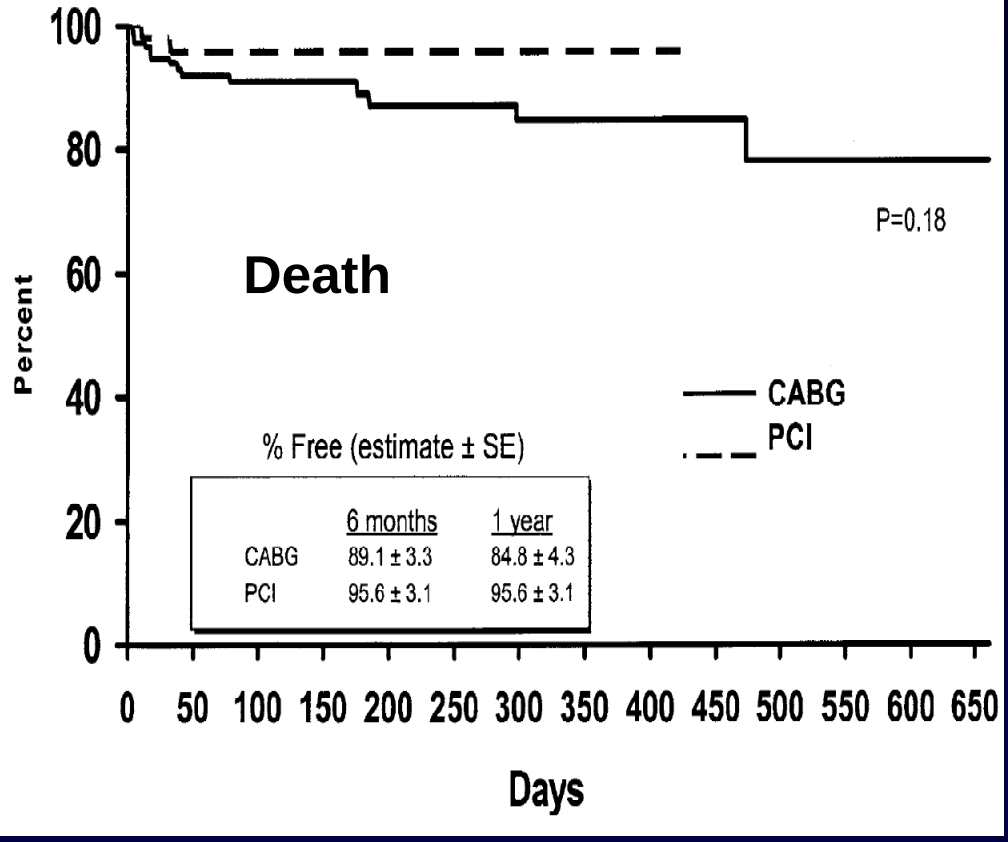
PCI vs CABG

- LM disease
- Multivessel disease
- Diabetes

Comparison of CABG With PCI With DES for Unprotected Left Main CAD

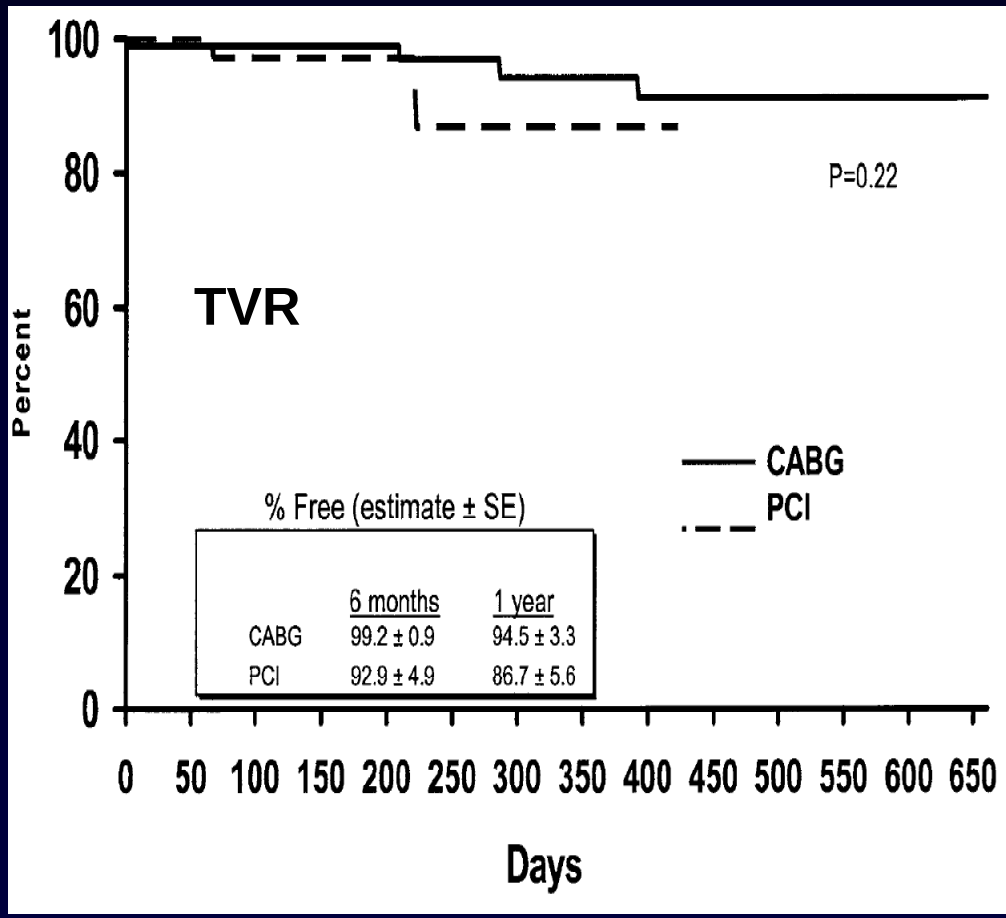
Of total 153 patients, 123 pts underwent CABG, and 50 pts underwent PCI with DES for ULMCA disease. Mean F/U 6 months

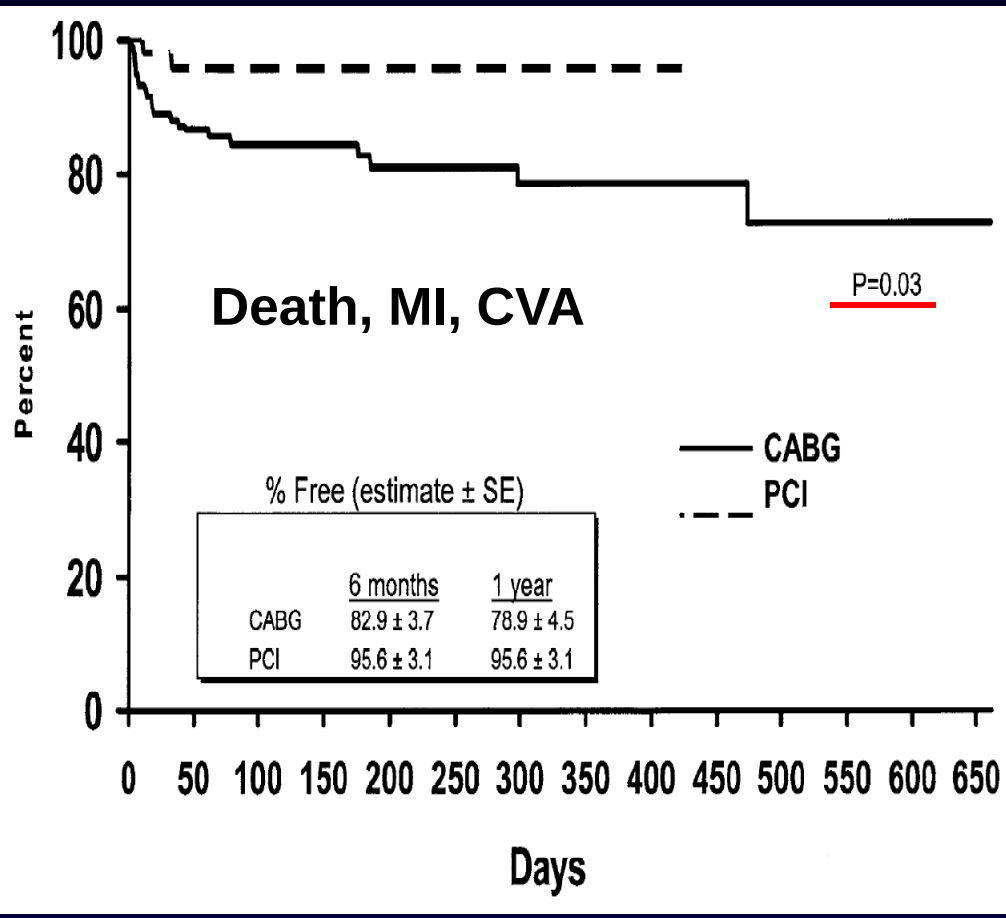




JACC 2007;47:864–70

Comparison of CABG With PCI With DES for Unprotected Left Main CAD

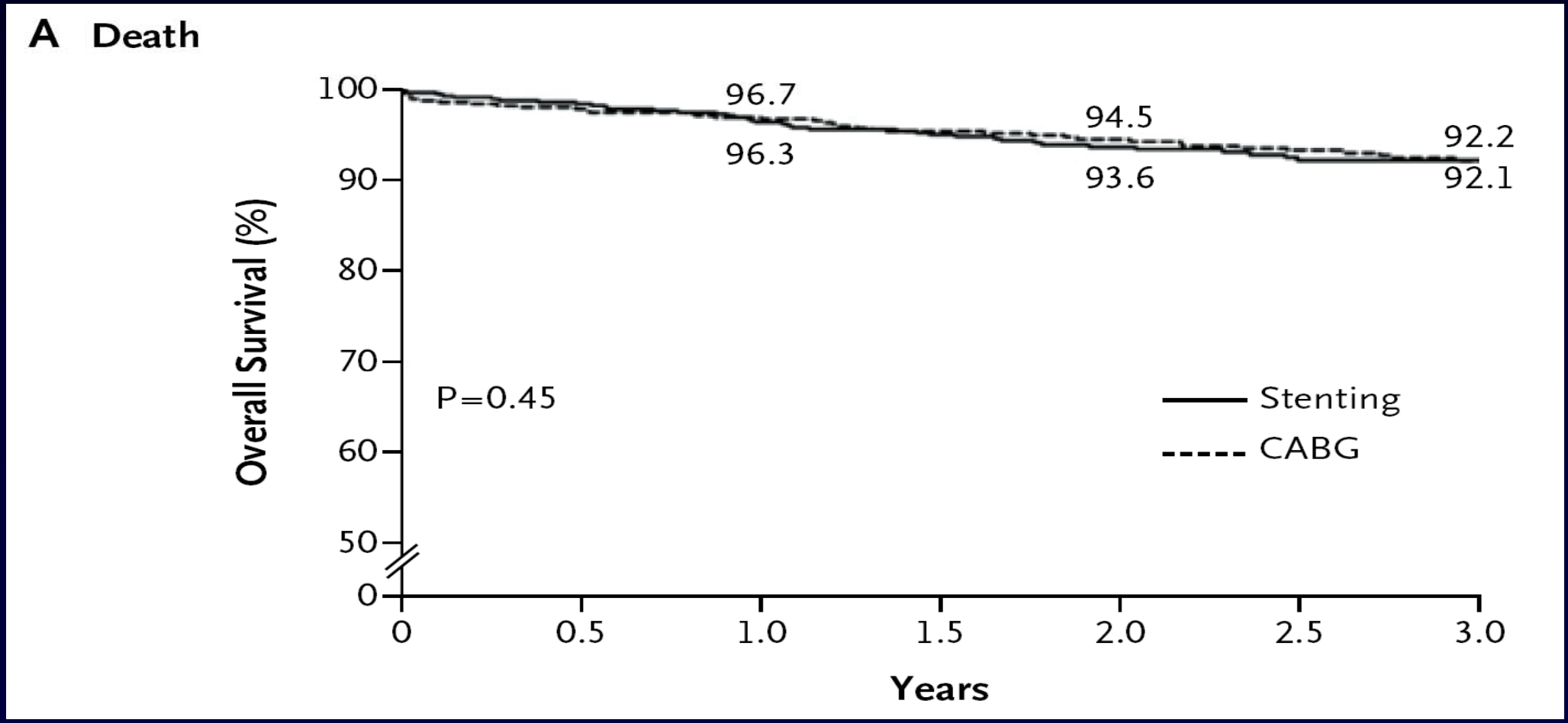




JACC 2007;47:864–70

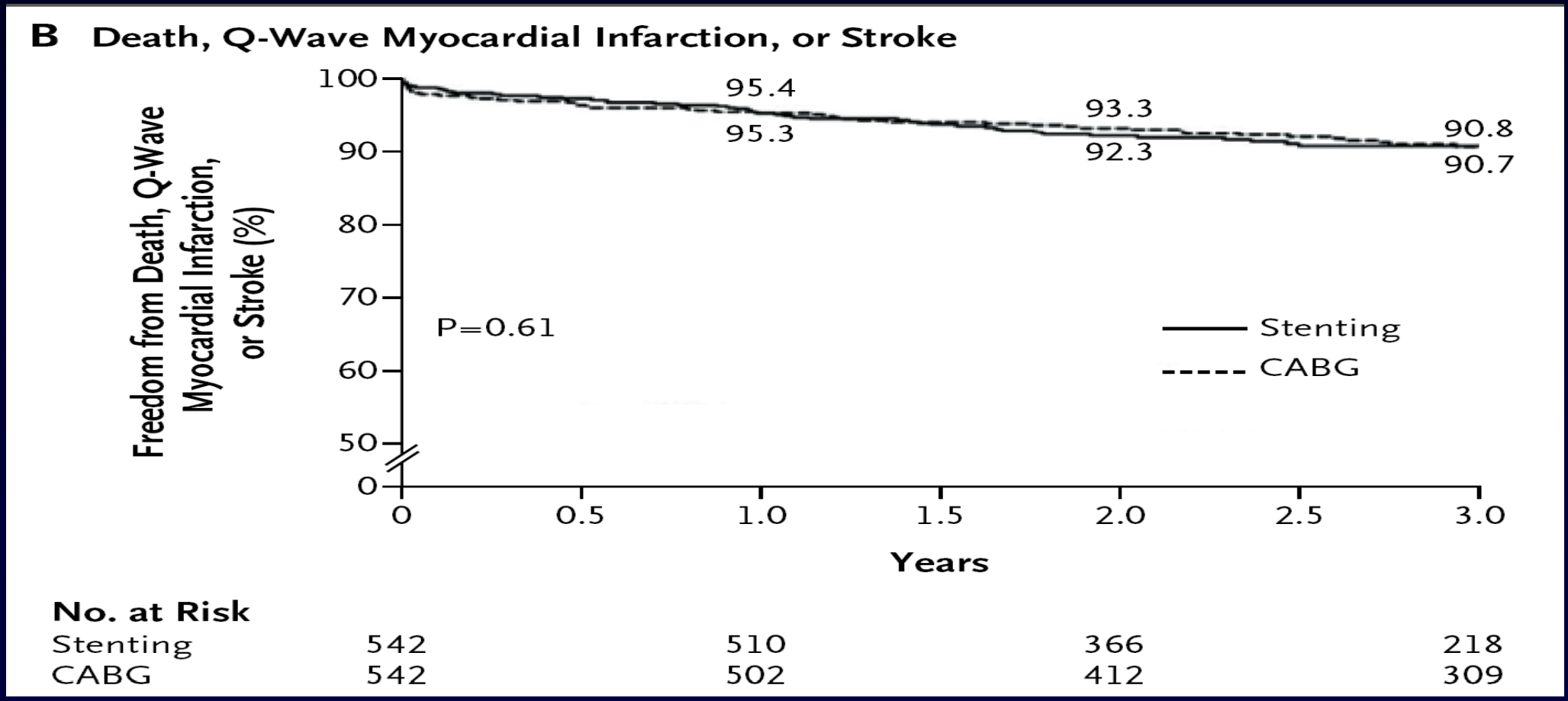
Stents versus CABG for Left Main Coronary Artery Disease : MAIN-COMPARE

All 1102 patients with unprotected left main CAD who underwent stent implantation (1017 D) and 1138 patients who underwent CABG (1152D) were evaluated.



NEJM 2008;358

Stents versus CABG for Left Main Coronary Artery Disease : MAIN-COMPARE



NEJM 2008;358

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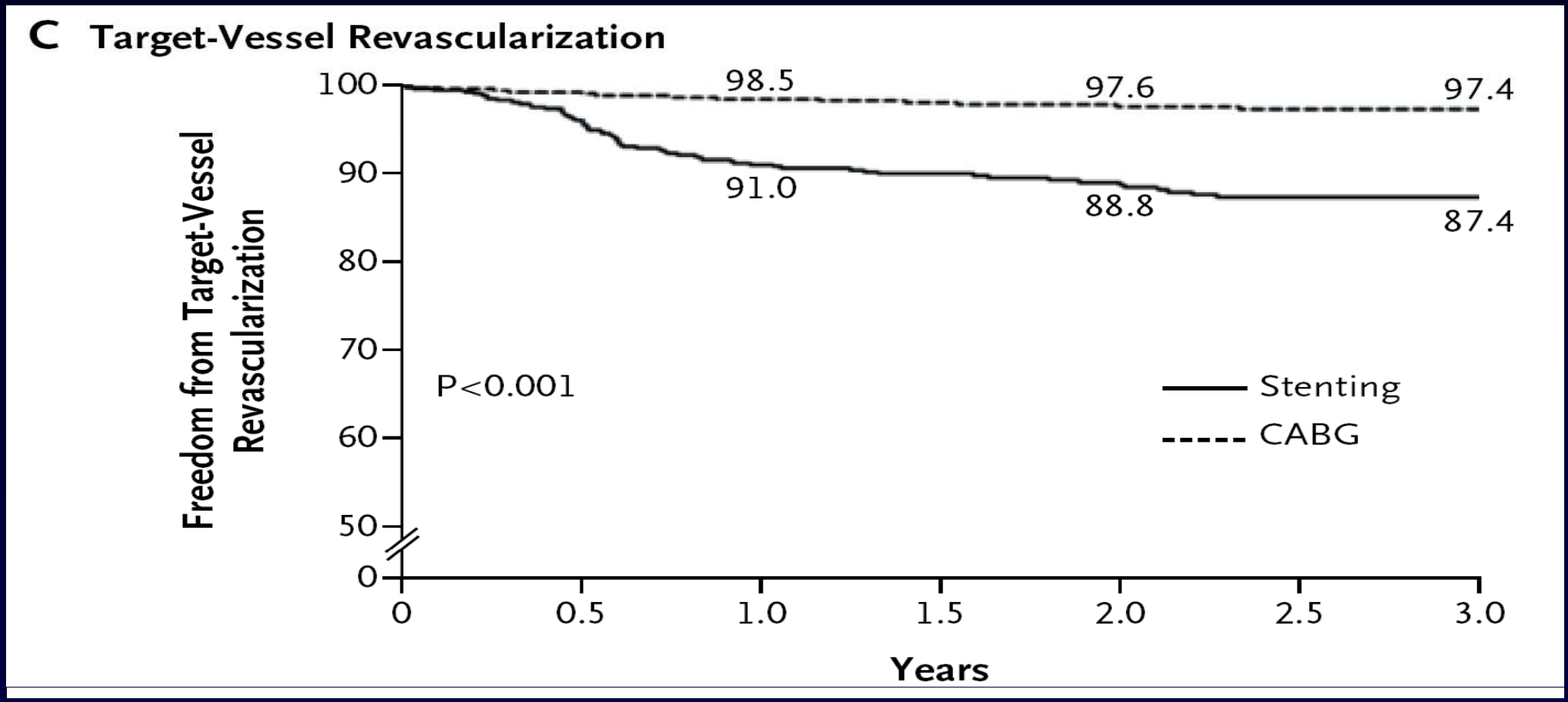

NEJM 2008;358

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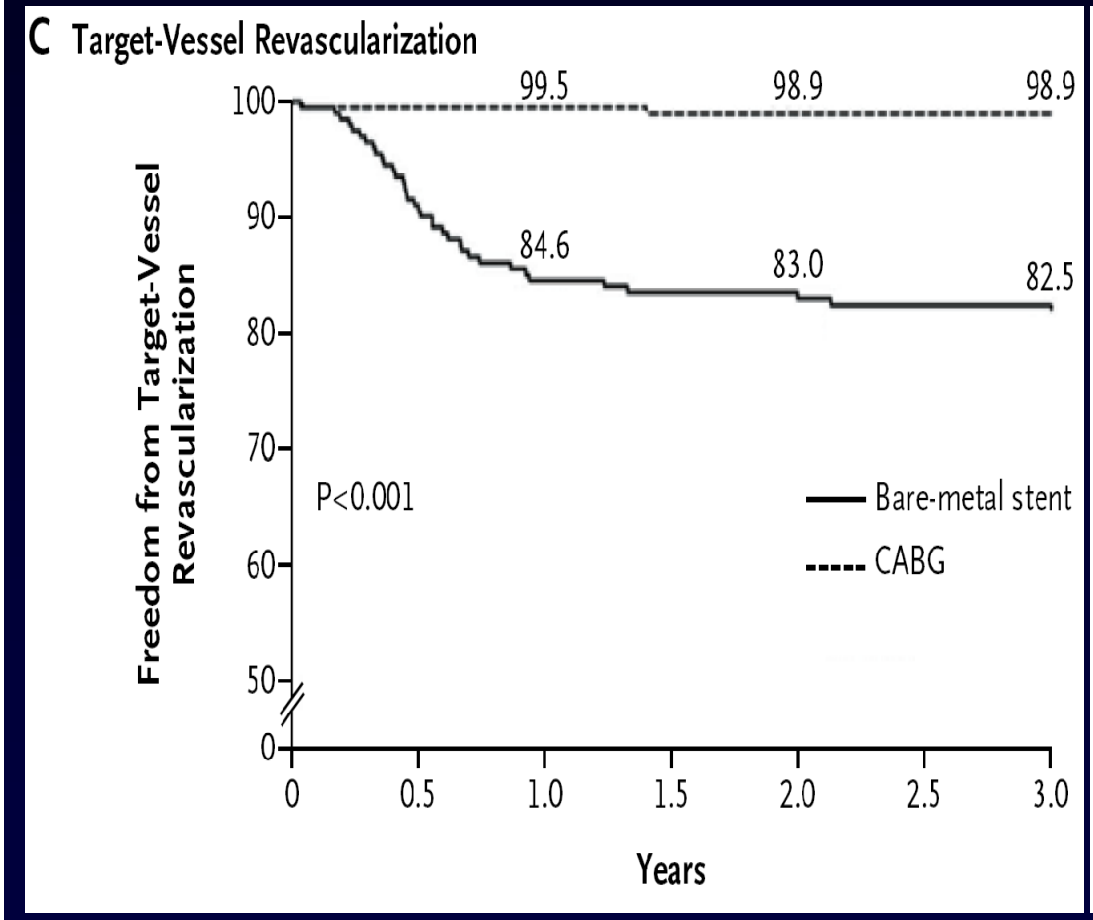
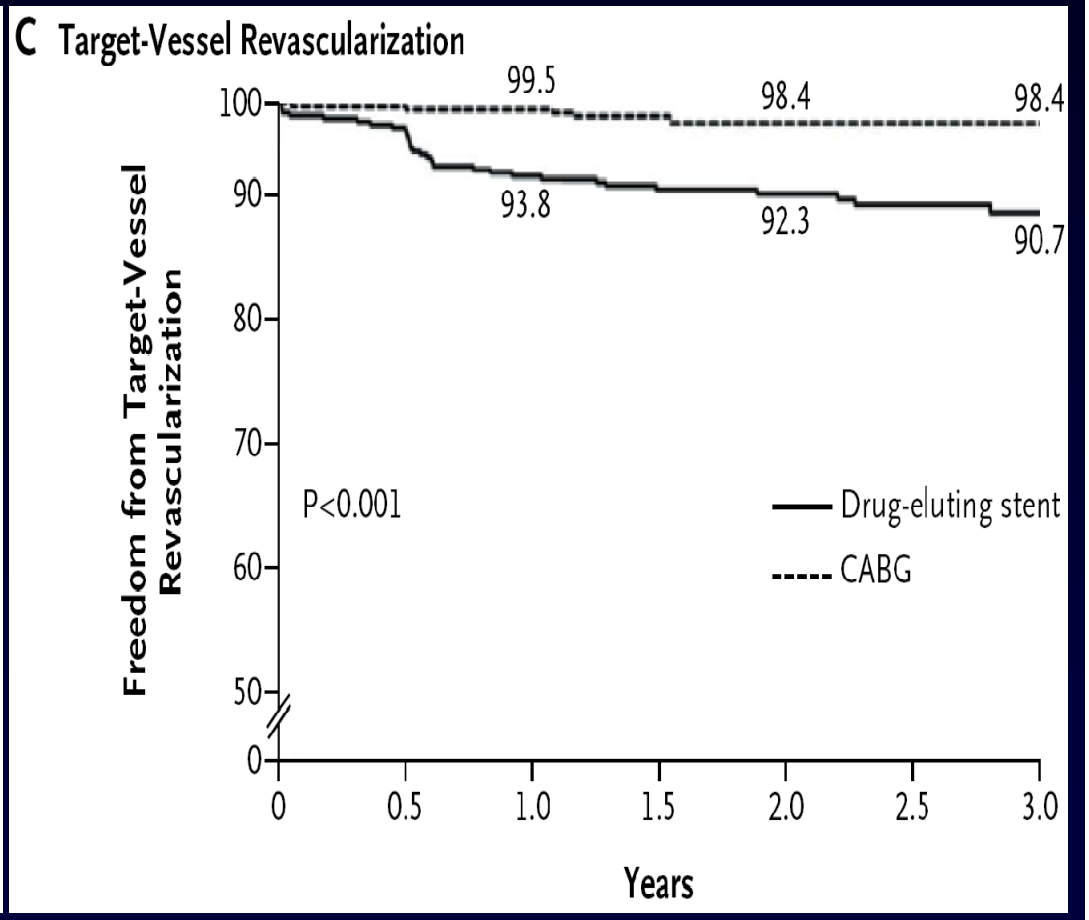




NEJM 2008;358

PCI in Left main CAD

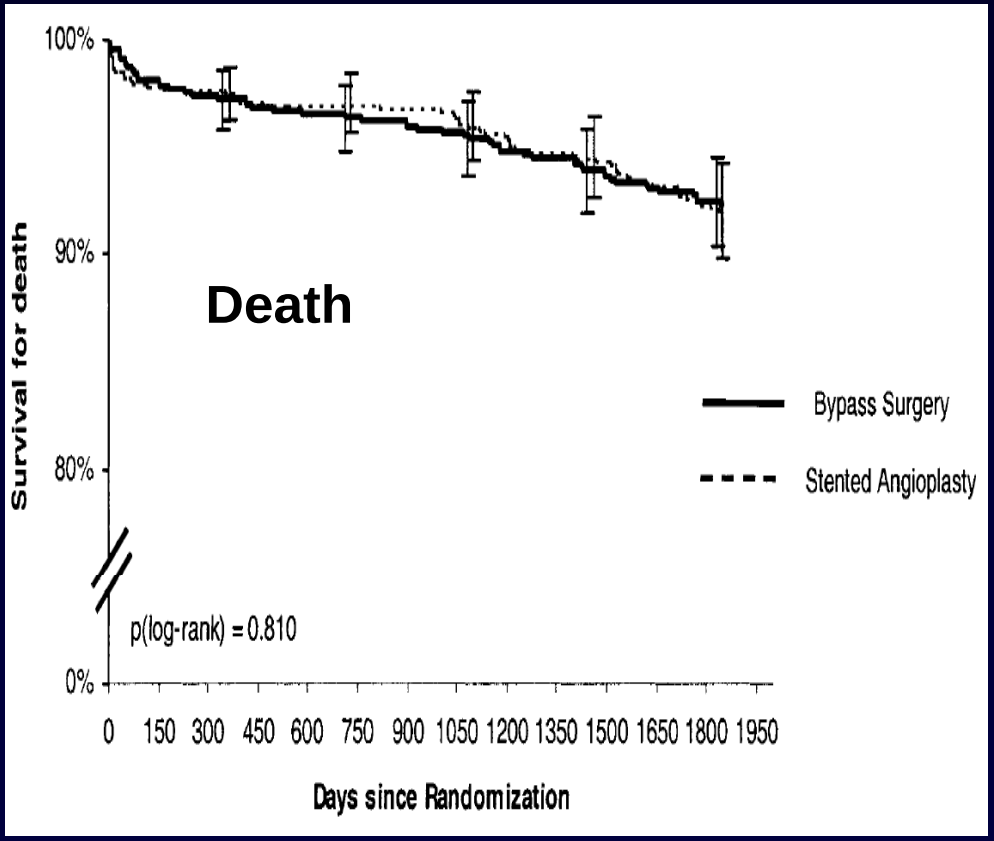
- PCI and CABG were associated with similar long-term rates of death and the composite end point of death, Q-wave myocardial infarction, or stroke.
- Rates of target-vessel revascularization were higher among patients who underwent PCI than among those who underwent CABG.

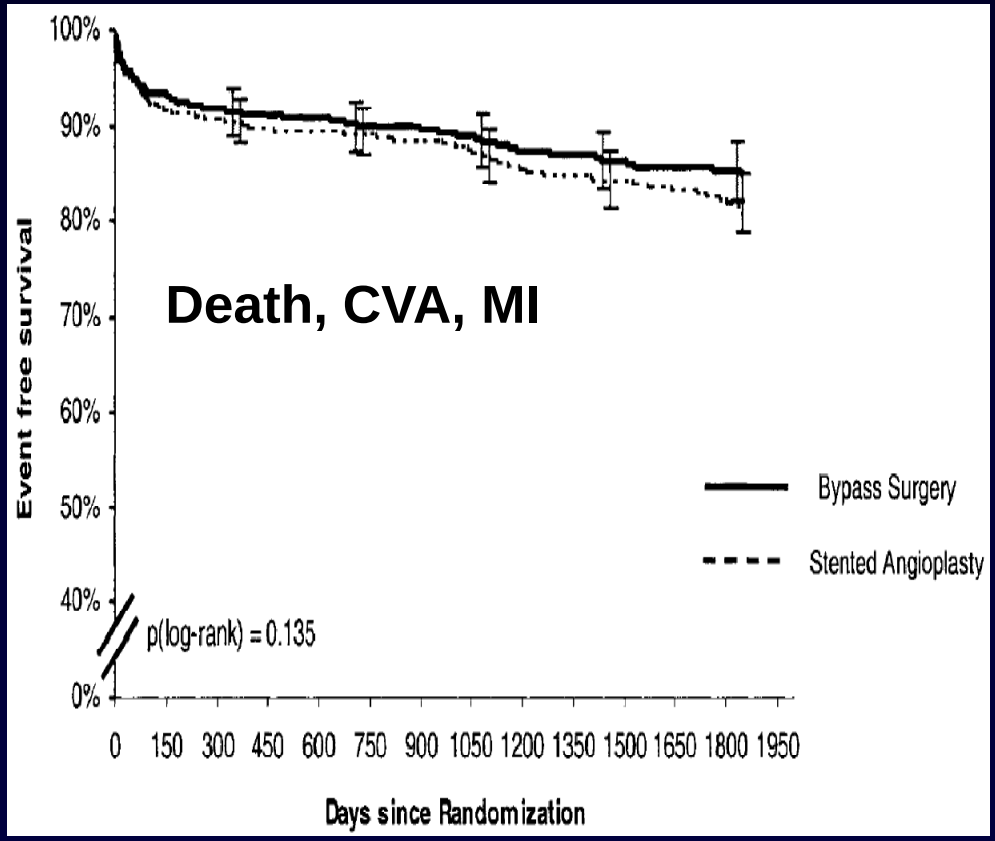
PCI vs CABG

- LM disease
- Multivessel disease
- Diabetes

Five-Year Outcomes After Stenting vs CABG for in Multivessel Disease : ARTS Randomized Trial

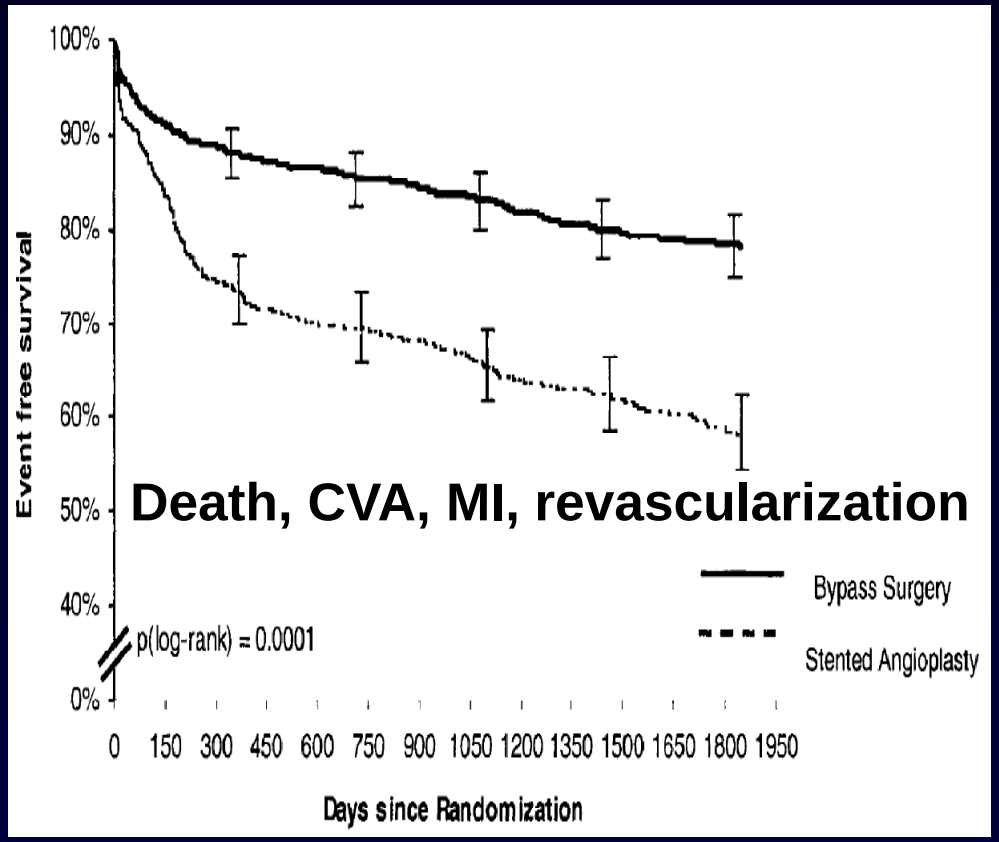
A total of 1,205 pts with the potential for equivalent revascularization were assigned to CABG (n= 605) or stent implantation (n= 600).

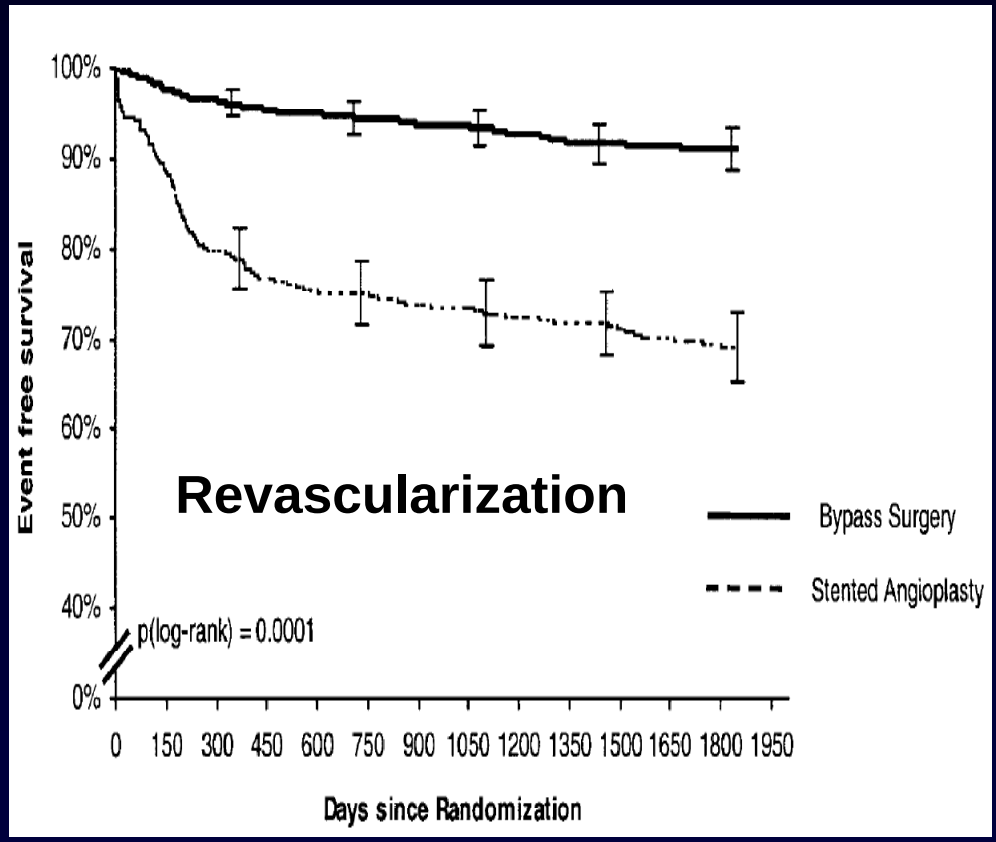




JACC 2005;46:575–81

Five-Year Outcomes After Stenting vs CABG for in Multivessel Disease : ARTS Randomized Trial

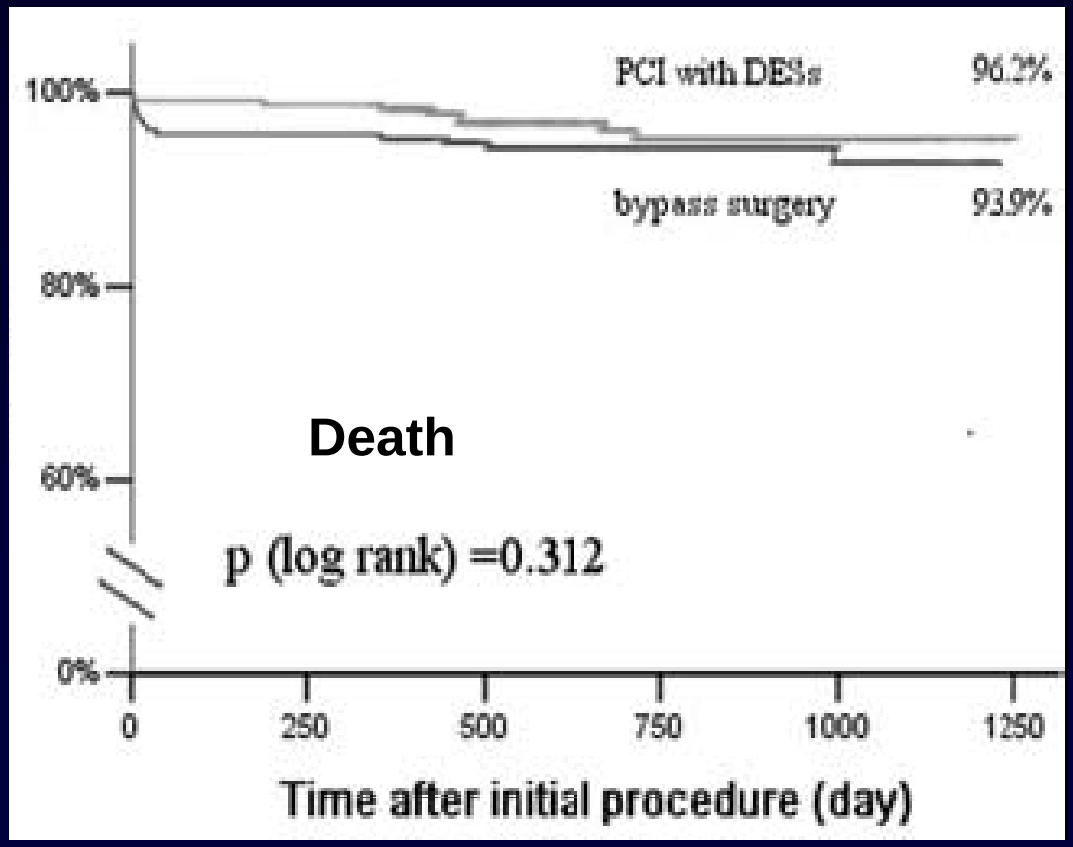


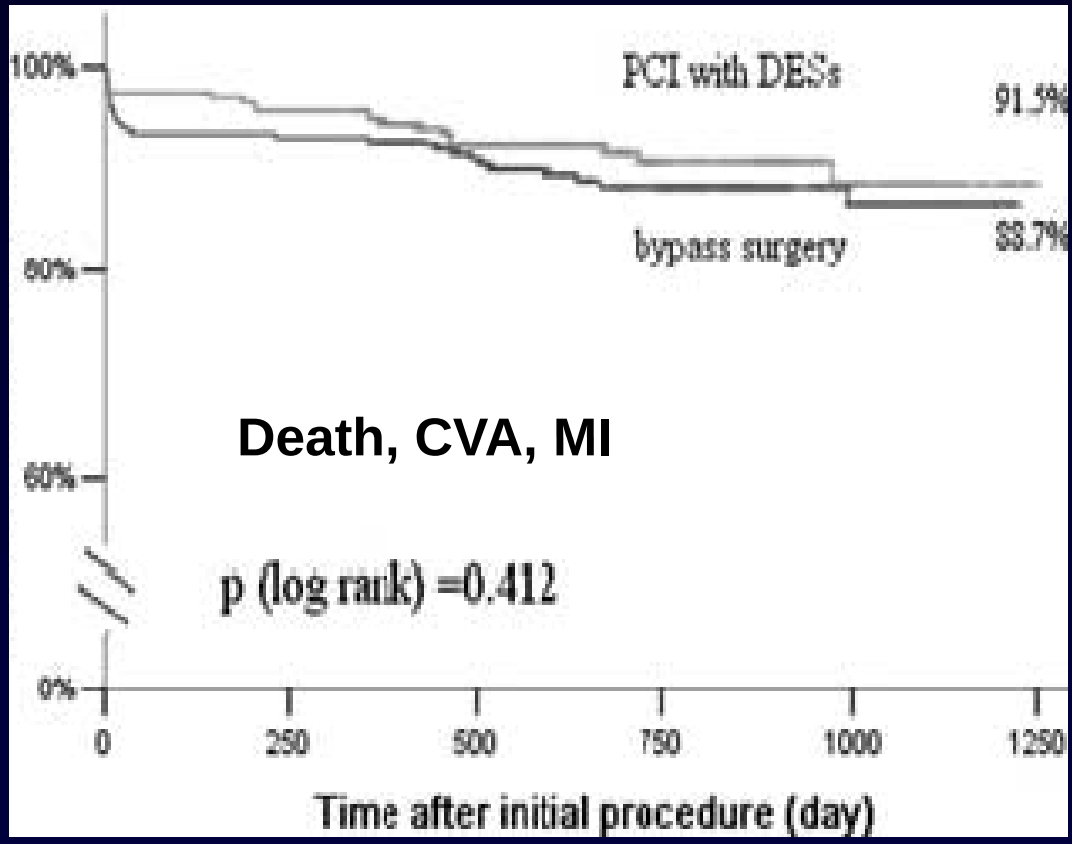


JACC 2005;46:575–81

CABG vs PCI with DES Implantation in Patients with MVD

A total of 466 consecutive patients with MVD underwent revascularization, 235 by PCI with DES and 231 by CABG.





J Interven Cardiol 2007;20:10–16

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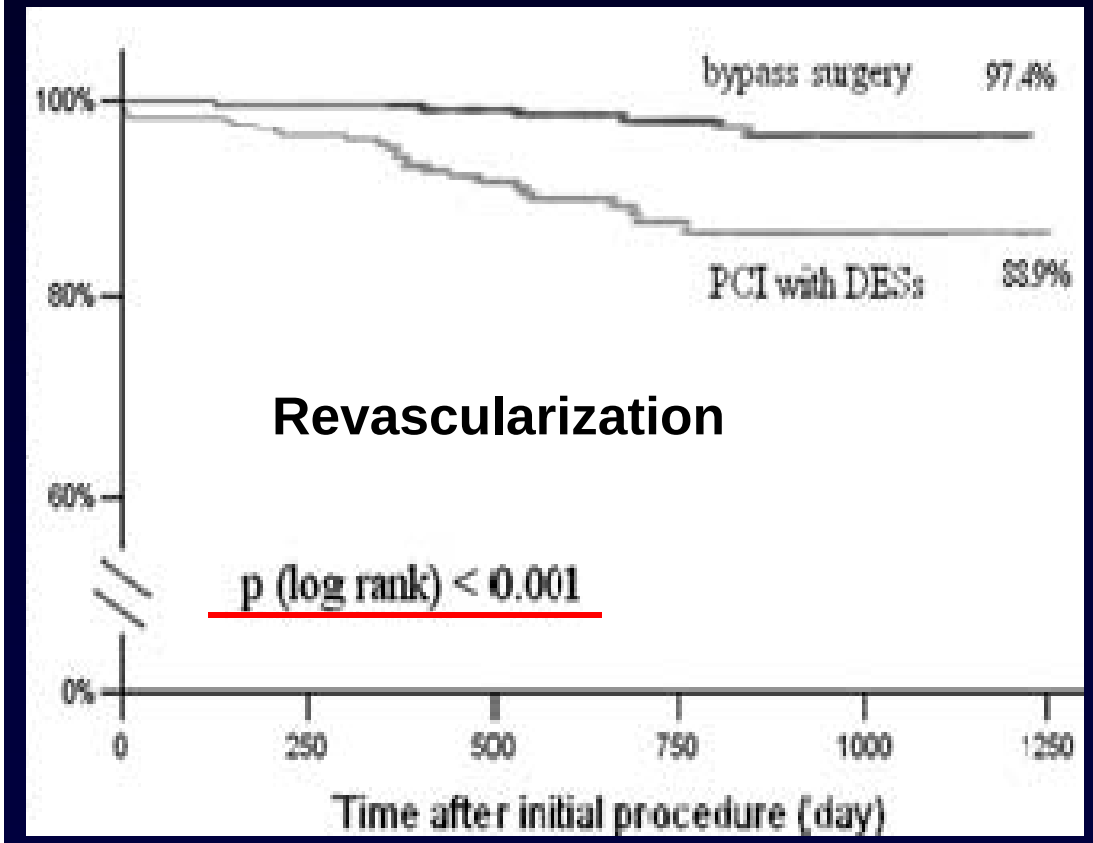
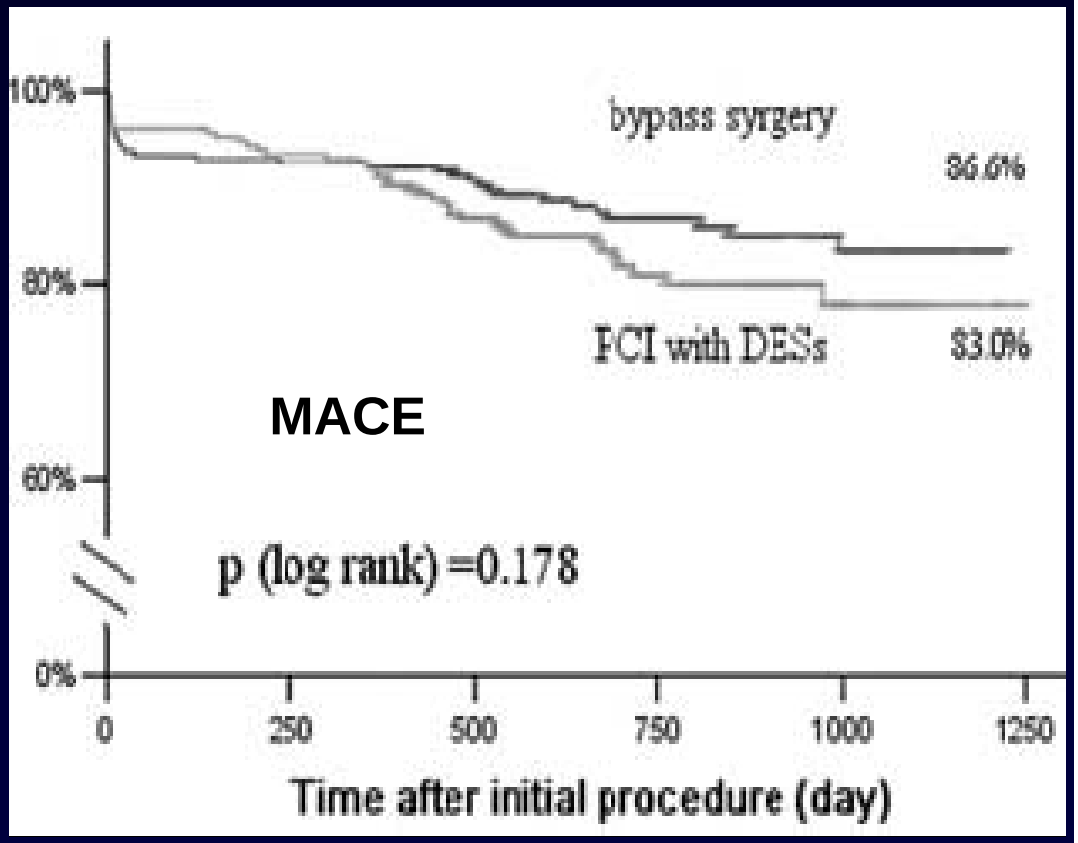




J Interven Cardiol 2007;20:10–16

PCI in Multivessel CAD

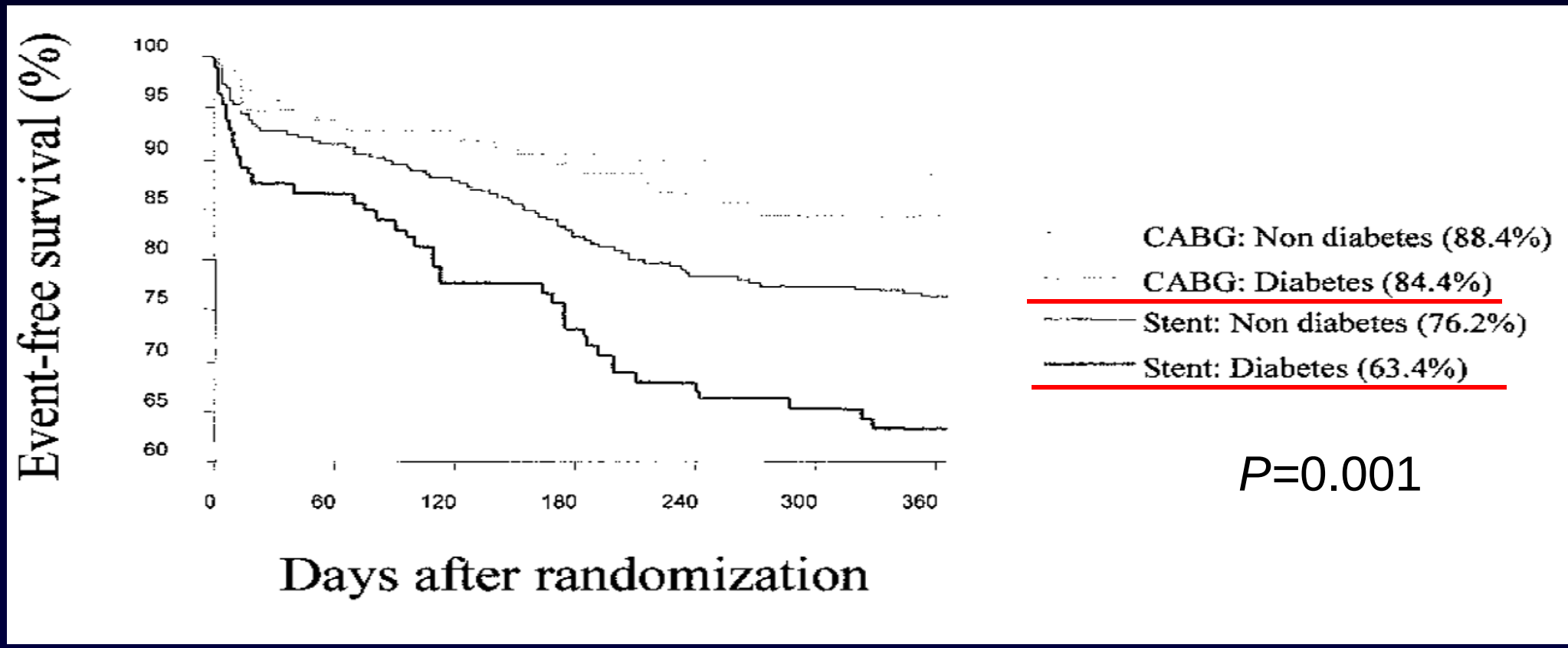
- There was no difference in mortality, stroke, MI between stenting and surgery for multivessel disease.
- However, overall MACE was higher in the stent group, driven by the increased need for repeat revascularization.
- The reintervention gap was further narrowed in the era of DES.

PCI vs CABG

- LM disease
- Multivessel disease
- Diabetes

Impact of DM on PCI and Surgery of MVD : Coronary Disease Patients : ARTS Trial

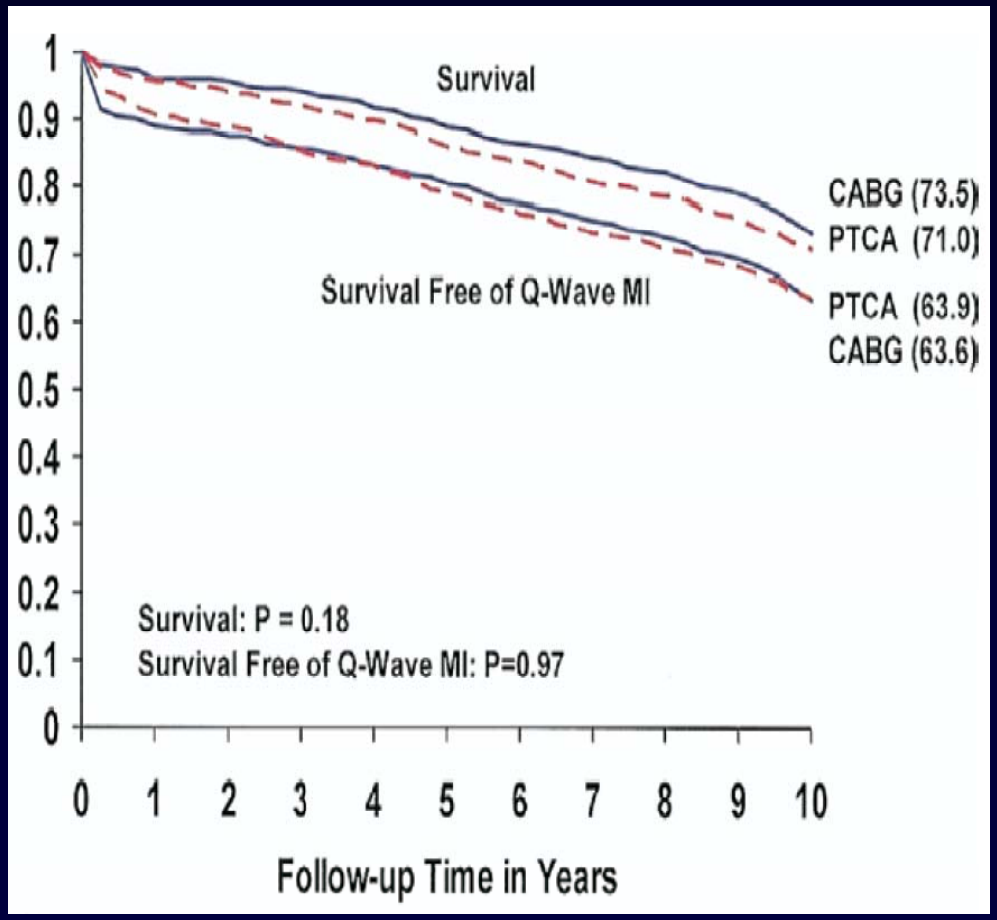
Patients (n=1205) were randomly assigned to stent implantation (n=600; diabetic, n=112) or CABG (n=605; diabetic,n= 96). F/U 1 yrs.

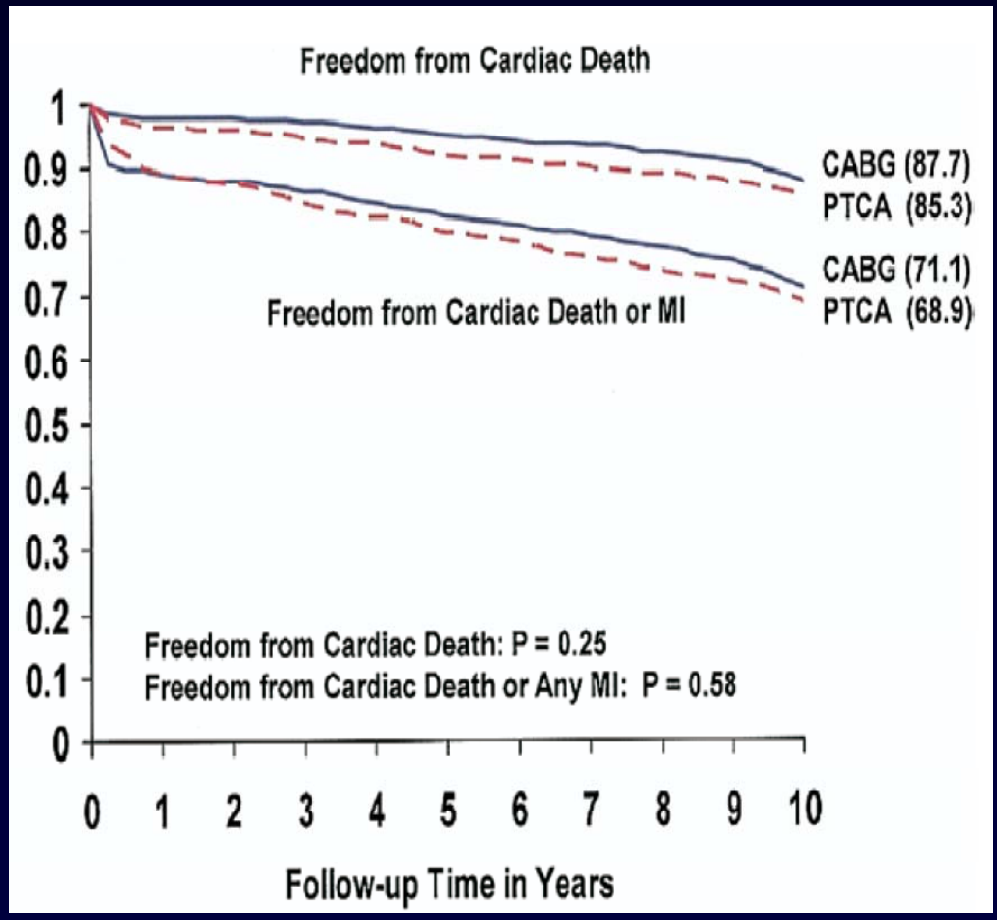


Circualtion 2001;104:533–8

Final 10-Year Follow-Up Results From the BARI Randomized Trial

Symptomatic patients with multivessel CAD (n=1,829) were randomly assigned to initial treatment with PTCA or CABG. F/U : mean 10.4 yrs

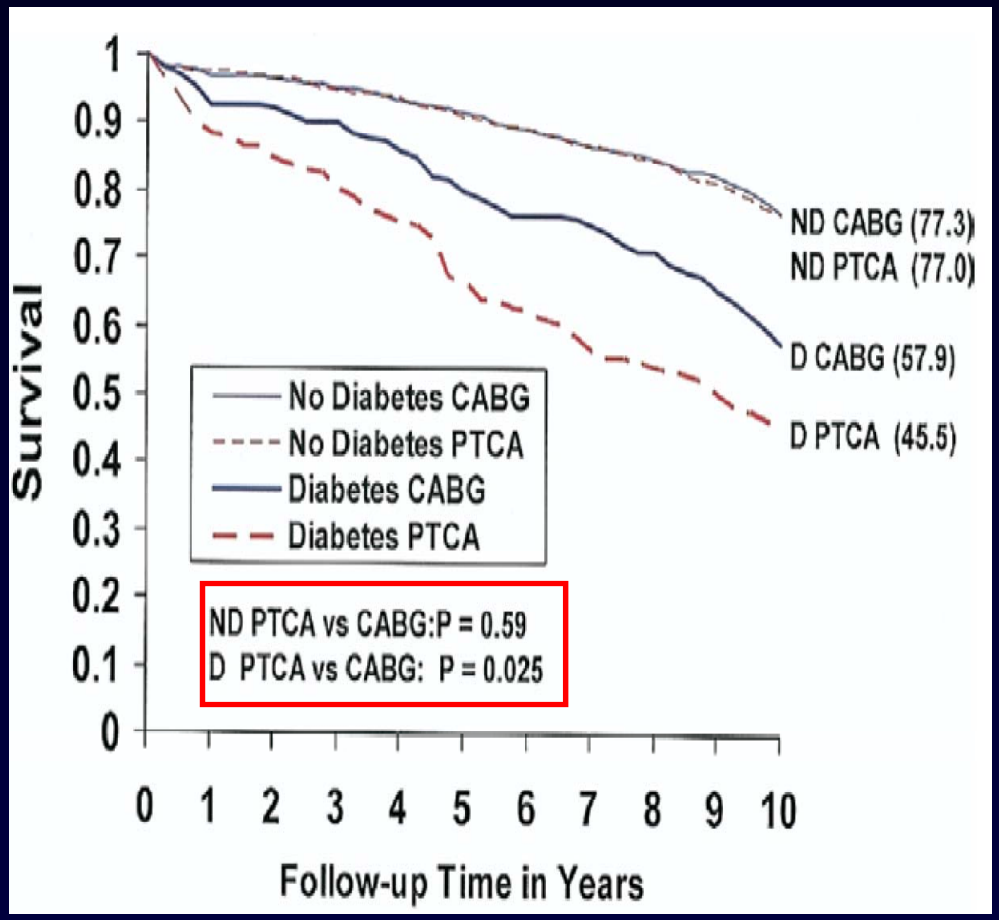


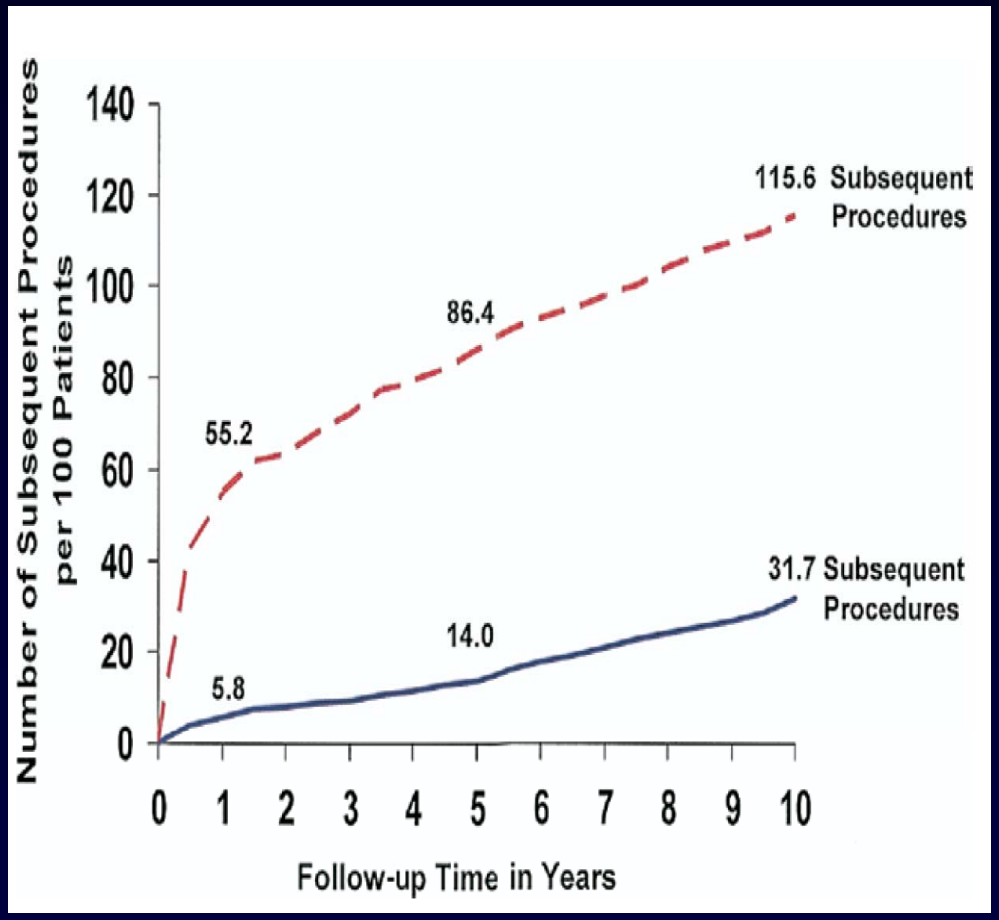


JACC 2007;49:1600–6

Final 10-Year Follow-Up Results From the BARI Randomized Trial :

In the subgroup with treated diabetes

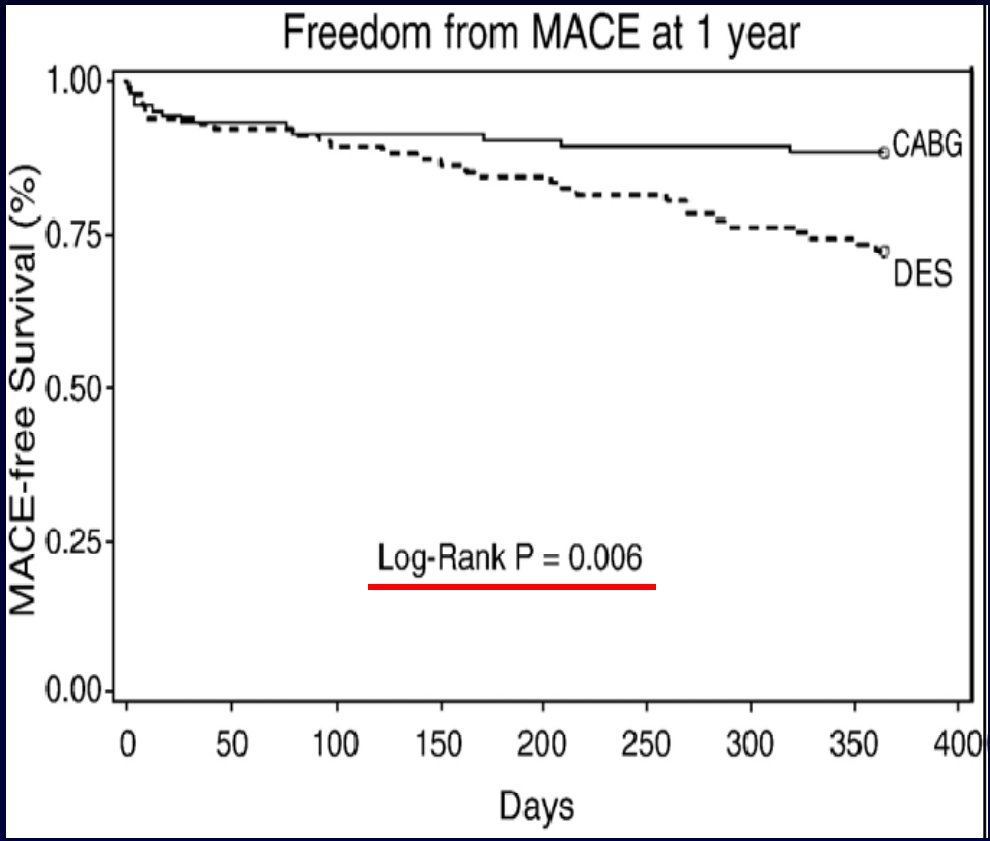




JACC 2007;49:1600–6

Comparison of bypass surgery with DES for diabetic patients with multivessel disease

A total 205 consecutive diabetic patients who underwent either CABG (n=103) or DES (n=102) were included. F/U duration : 12 months



One-year outcomes

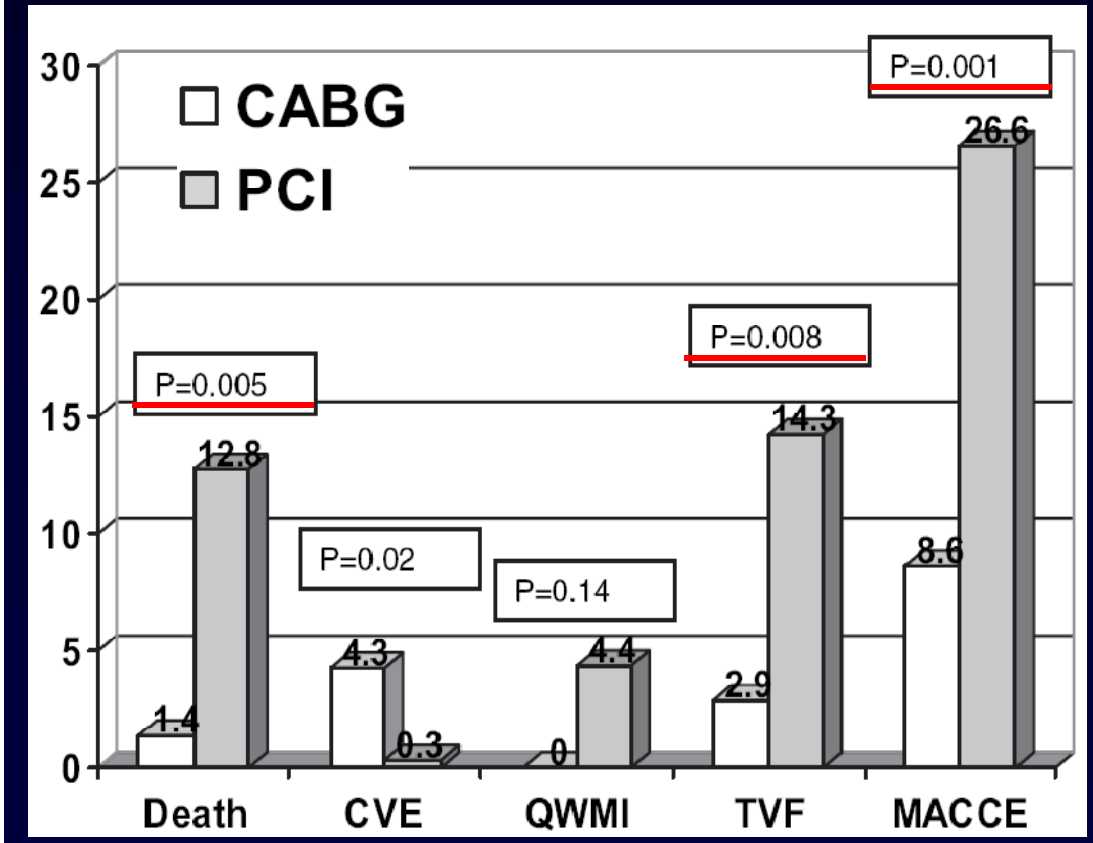
	CABG $n=103$	DES $n=102$	p-value
MACE (%)	12	27	0.006
Death (%)	8	10	0.6
Myocardial infarction[a] (%)	2	8	0.1
Repeat revascularization (%)	3	20	<0.001
Stroke (%)	4	0	0.04

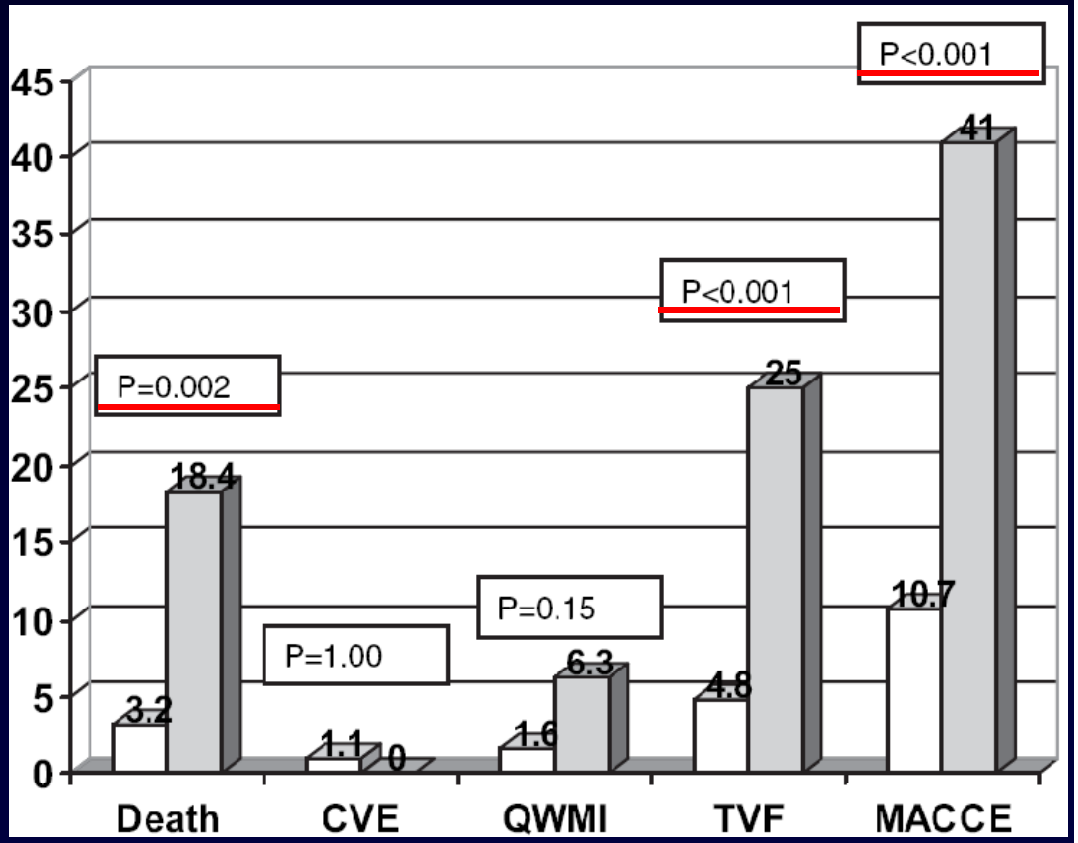
Int J Cardiol 2007;123:34–42

Outcomes of CABG vs PCI With DES for Patients With Multivessel CAD

A total of 1680 pts undergoing revascularization for multivessel CAD were identified. Of these, 1080 patients were treated for 2-VD (196 CABG and 884 PCI) and 600 for 3-VD (505 CABG and 95 PCI).

Clinical 12-month outcomes for 2- and 3-vessel CAD with DM





Circulation 2007;116:200–6

PCI in Diabetes

- Among patients with treated diabetes, CABG conferred long-term survival benefit.
- Although DES use has greatly reduced restenosis and TLR, outcomes associated with these stents in diabetics are still inferior to CABG.

Guideline recommendations for the Treatment of CAD

- **Optimal medical Tx should be given to all CAD patients**
  - √ BP control to < 140/90 mmHg
  - √ Statin drugs, unless contraindication, to target LDL < 100 mg/dL
  - √ Aspirin and /or clopidogrel
  - √ Post-MI patient : beta-blockers titrated to BP and HR control
  - √ LVEF < 0.40 : ACE-I

Primary classification of CAD patient in need of revascularization

- Stable versus unstable myocardial ischemia and symptoms
- AMI : STEMI or NSTEMI
- Stable versus unstable hemodynamics
- ‘Medically refractory’
- Serious comorbidity can assume primary importance

Strengths and weakness of PCI vs CABG

PCI

Advantages

- Less morbid than CABG
- More rapid reperfusion in ACS

Disadvantages

- Less 'control' than CABG
- Restenosis
- Cannot revascularization many chronic totals (CTO)

CABG

Advantages

- Complete revascularization
- More durable results, especially with arterial conduits

Disadvantages

- Morbidity of G/A
- Morbidity of intubation and mechanical ventilation
- Morbidity and mortality of heart-lung bypass
- Morbidity and mortality of sternotomy, pericardiotomy thoracotomy

Conclusions

- **Medical therapy** are the primary options for stable, low-risk CAD, and should be given to all CAD patients.
- **PCI** is the acute stabilization method of choice for patients with on-going ischemia and acute MI, especially among patients with hemodynamic compromise, and/or major comorbidity.
- **CABG** continues to be the complete revascularization option for patients with multivessel, multi-lesion CAD, diabetes.

Thank you for attention !

Potential benefits of PCI : Trials showing benefits vs medical therapy

Relieve stable ischemia

- ACME, RITA-2, ACIP
- TIME

Relieve unstable ischemia (ACS)

- TIMI-IIIb
- VANQWISH, RRISC-II, TACTIC TIMI-18
- RITA-3
- AWESOME
- PAMI, GUSTO IIb, Mayo, PRAGUE etc

Improved functional capacity

- ACME

Improved ventricular Fx

- None

Prevent MI

- None

Prolong life in stable patients

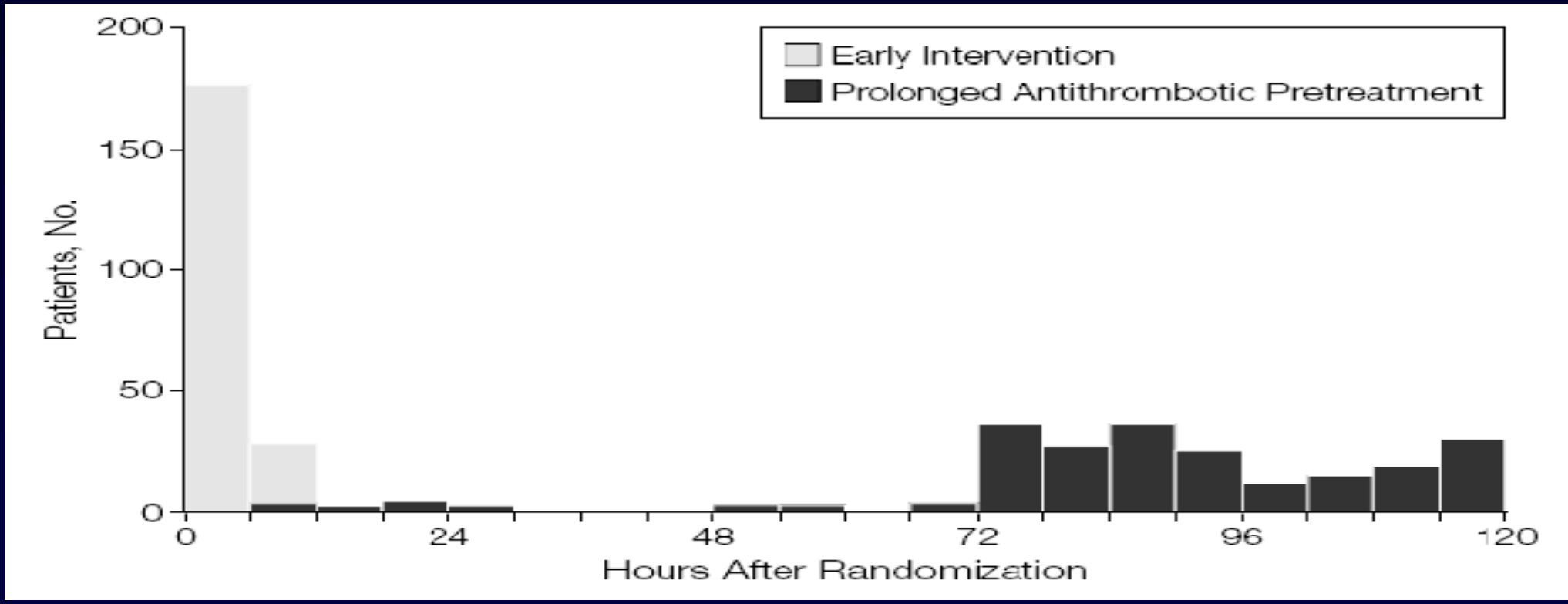
- None

Prolong life in unstable Pts

- FRISC-II, TACTICS TIMI-18
- RITA-3
- PAMI, GUSTO IIb, Mayo, PRAGUE, etc

Prolonged Anti-thrombotic Pretreatment ("Cooling-Off" Strategy) Before PCI in Patients with ACS : ISAR-COOL

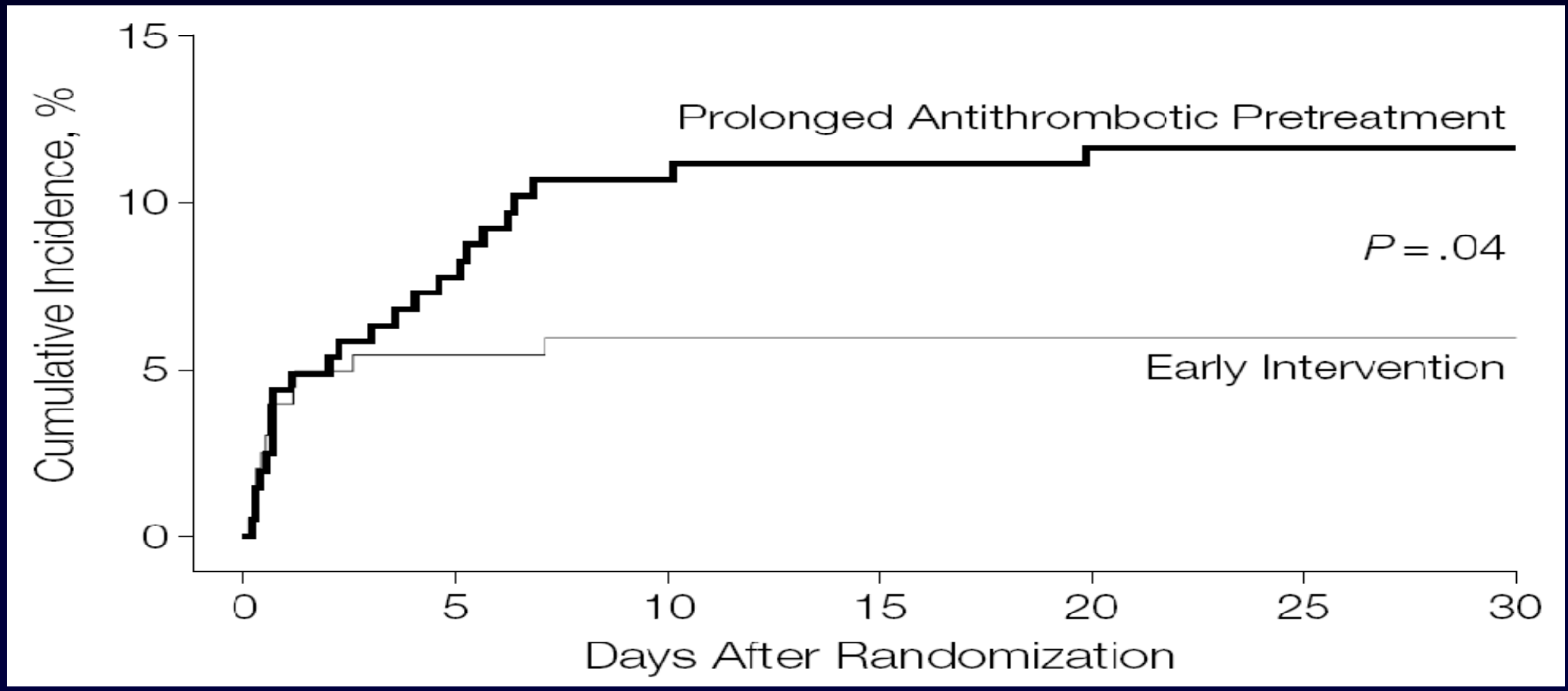
Patients were randomly allocated to antithrombotic pretreatment for 3 to 5 days or to early intervention after pretreatment for less than 6 hours. (prolonged Anti-thrombotic pretreatment; n=207, early intervention; n=203)



JAMA 2003;290:1593–99

Prolonged Anti-thrombotic Pretreatment ("Cooling-Off" Strategy) Before PCI in Patients with ACS : ISAR-COOL

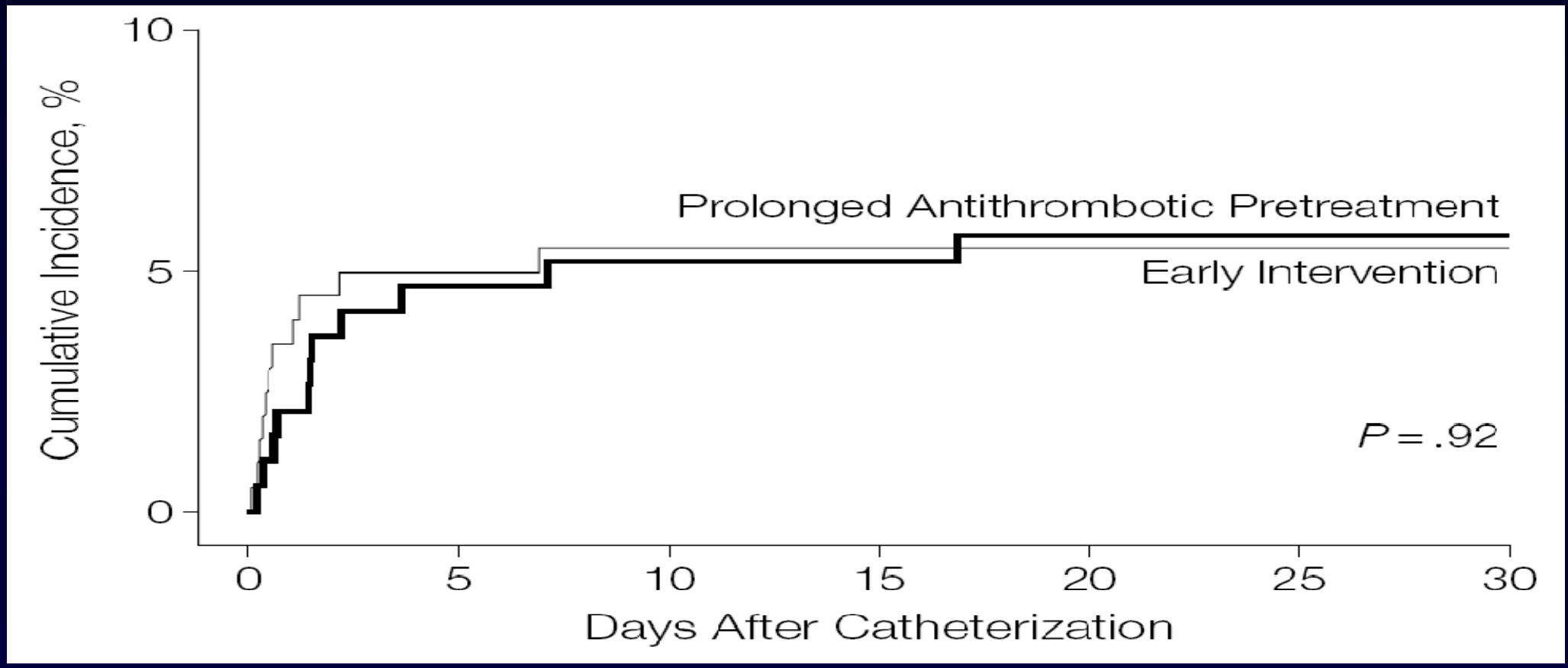
Death and Myocardial Infarction at 30 Days



JAMA 2003;290:1593–99

Prolonged Anti-thrombotic Pretreatment ("Cooling-Off" Strategy) Before PCI in Patients with ACS : ISAR-COOL

Death and Myocardial Infarction at 30 Days After Catheterization



JAMA 2003;290:1593–99

Primary PCI in Acute Myocardial Infarction

Primary PCI vs thrombolysis for STEMI

PTCA Versus Medical Therapy for Stable Angina Pectoris : ACME

Change of Thallium-201 Myocardial Perfusion Image Score From Baseline to 6-Month Follow-Up

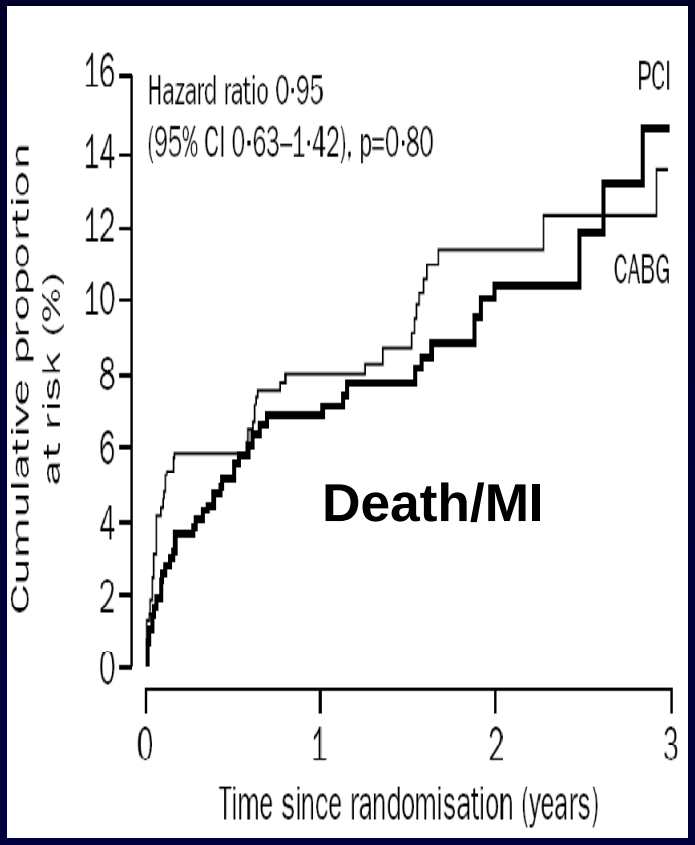
	Medical (groups 1a+1b+2a+2b) (n = 127)	PTCA		
		Groups 1a+1b (n = 91)	Group 2a (n = 22)	Group 2b (n = 17)
Better	67 (51%)	70 (77%)*	13 (59%)	4 (24%)
No change	35 (27%)	12 (13%)*	2 (13%)	8 (47%)
Worse	28 (22%)	9 (10%)*	7 (32%)	5 (29%)

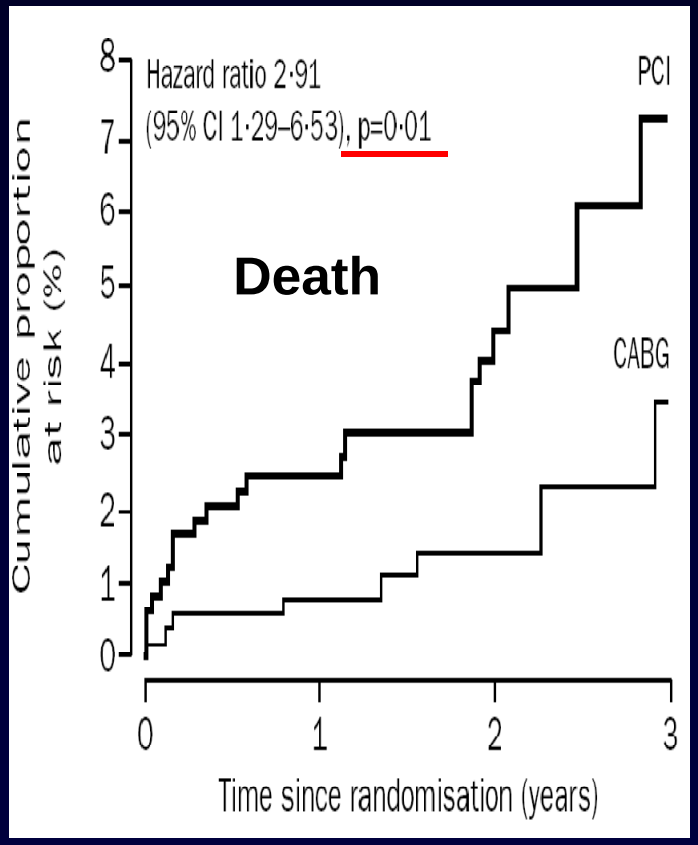
*p < 0.003 versus medical treatment.

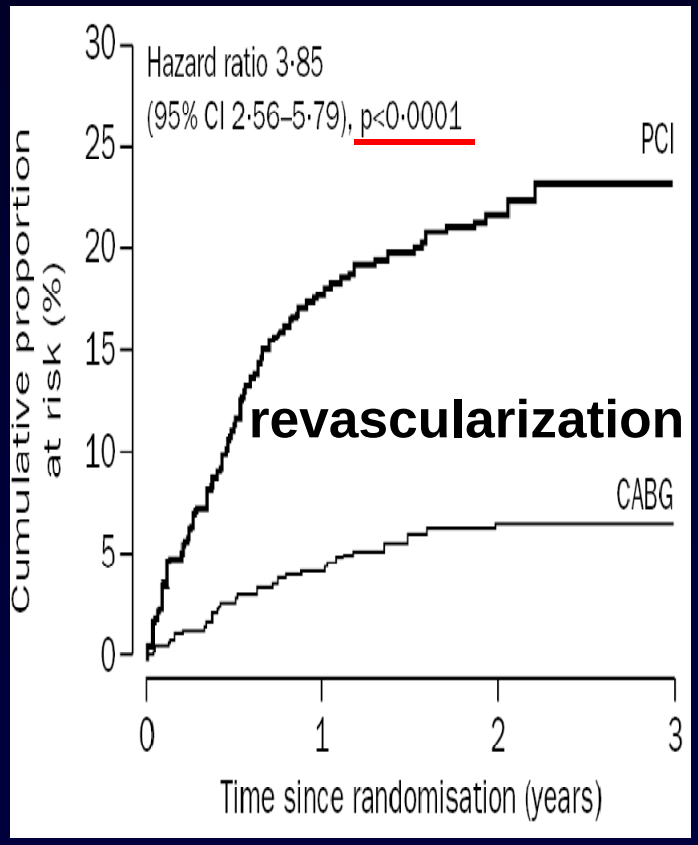
JACC 1997;29:1505–11

CABG vs PCI with stent in patients with multivessel CAD : SOS trial

Symptomatic patients (n=988) with multivessel CAD were randomised to CABG (n=500) or stent-assisted PCI (n=488). Median F/U; 2 yrs







Lancet 2002;360:965–70

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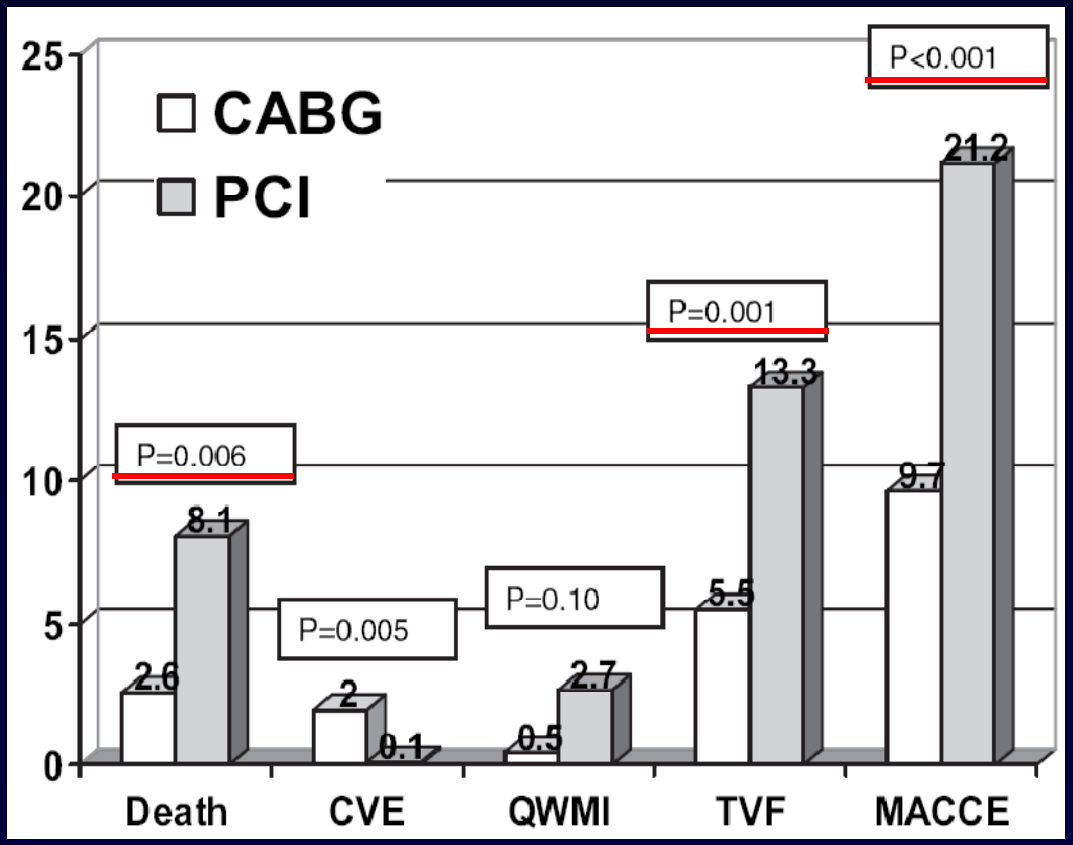
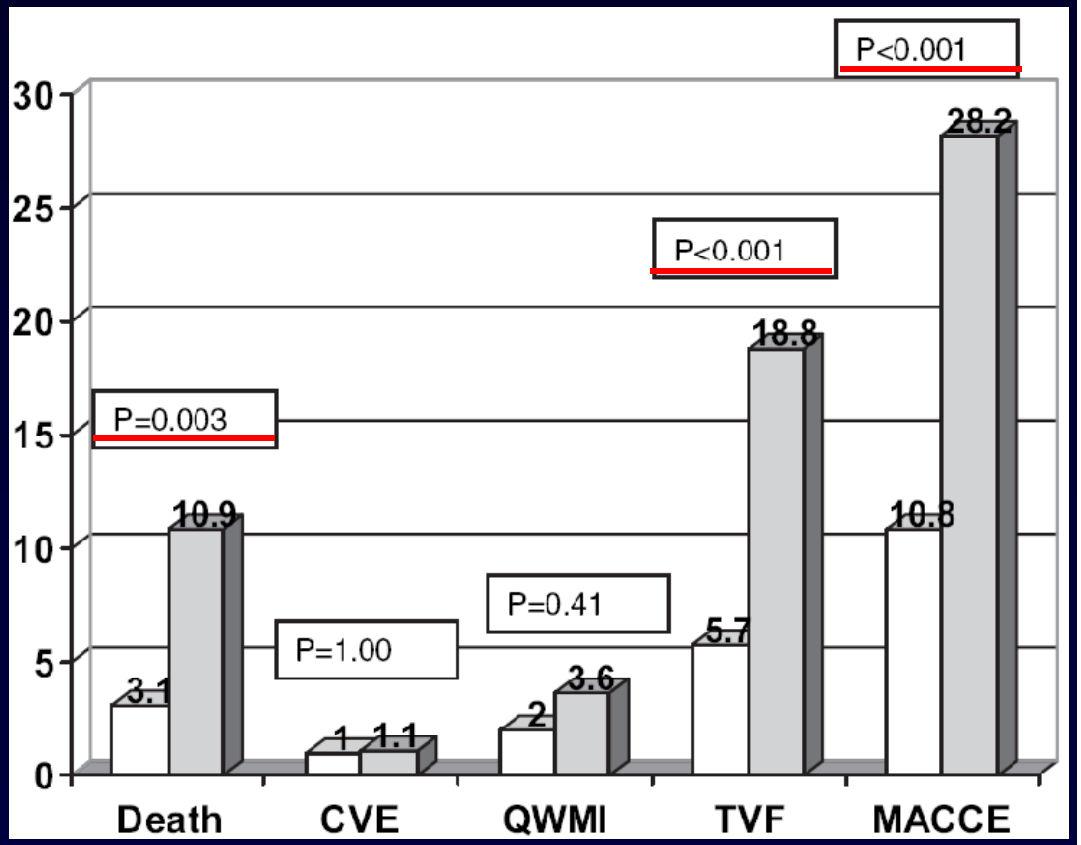
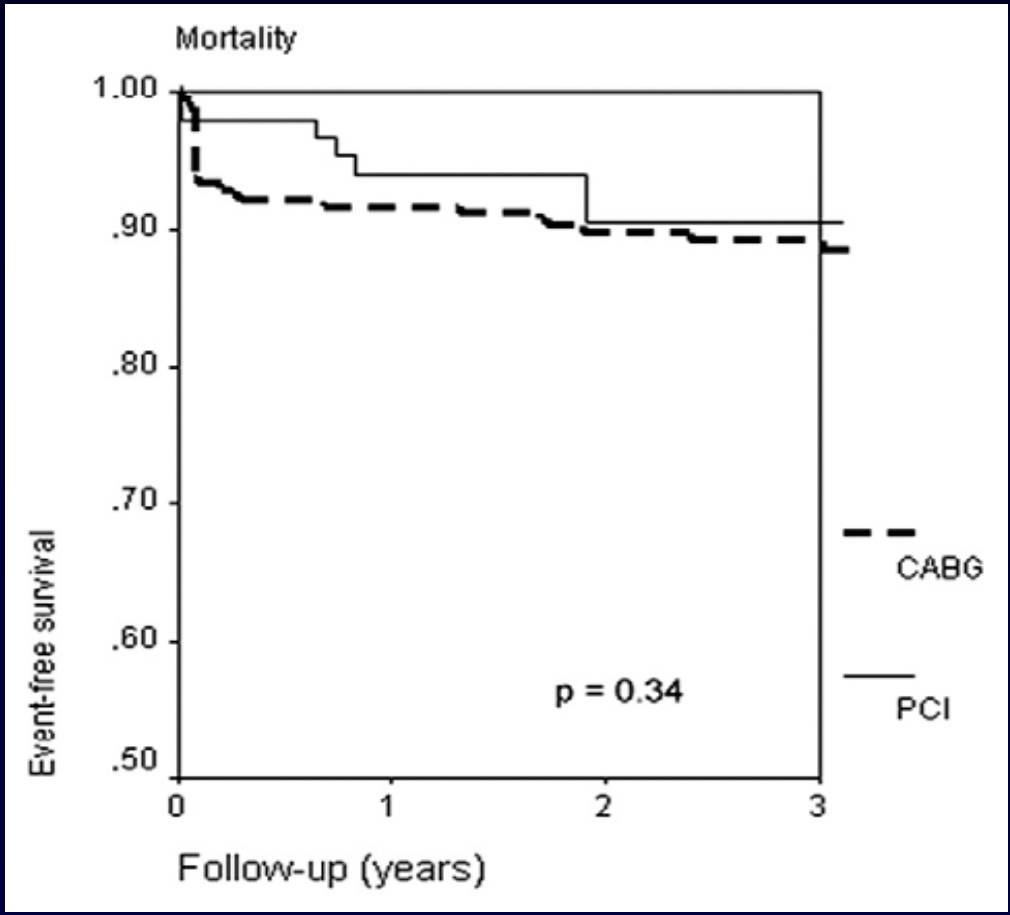


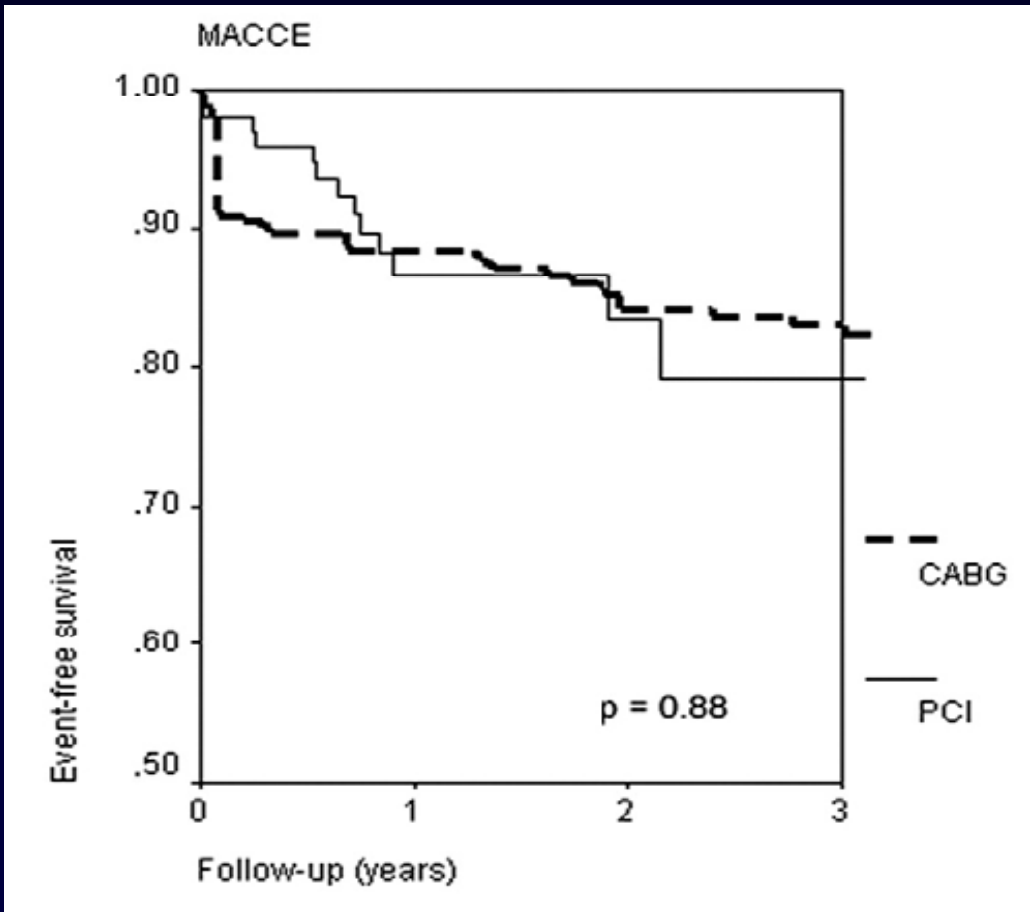


Circulation 2007;116:200–6

Comparison of DES Versus Surgery for Unprotected Left Main CAD

A total of 96 patients with significant unprotected left main disease were treated with DES (1.3 y), and 245 with bypass surgery (3.2 y)





AJC 2007;100:970–3

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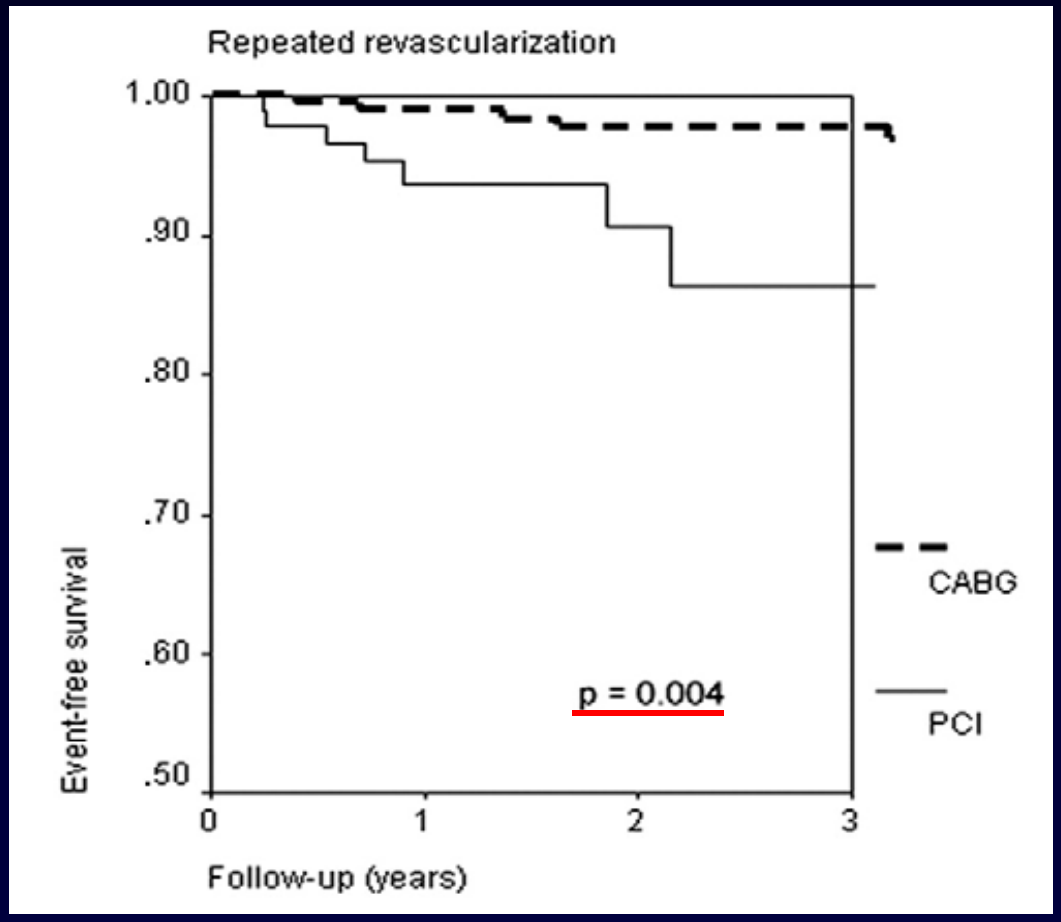

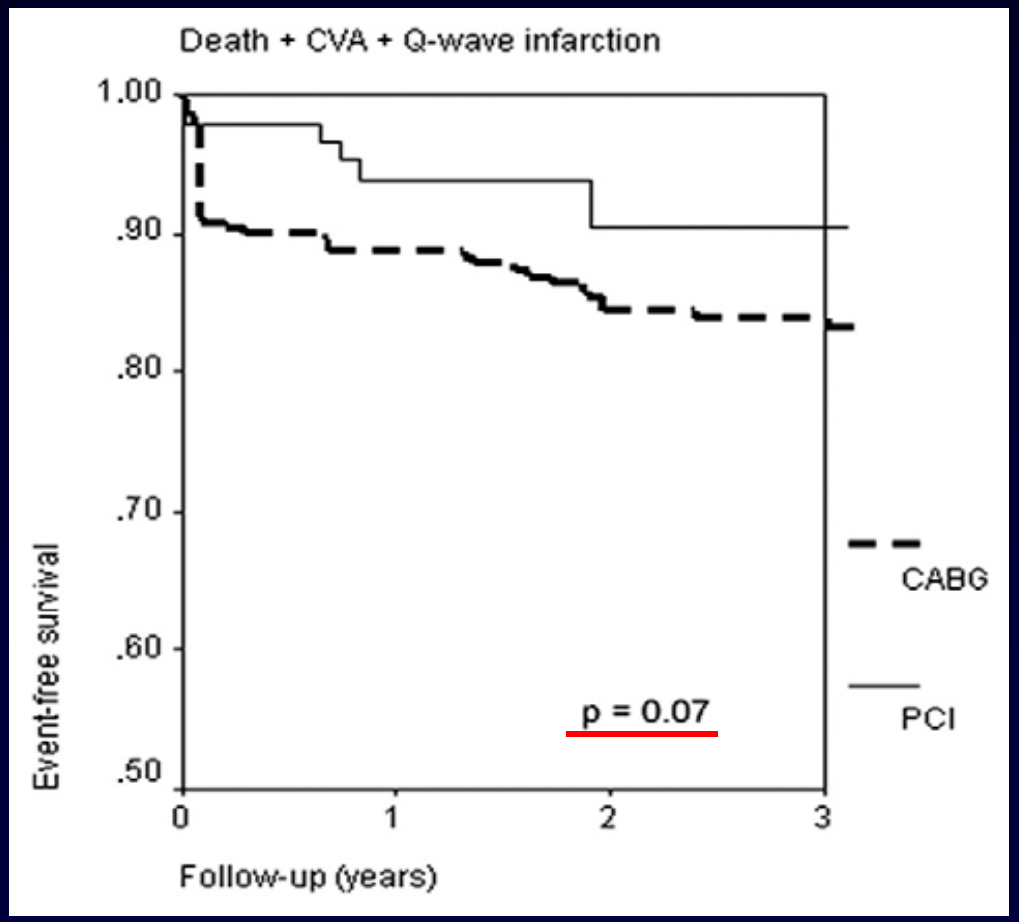

AJC 2007;100:970–3