Is bypass surgery needed for elderly patients with left main coronary artery disease?

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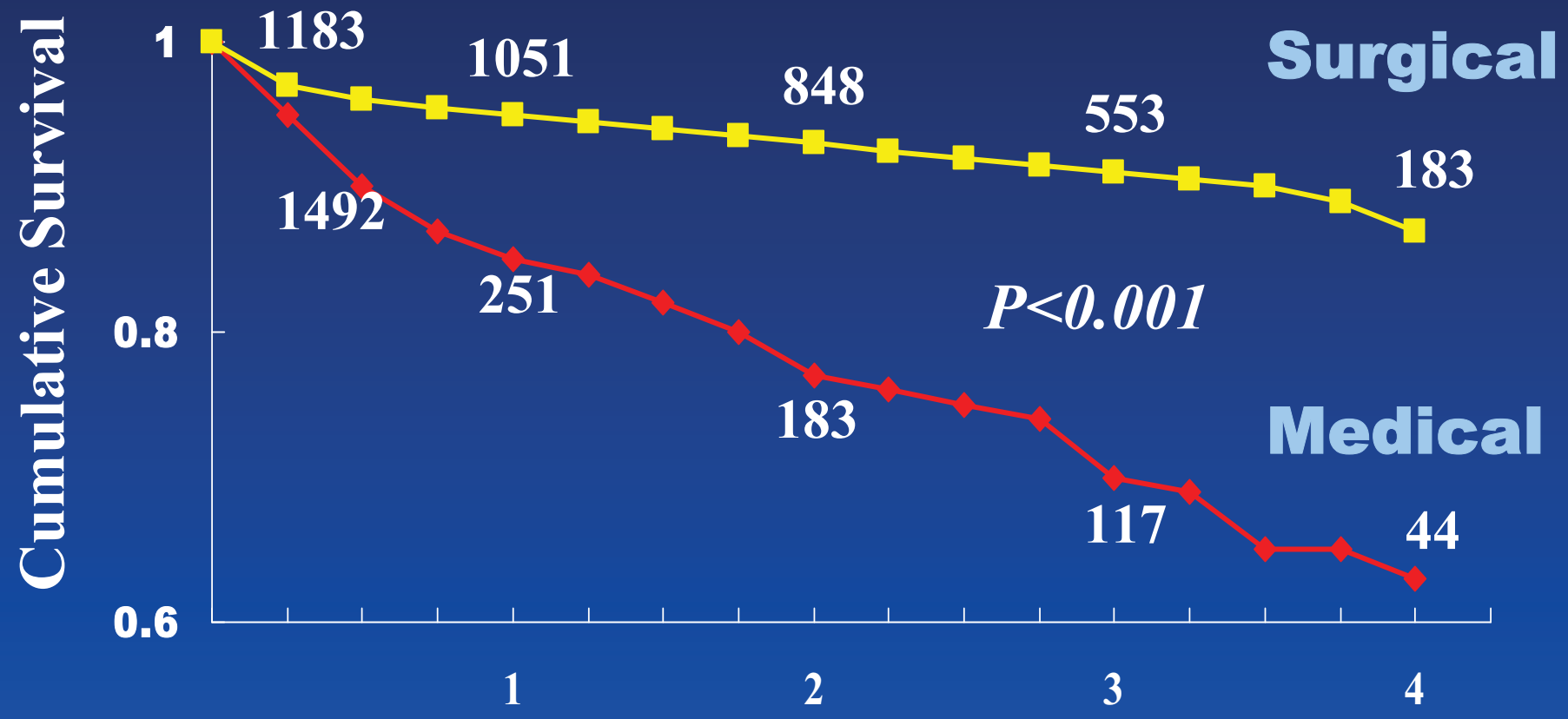
CASS

Left Main Coronary Disease
Cumulative Survival



Chaitman ER, AJC 48:765-77, 1981

I agree,

CABG has been a standard treatment modality for patients with LMCA stenosis.

However,

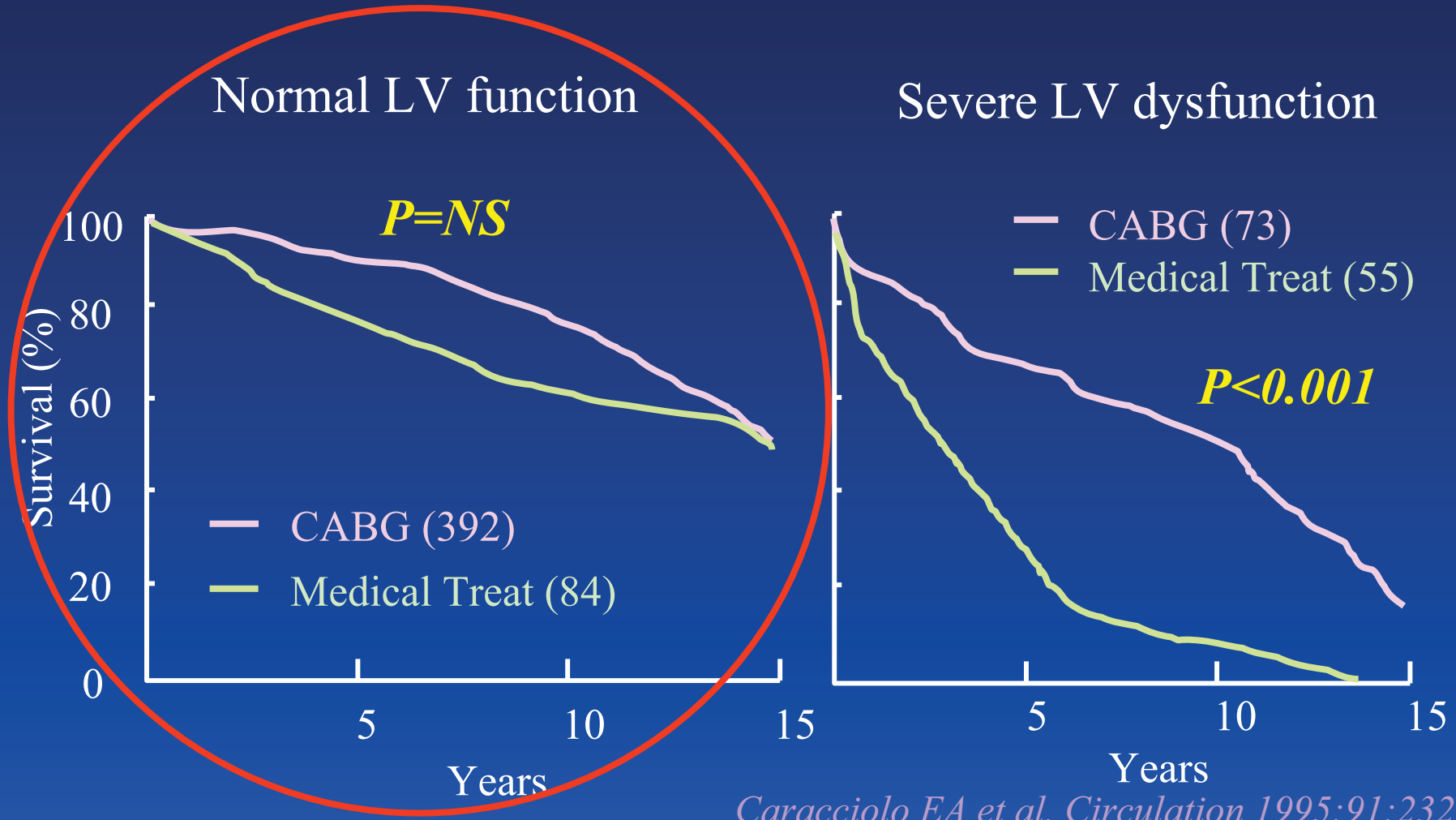
No data available to compare the risks and benefits of the elective stenting and surgery

Left Main Coronary Disease

CASS

Depending on LV function

Cumulative Survival



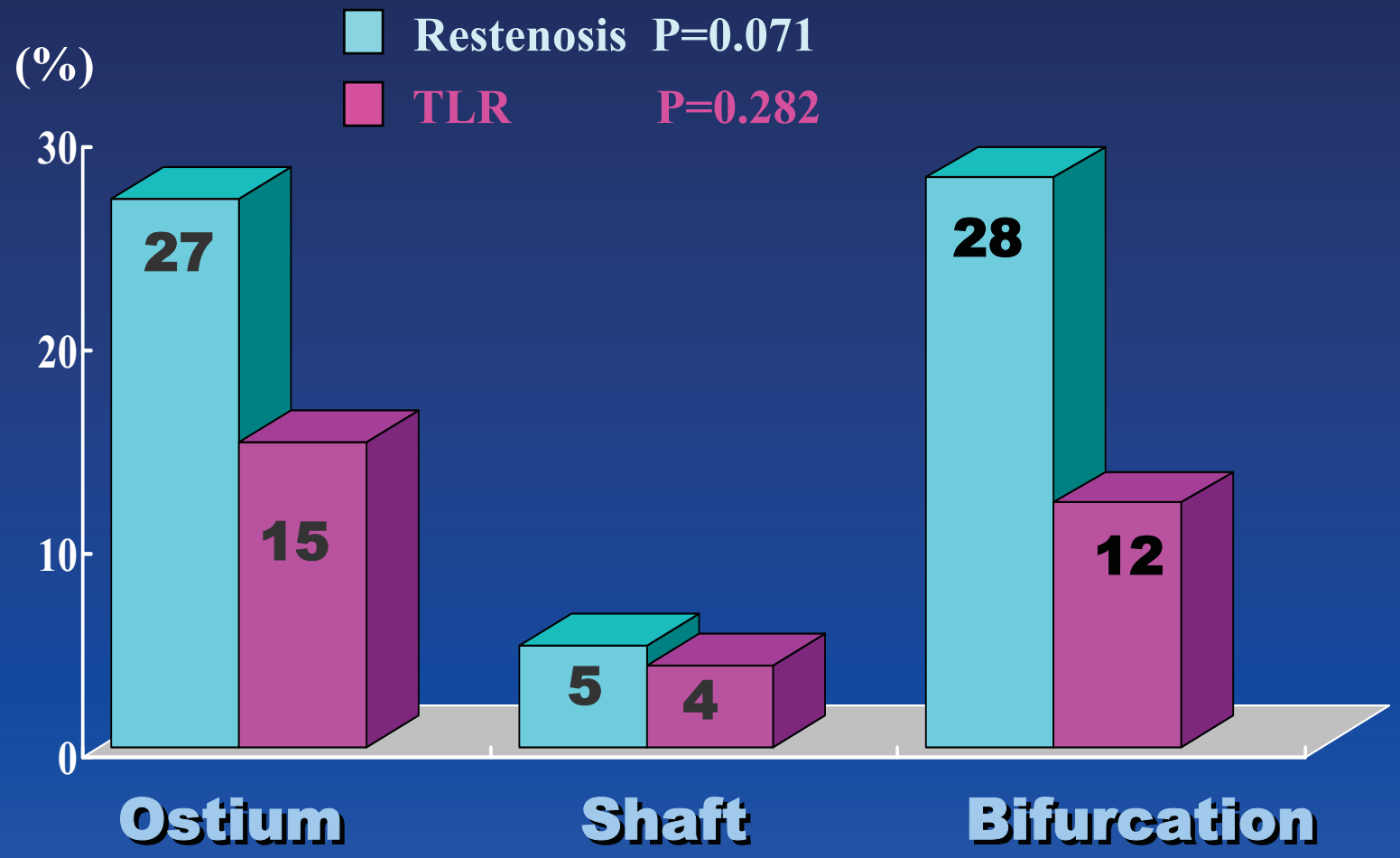
Caracciolo EA et al. Circulation 1995;91:2325

Surgery,

Did not have any survival benefit in the group of patients with normal LV function

Unprotected Left Main Stenting

Restenosis Rate & TLR at overall



Elective stenting ,

We have data about unprotected left main stenting in patients with normal LV function

Japan-Korea Multicenter Registry Data

Clinical Outcome

Procedural Success Rate: 99%

In-Hospital Complications (n=280)

Acute closure	0
Subacute thrombosis	3 (1.1%)
Death	0
Q-MI	3 (1.1%)
Emergent CABG	3 (1.1%)

Park SJ, Am J Cardiol 2003;

Japan-Korea Multicenter Registry Data

6 month Angiographic Restenosis Rate

Angiographic follow-up rate:
247 / 280 eligible patients (88.2%)

51/247 (20.6%)

Park SJ, Am J Cardiol 2003;

AMC Data 2003

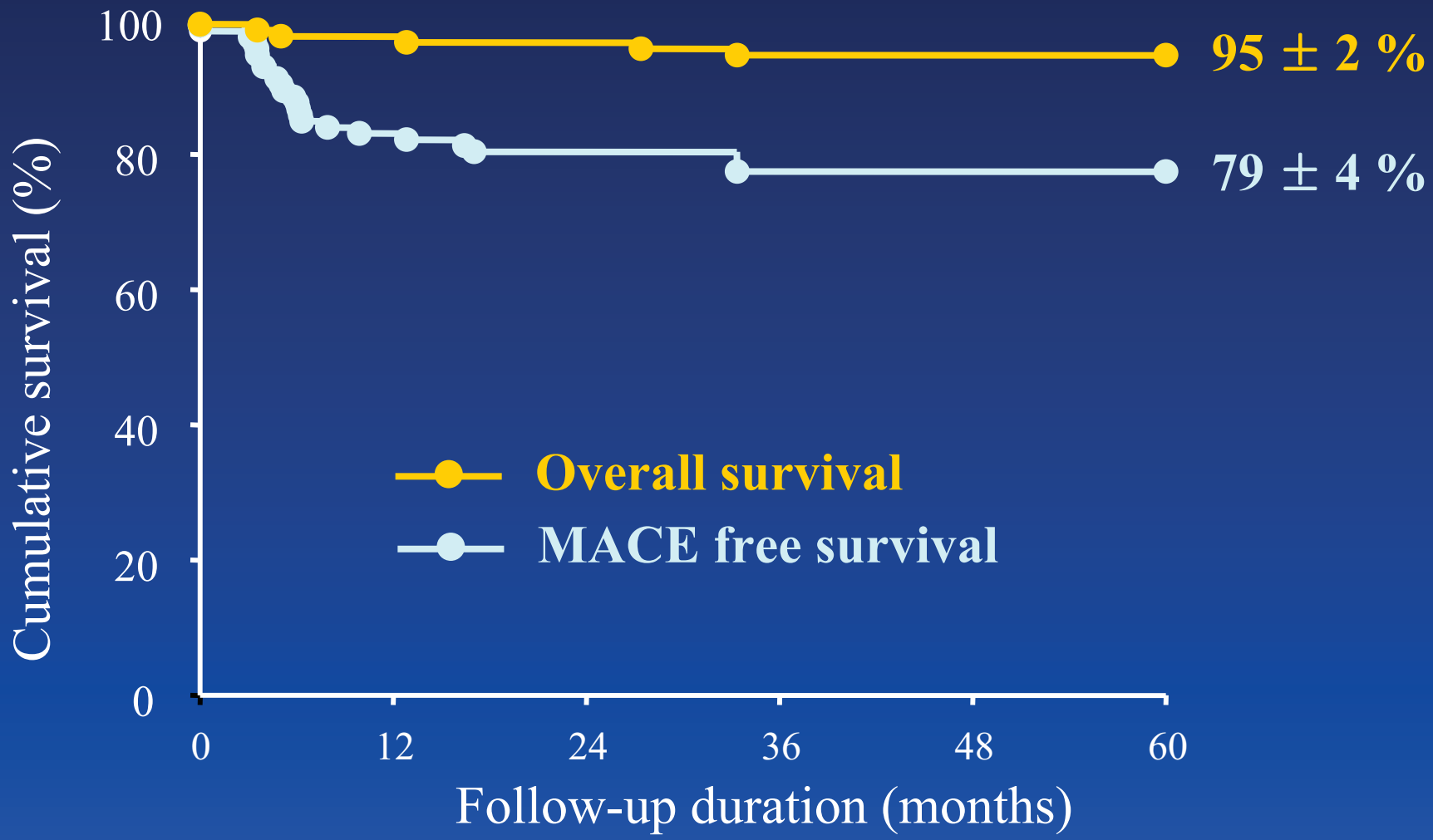
Clinical Outcome (n=310)

Procedural Success Rate: 99%

In-Hospital Complications

Acute closure	0
Subacute thrombosis	1 (0.5%)
Death	0
Q-MI	0
Emergent CABG	0

Unprotected Left Main Stenting in AMC
5-Year Survival Curve



How many more patients do we have to include for the study ? We have already done more than 500…

Unprotected left main stenting

- Technical success rate was 98-99 %
- No procedure related mortality
- SAT rate was 0.5 - 1.0 %
- Restenosis rate was 20-25%, TLR 12-16%
- All death free survival was 92-96%,
  MACE free survival was 78-82%
  during 5 year clinical follow-up period

Simple lesions, Normal LV,

Elective stenting should be an alternative to surgery !

We have data.
Surgery has no survival benefit.

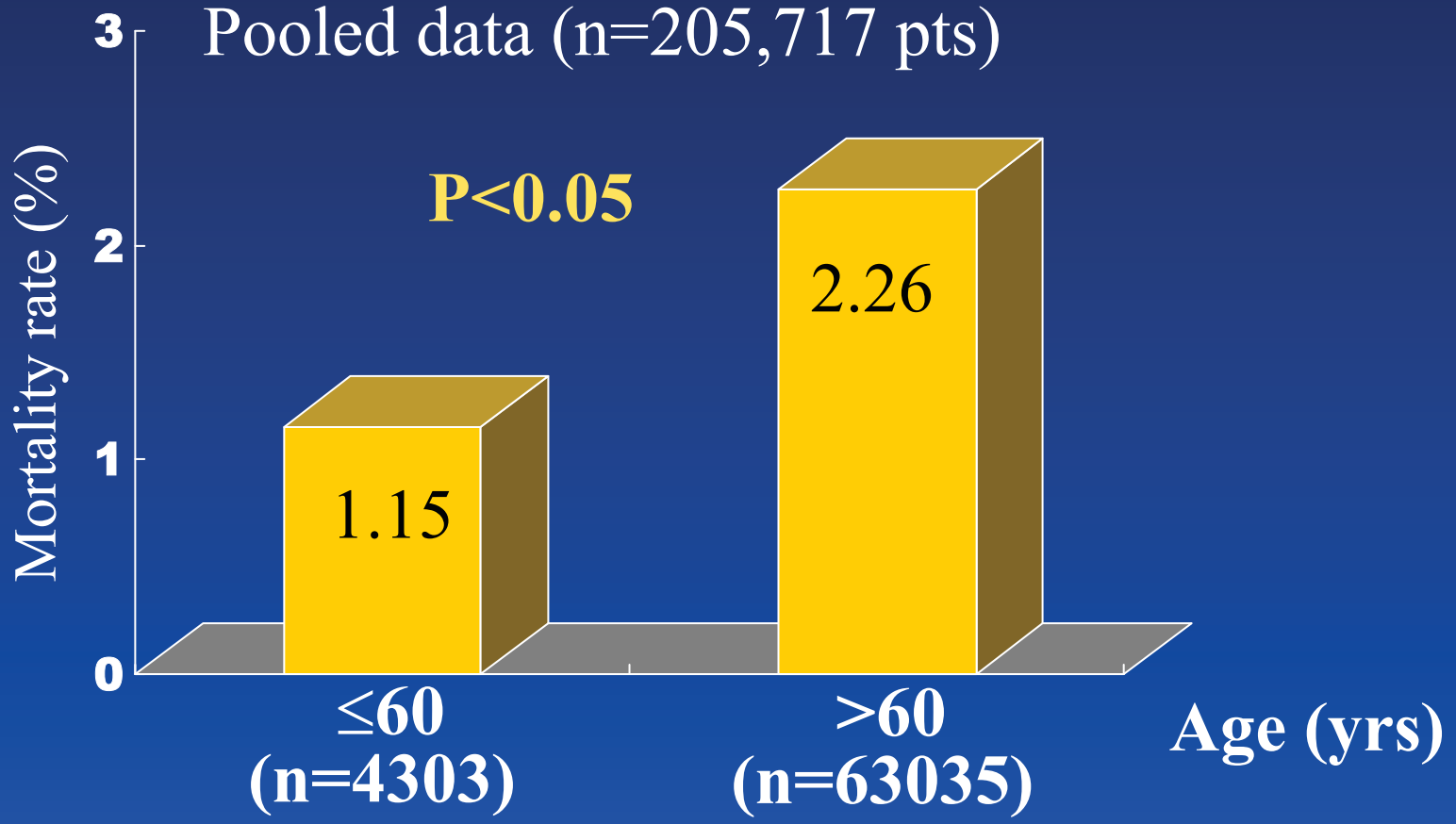
Elderly Patients

What should we concern ?

- Patient's underlying conditions – lung, kidney, brain, peripheral disease, aortic calcification…..
- Surgeon's skill
- Number of graft vessels
- Arterial graft or vein graft
- Post-operative care

Age as an independent risk factor of mortality in CABG

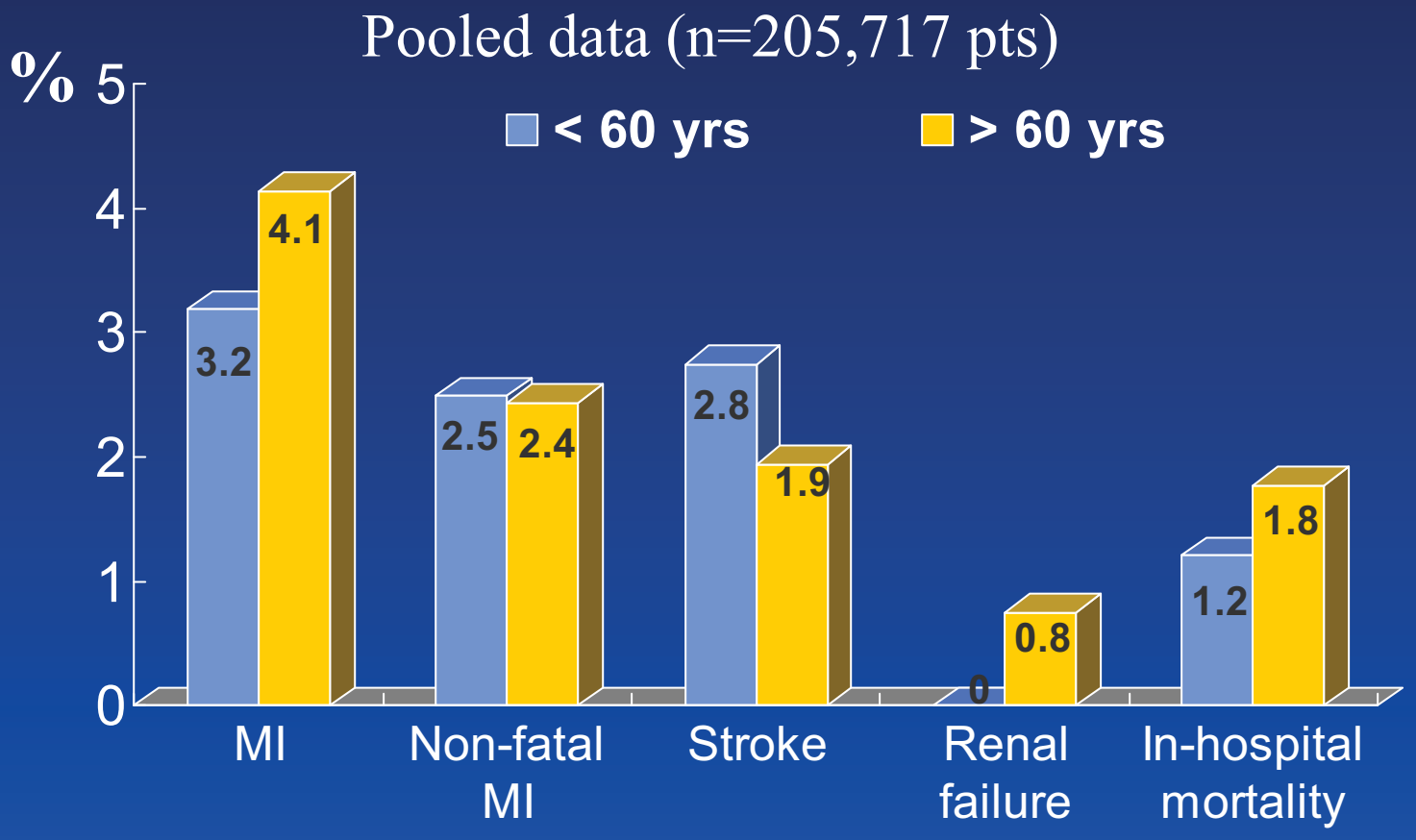
30-Day Mortality



Nalysnyk L, Heart 89:767, 2003

Higher post-operative complication rate

Old age

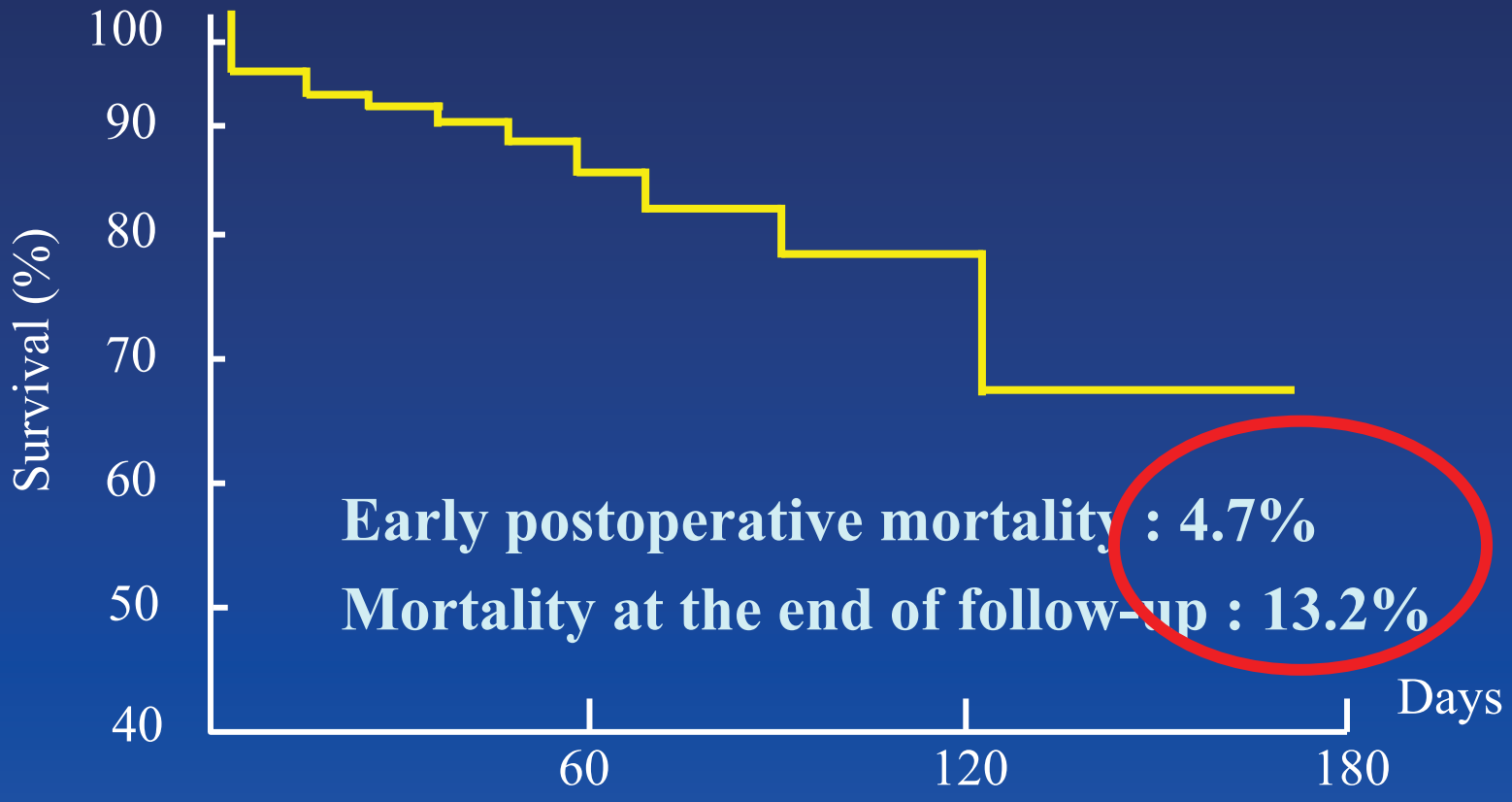


Nalysnyk L, Heart 89:767, 2003

Multiple graft for Isolated LMCA Stenosis

106 patients with a IMA and SVGs

Not superior to LMCA stenting



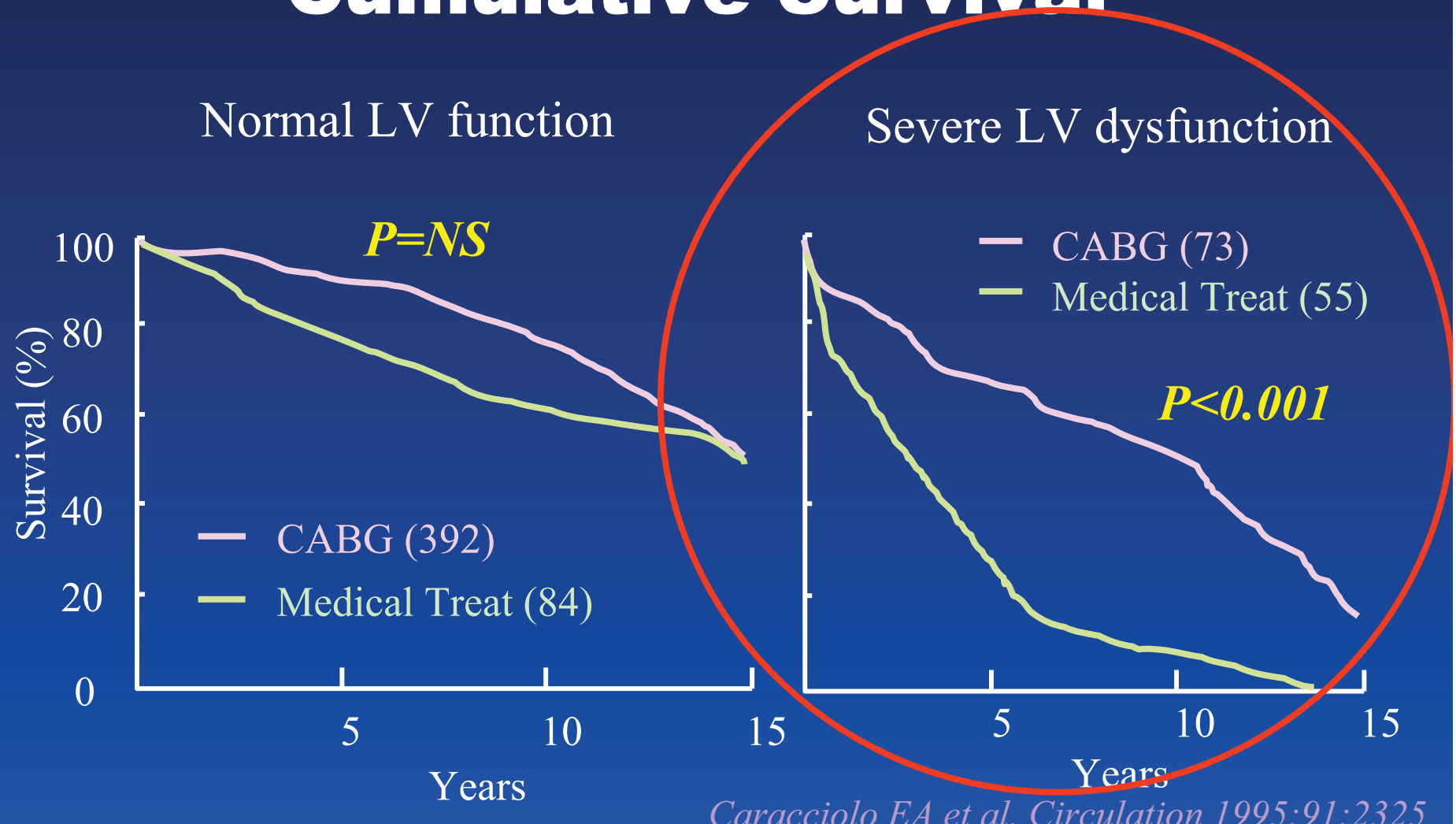
d'Allonnes et al. Heart 2002;87:544

Left Main Coronary Disease

CASS

Depending on LV function

Cumulative Survival



Caracciolo EA et al. Circulation 1995;91:2325

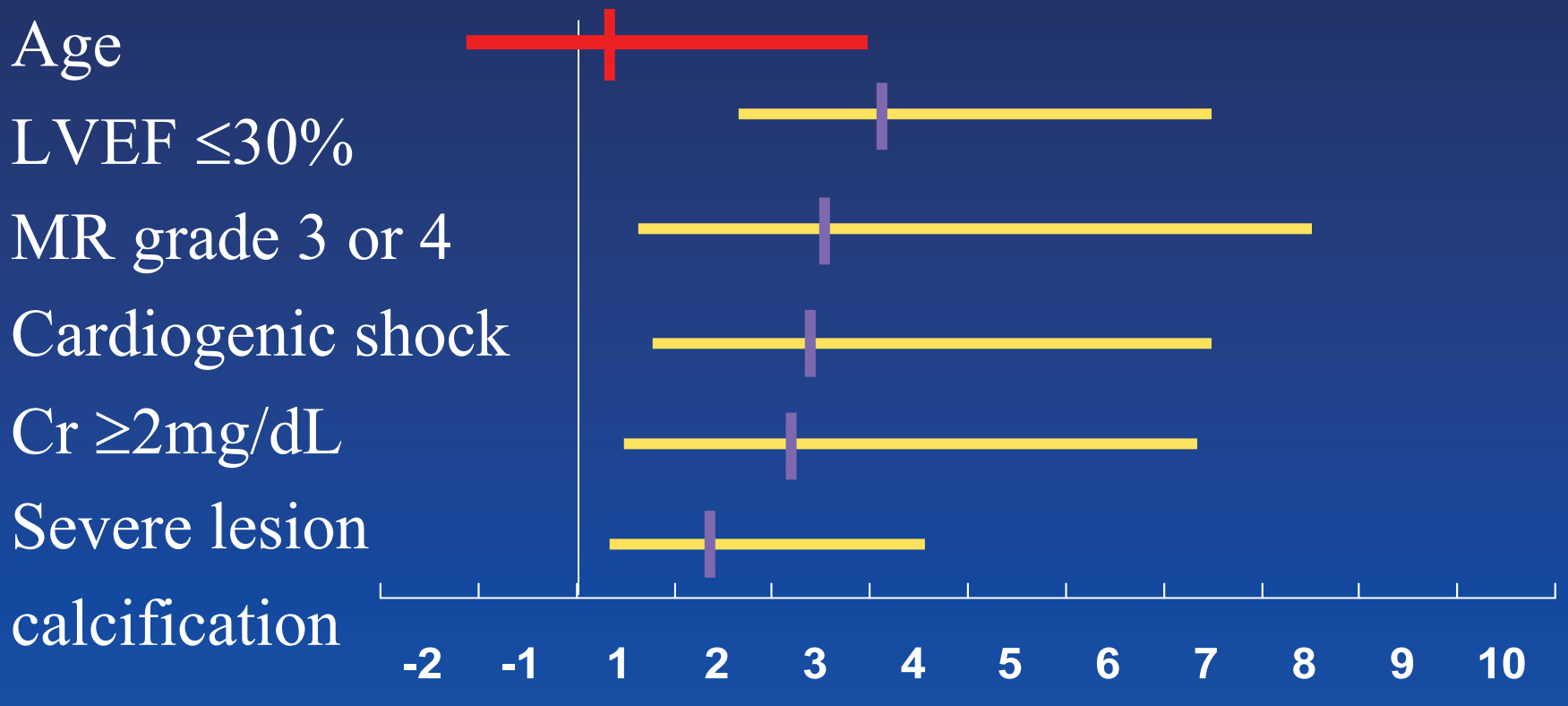
One year Clinical Outcomes

(%)	All (n=279)	Low Risk
Death	24.2	3.4
Cardiac Death	20.2	3.4
MI	9.8	2.3
CABG	9.4	11.4
Repeat PCI	24.2	20.4
Death or MI	27.8	3.4
Death/MI/CABG	34.6	16.9

Final Report from ULTIMA, Circulation 2001;104:1609-1614

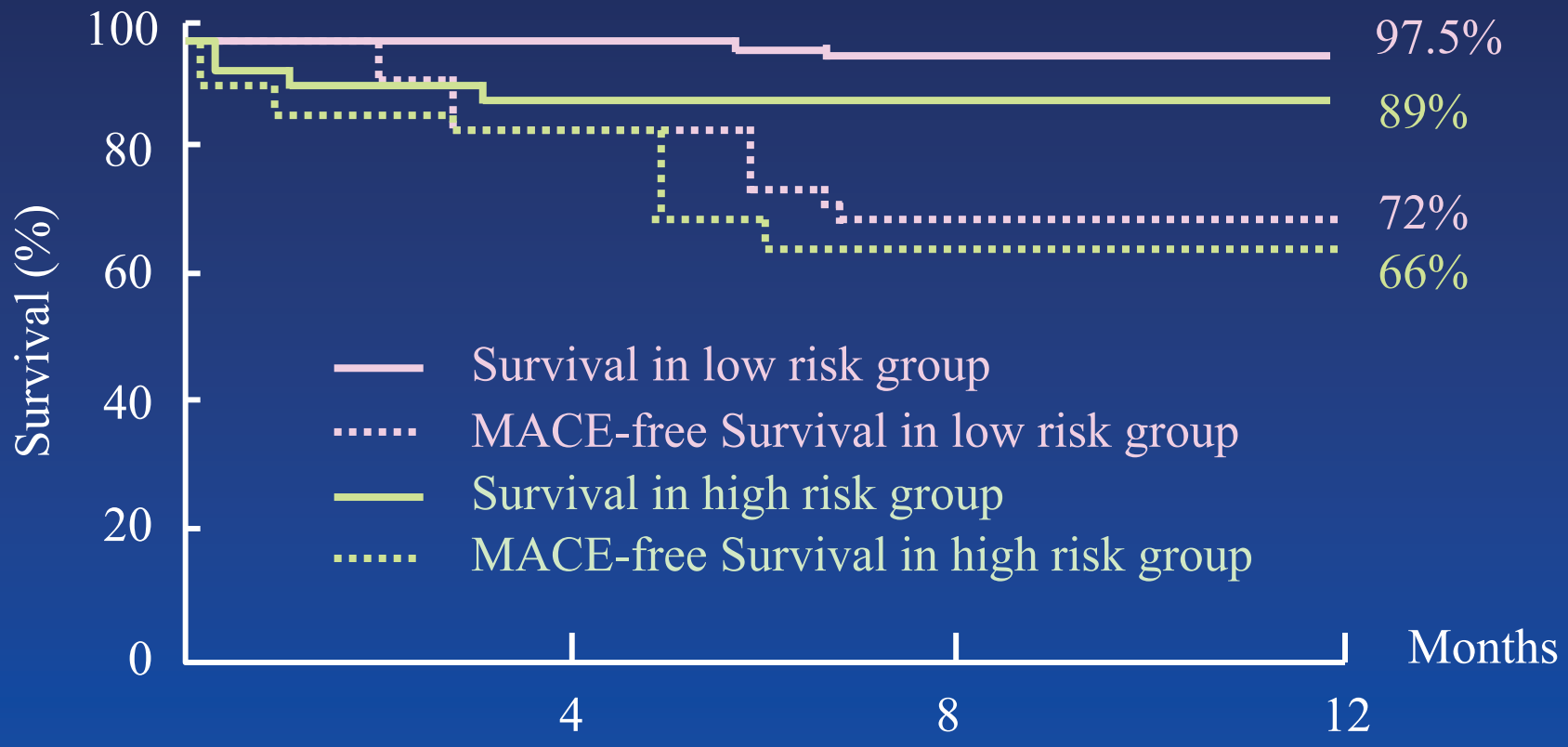
Relative Risk of Mortality in LMCA Stenting

ULTIMA Registry (279 pts)



Nalysnyk L, Heart 89:767, 2003

Survival Curve



Silvestri M et al. J Am Coll Cardiol 2000;35:1543

Left Main Coronary Disease

Surgery,

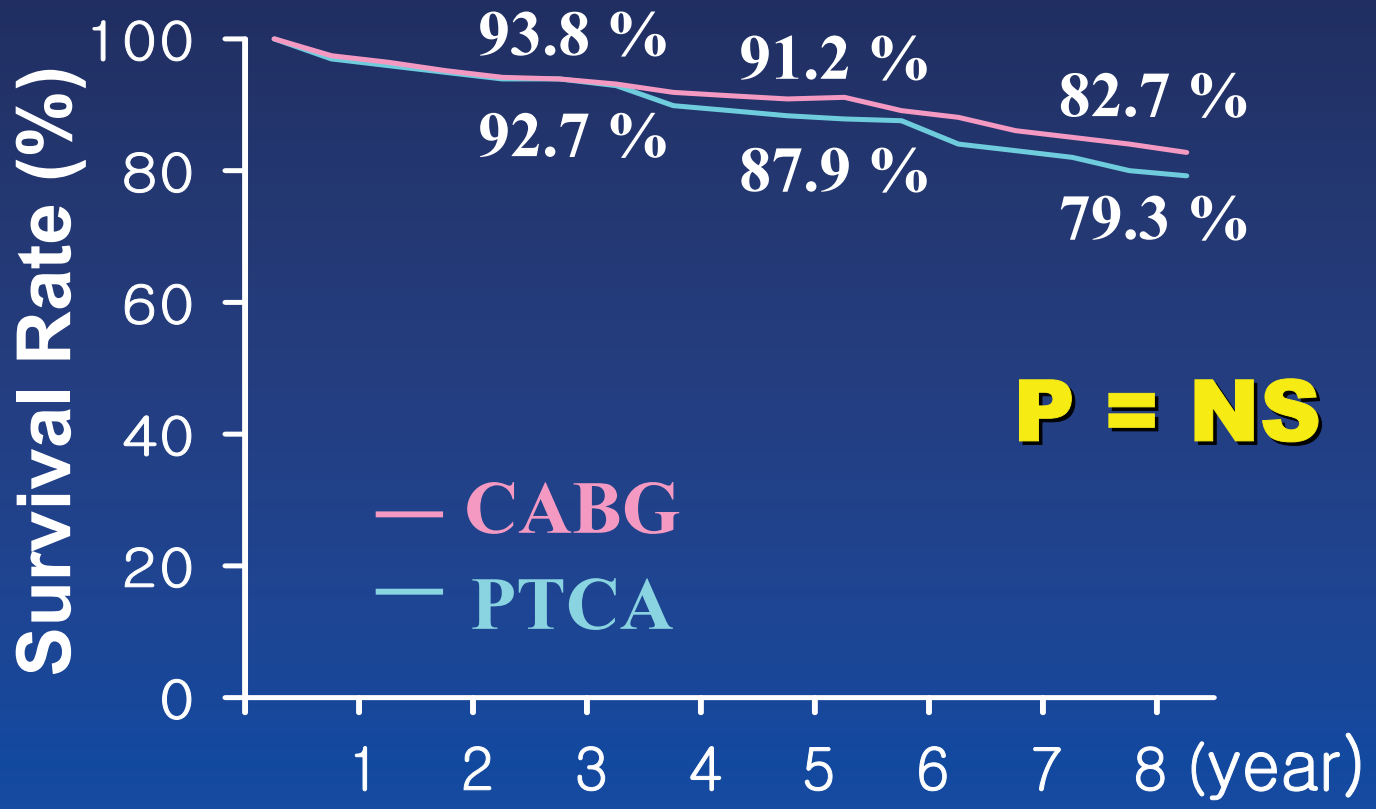
Has survival benefit compared to the medical treatment, however, no available data compared to the stenting...

Multi-vessel Disease

Elective stenting,

For the patients with multi-vessel disease…

8 - year Survival

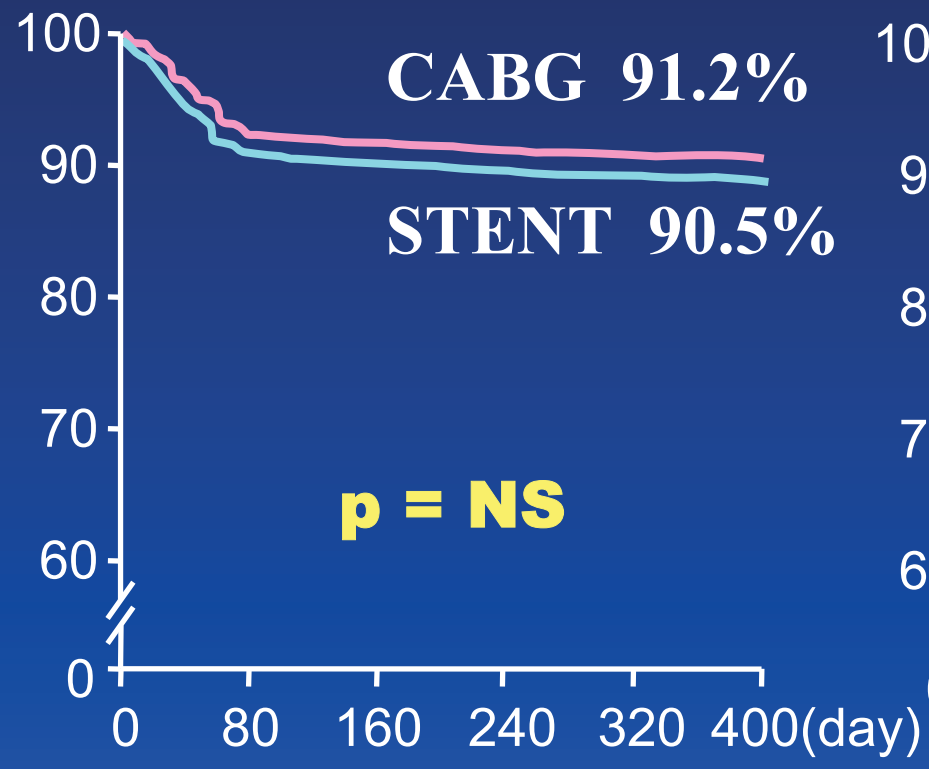


King SB, JACC 2000;35:1116-21

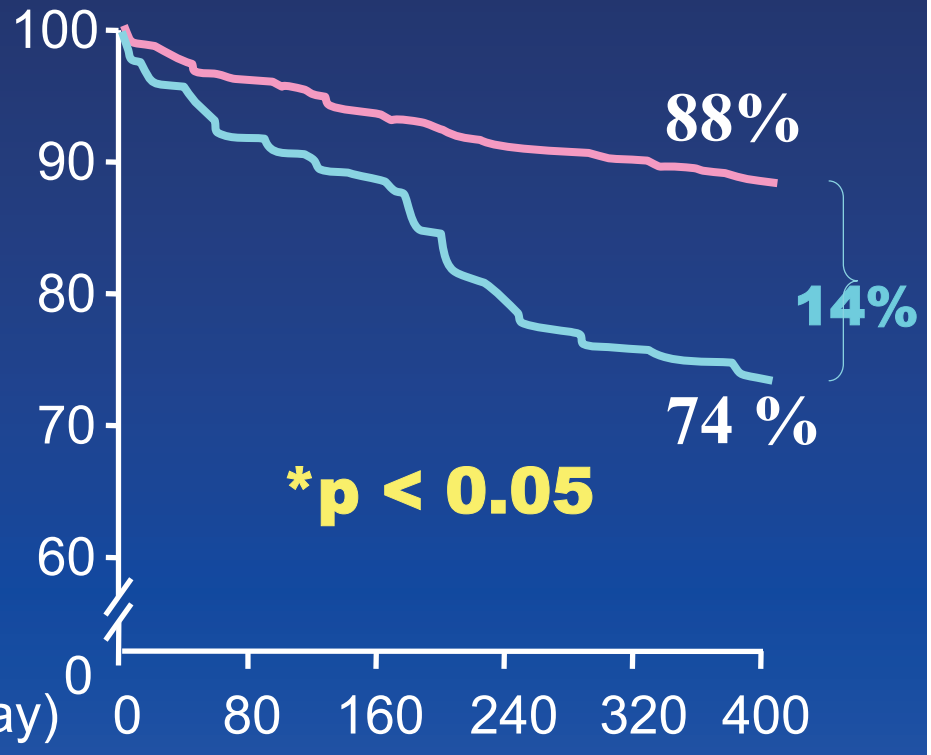
ARTS

Event-free Survival

Death / CVA / M I



Death/ CVA / MI / CABG / Re-PTCA



Multi-vessel Disease

Surgery,

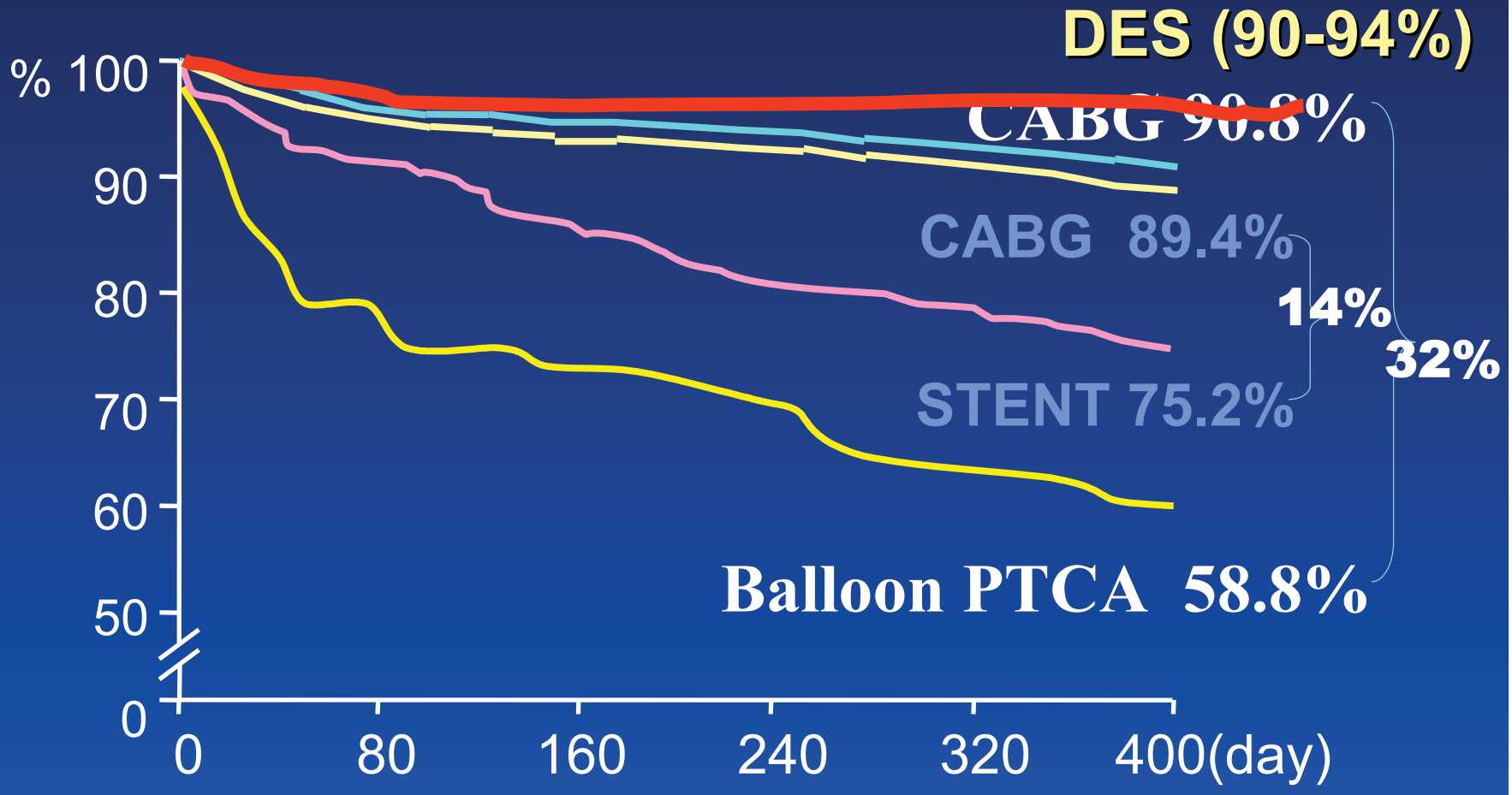
Did not have any survival benefit ...

Repeat TLR is the only problem in stenting group !

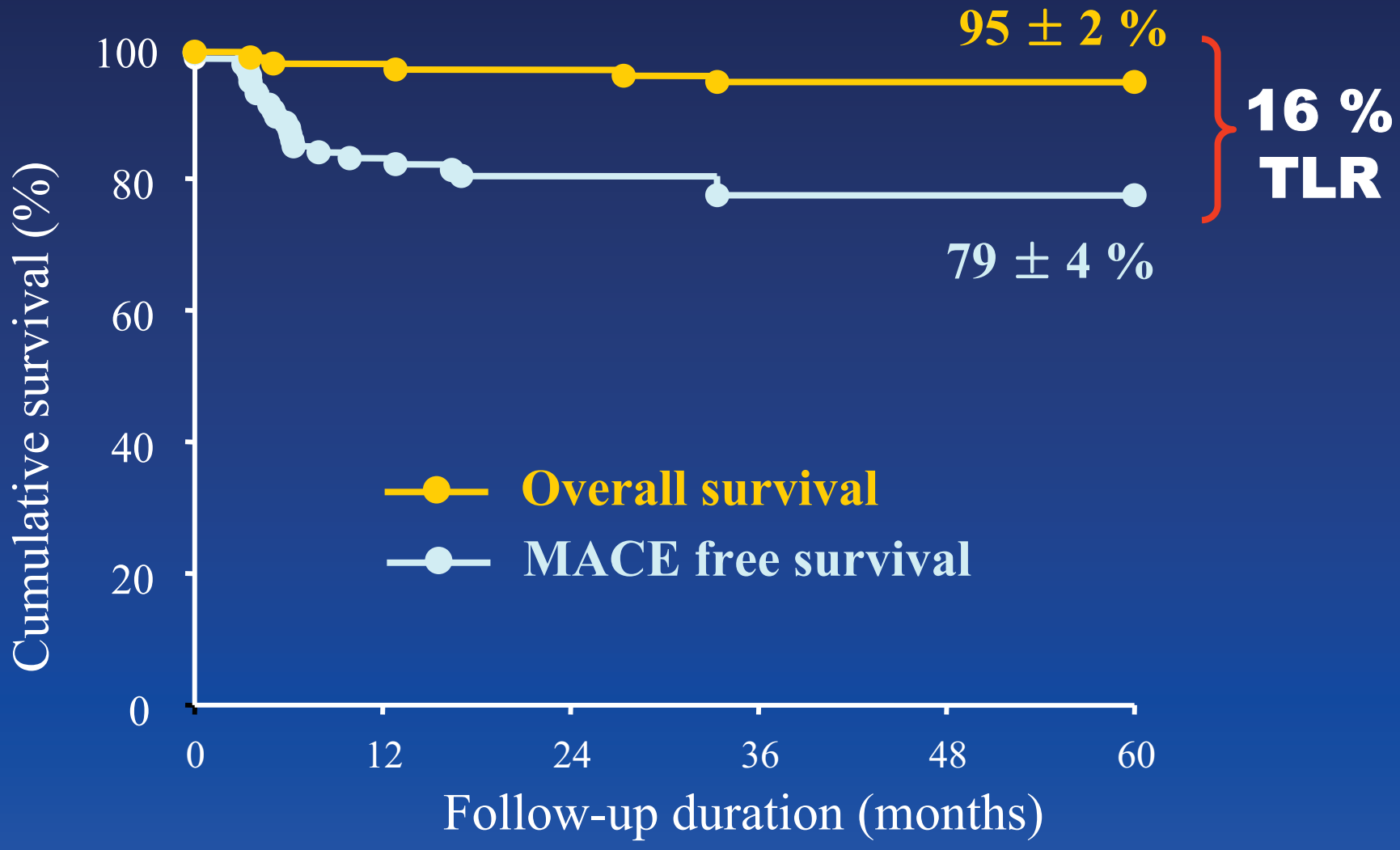
Event-free Survival in Mutivessel Disease

Death / CVA / MI / CABG / TLR

In the era of DES



Unprotected Left Main Stenting in AMC
5-Year Survival Curve



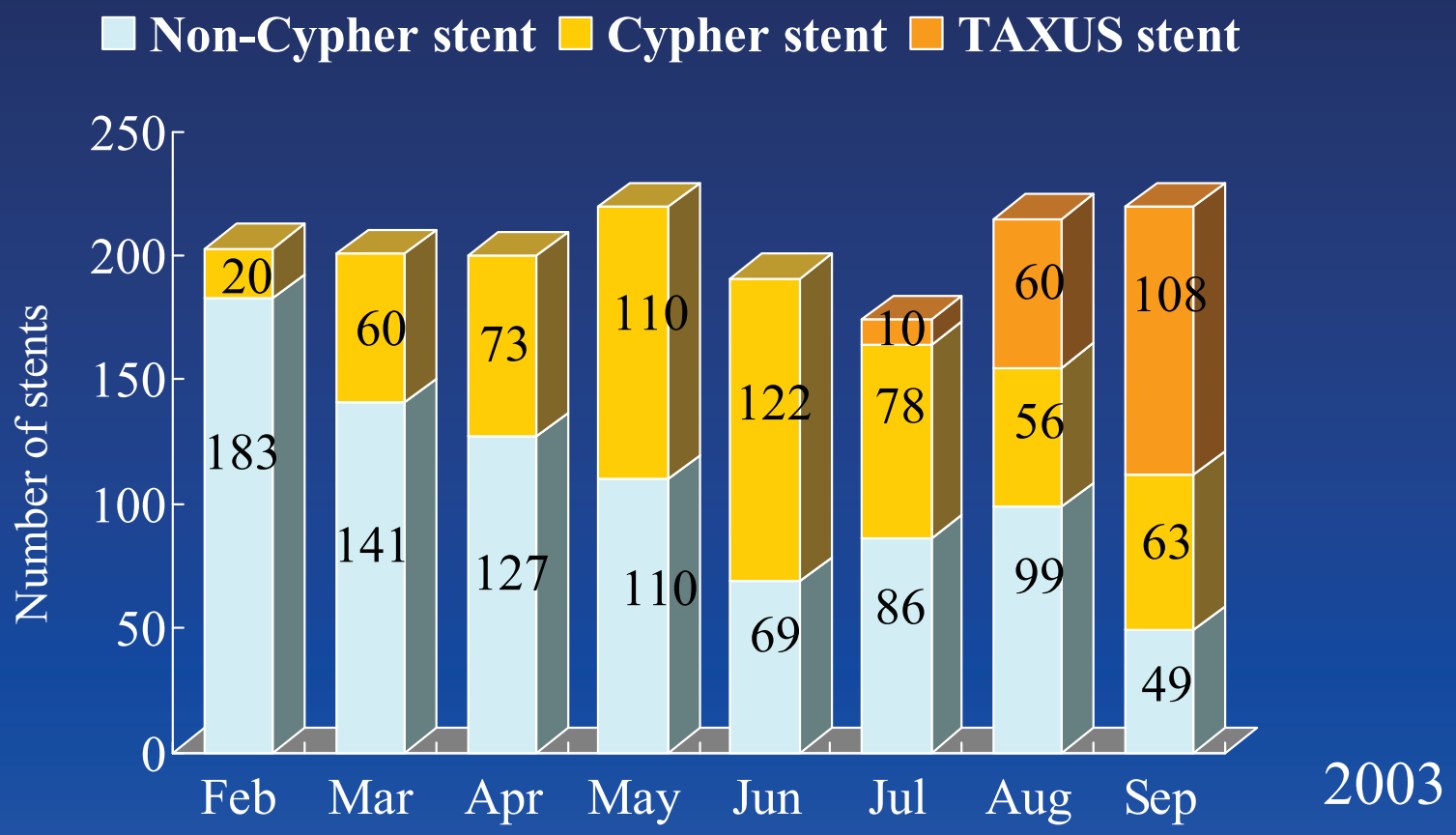
Unprotected LM stenting
In the era of DES

Just beginning…

AMC experience

Increased Use of Drug Eluting Stents

80% penetration



Unprotected Left Main Stenting

Lesion Location

Total 74 patients

Proximal involvement *	17 (23 %)
Distal involvement	57 (77 %)

* Include 2 case confined to LMCA shaft

Baseline Demographics

	n=74
Age,yrs	58 ± 12 (33-88)
Men	54 (73 %)
Diabetes	20 (27 %)
Hypertension	23 (31 %)
Current smoker	18 (24 %)
Hypercholesterolemia	4 (6 %)
LV ejection fraction (%)	58 ± 9

Lesion Characteristics

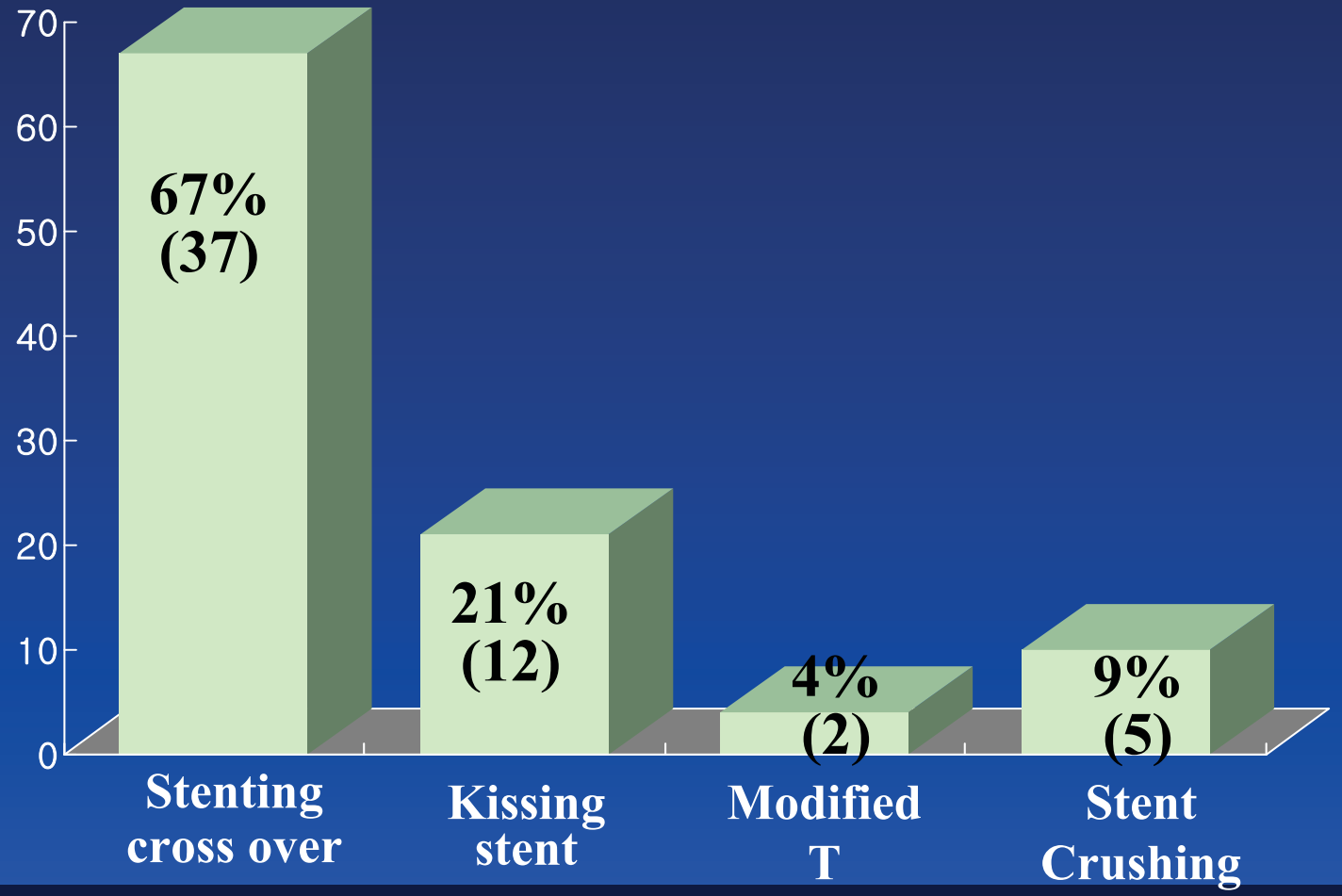
	Proximal (n=17)	Distal (n=57)
In-stent restenosis	1 (7%)	9 (21%)
Diseased vessel		
1 vessel	4 (24%)	20 (35%)
2 vessel	4 (24%)	14 (25%)
3 vessel	5 (29%)	9 (16%)
LMCA only	4 (24%)	14 (25%)

Stenting Procedure

	Proximal (n=17)	Distal (n=57)
Use of Abciximab	1 (6%)	4 (7%)
Debulking atherectomy	0	2 (4%)
IVUS guidance	14 (82%)	53 (93%)
Direct stenting	9 (53%)	24 (42%)
Use of a additional high pressure balloon	13 (77%)	30 (54%)
Maximal inflation pressure (atm)	18.7 ± 2.4	18.5 ± 3.7
Maximal balloon diameter (mm)	3.8 ± 0.3	4.1 ± 2.8
Balloon-to-artery ratio	1.1 ± 0.1	1.1 ± 0.1

Different Stenting Technique
for Distal LMCA Narrowing

Final kissing balloon inflation : 30 pts (53%)



Immediate Outcomes

in 30 days

Procedural success 100%

Death	0
Q MI	0
Non Q MI *	4 (5 %)
Emergent CABG	0
Repeat PCI	0

* All procedure related, CK-MB ≥ 3 times normal value

In the era of DES

Unprotected Left Main Stenting

- We tackled more complex lesion subsets and more complex patients subsets.
- Initial Outcomes of Unprotected Left Main stenting with DES is good.
- We need more follow-up data

Why not stenting ?
in the Era of DES
vs Surgery

- Simple Technique
- Excellent immediate outcomes
- Lower TLR rate
- May have survival benefit…

We need prospective randomized study

In the era of CABG

Ideal ones ...

- Off-pump CABG
- Multiple Arterial Graft

In the era of CABG

Reality ...

More than 80% of patients have single IMA with multiple SVG's in current practice of CABG.

Unprotected Left Main Stenting

vs Surgery

The patients who have no restenosis, may have the similar long-term outcome with complete arterial grafts revascularization

Unprotected Left Main Stenting

vs Surgery

Reduced TLR ? ***Probably Yes***

Unprotected Left Main Stenting

vs Surgery

Stenting could be considered an alternative to Bypass surgery for all patients ?

No ***In Selected Patients*** **Yes**

Why not just stent it !

For the left main disease

- Patients who are good candidate for surgery (good LV, low risk):

Good Candidate for Stenting

Why not just stent it !

For the left main disease

- Patients who are poor candidate for surgery (poor LV, high risk):

We need more data in the era of Drug Eluting Stents...

Stenting vs Surgery

Until now, Surgery and PCI would be complementary each other.

First Announcement

The 9th International Live demonstration Course

ANGIOPLASTY SUMMIT 2004

Thank you !

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