Identification of patients with a previous ACS at high atherothrombotic risk

Gaetano Maria De Ferrari

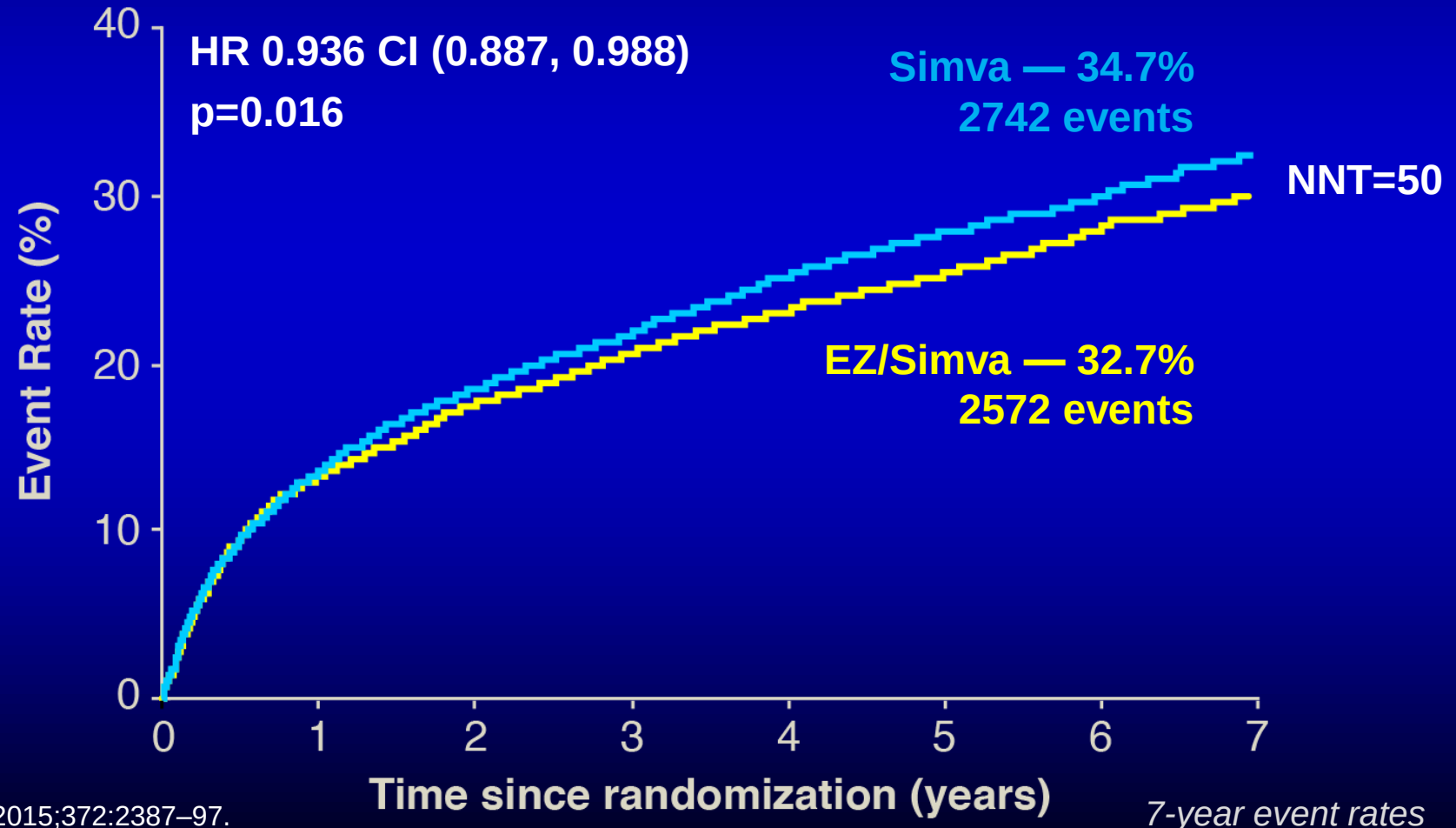
Division of Cardiology
Department of Medical Science
Città della Salute e della Scienza,
University of Turin, Italy

DISCLOSURES

Steering Committe Member : Amgen, Merck
Advisory Board & Speaker's Fee: Amgen, Merck Sanofi, Sigma Tau

MACE After ACS – Data from IMPROVE-IT

Cardiovascular death, MI, documented unstable angina requiring rehospitalization, coronary revascularization (≥30 days), or stroke



Cannon CP, et al. N Engl J Med 2015;372:2387–97.

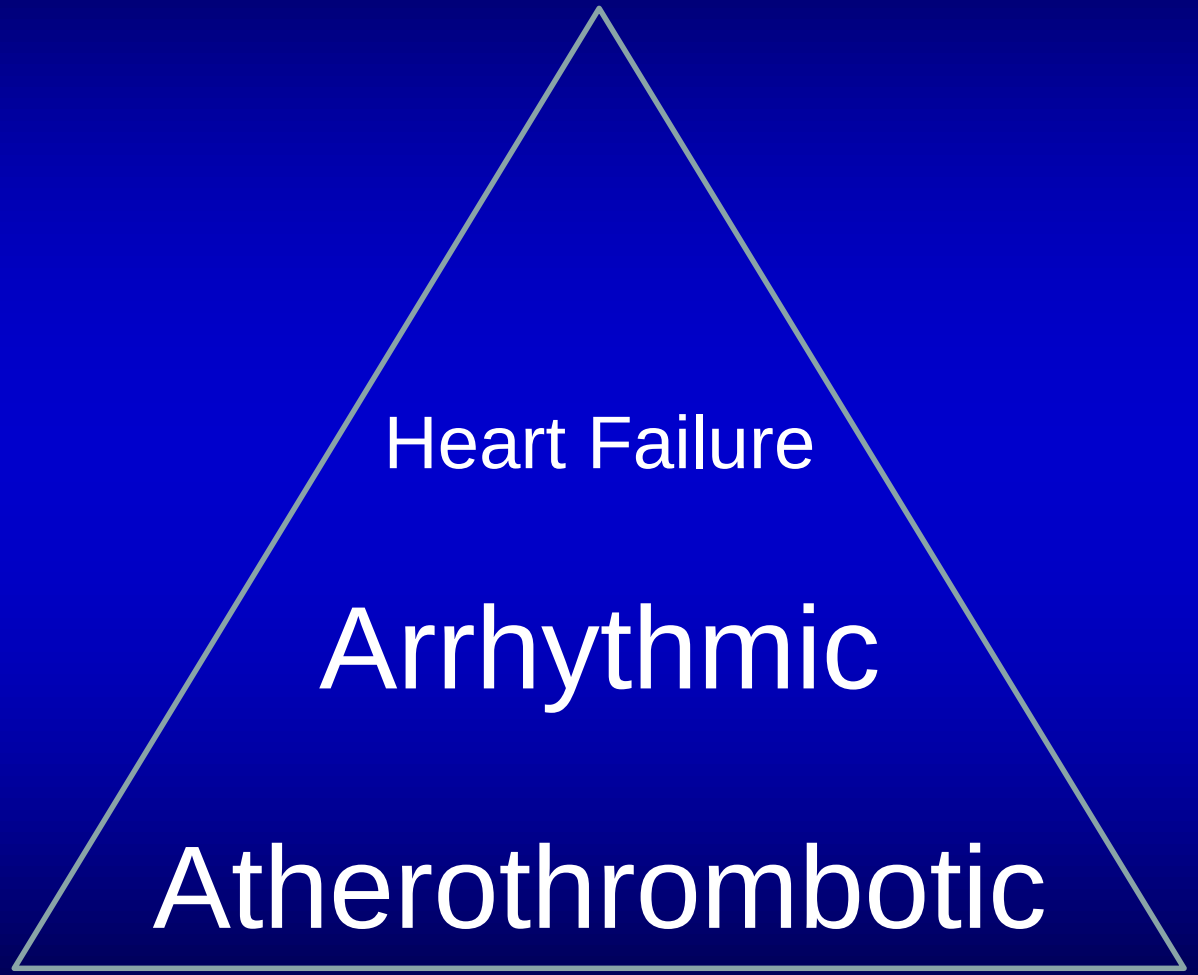
7-year event rates

Recurrent Cardiovascular Events after ACS

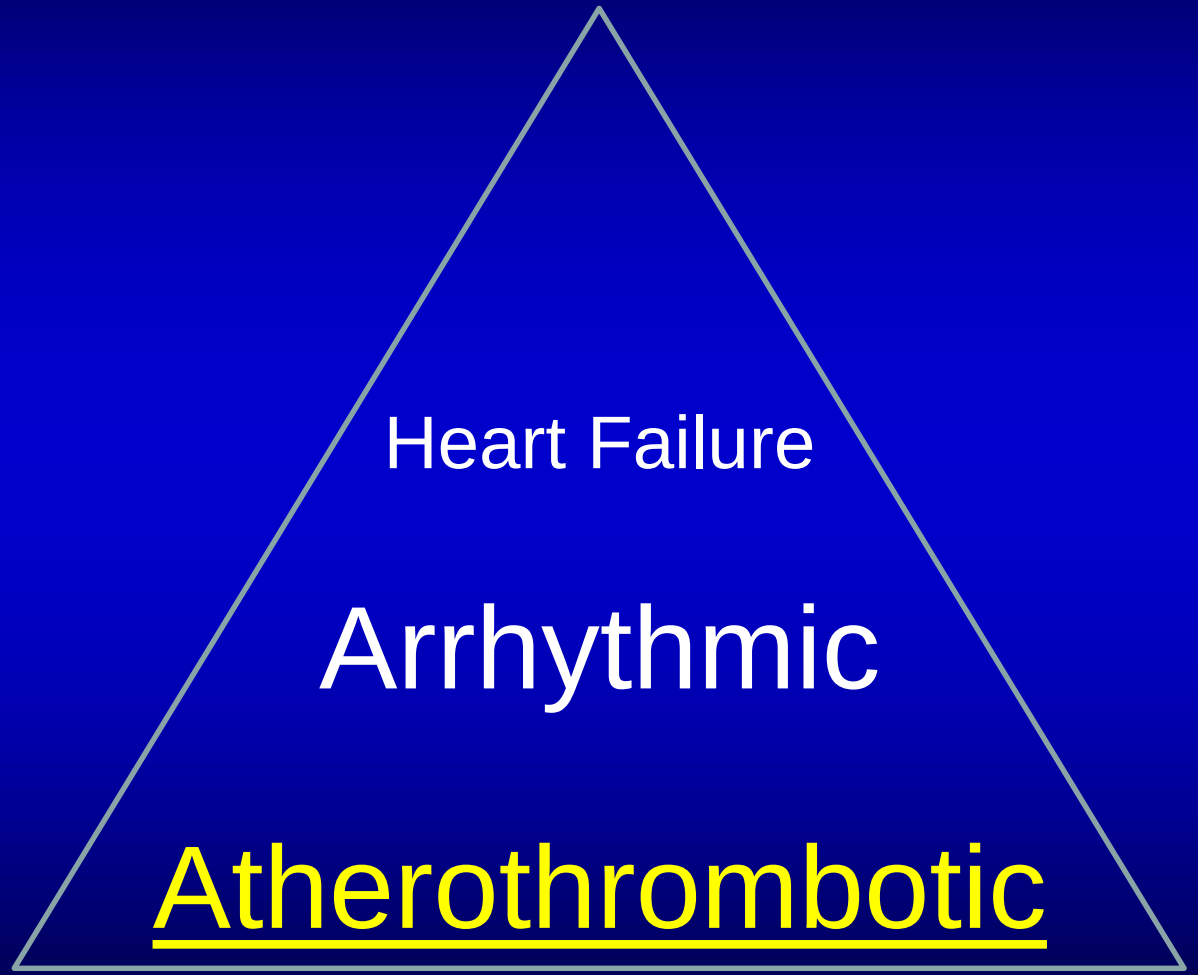
	FOURIER (Median FU 26 mos)	TRA 2P–TIMI 50 (Median FU 30 mos)	ODYSSEY (Median FU 34 mos)	IMPROVE IT (Median FU 72 mos)
Death from Any Cause	3.1%	5.3%	4.1%	15.3%
CV Death, MI or Stroke	7.4%	10.5%	11.9%	22.2%
Cardiovascular Death	1.7%	3.0%	2.9%	6.8%
Any MI	4.6%	6.1%	----	14.8%
Non-fatal MI	----	----	7.6%	14.4%
Any Stroke	1.9%	2.8%	1.6% (ischemic)	4.8%
Unstable Angina	1.7%	----	0.6%	1.9%
Urgent Coronary Revascularization	4.0%	2.6%	----	8.6%


www.CartoonStock.com
ONE SIZE FITS ALL.
EXCEPT FOR YOU,
OF COURSE.

Mechanisms of MACE



Mechanisms of MACE



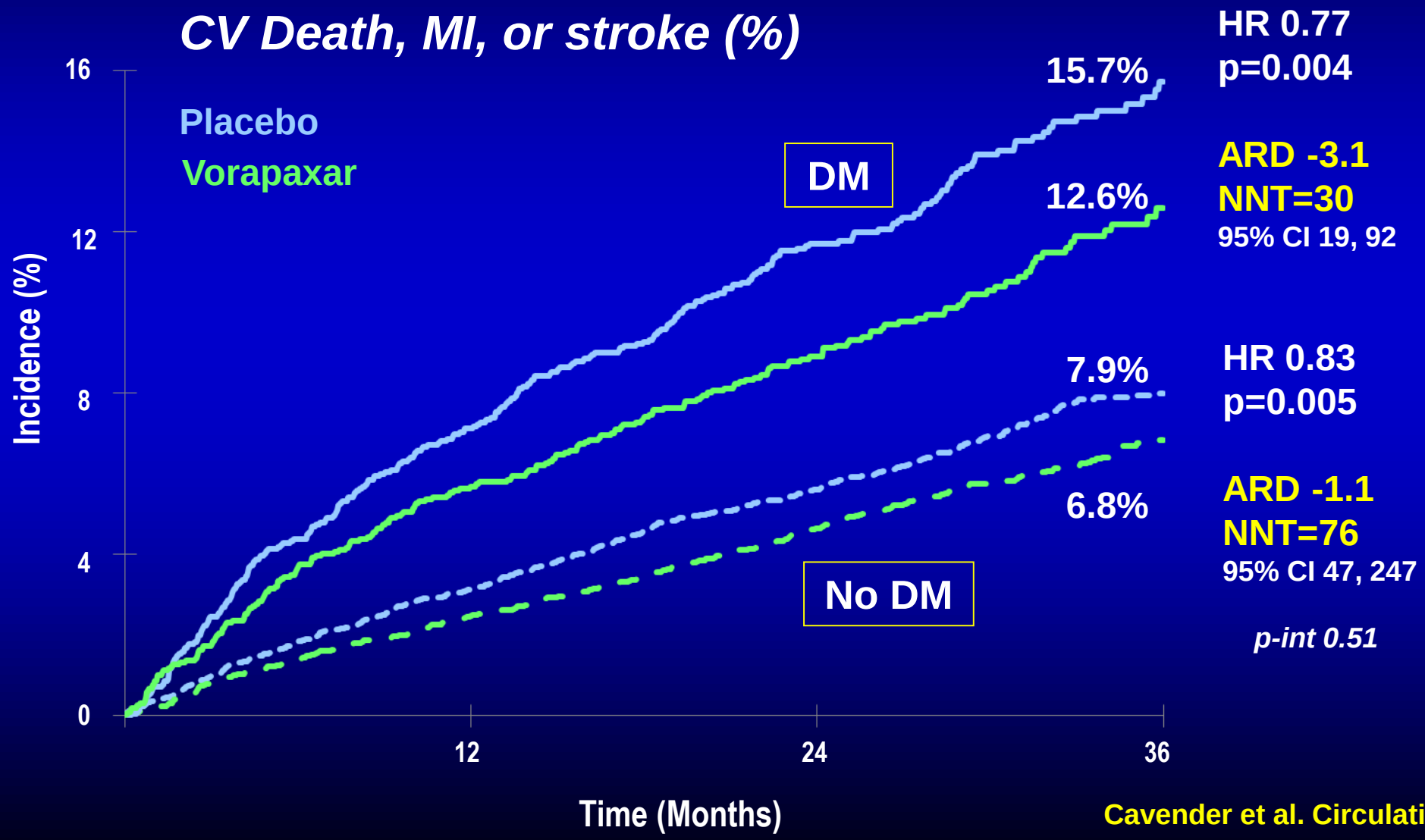
Clinical Features of Atherothrombotic High Risk Patients

- Diabetics
- PAD and CeVD
- Multivessel, extensive CAD
- CABG
- Patients with multiple events
- Patients with recent ACS
- Patients with index event on APT
- Smokers
- Non revascularized (part nSTE ACS)
- High CRP / Lp(a)
- High Risk Scores

Clinical Features of Atherothrombotic High Risk Patients

- **Diabetics**
- PAD and CeVD
- Multivessel, extensive CAD
- CABG
- Patients with multiple events
- Patients with recent ACS
- Patients with index event on APT
- Smokers
- Non revascularized (part nSTE ACS)
- High CRP / LP(a)
- High Risk Scores

Efficacy of Vorapaxar in Patients w/ Prior MI Based on Diabetes History



HR 0.77
p=0.004

ARD -3.1
NNT=30
95% CI 19, 92

HR 0.83
p=0.005

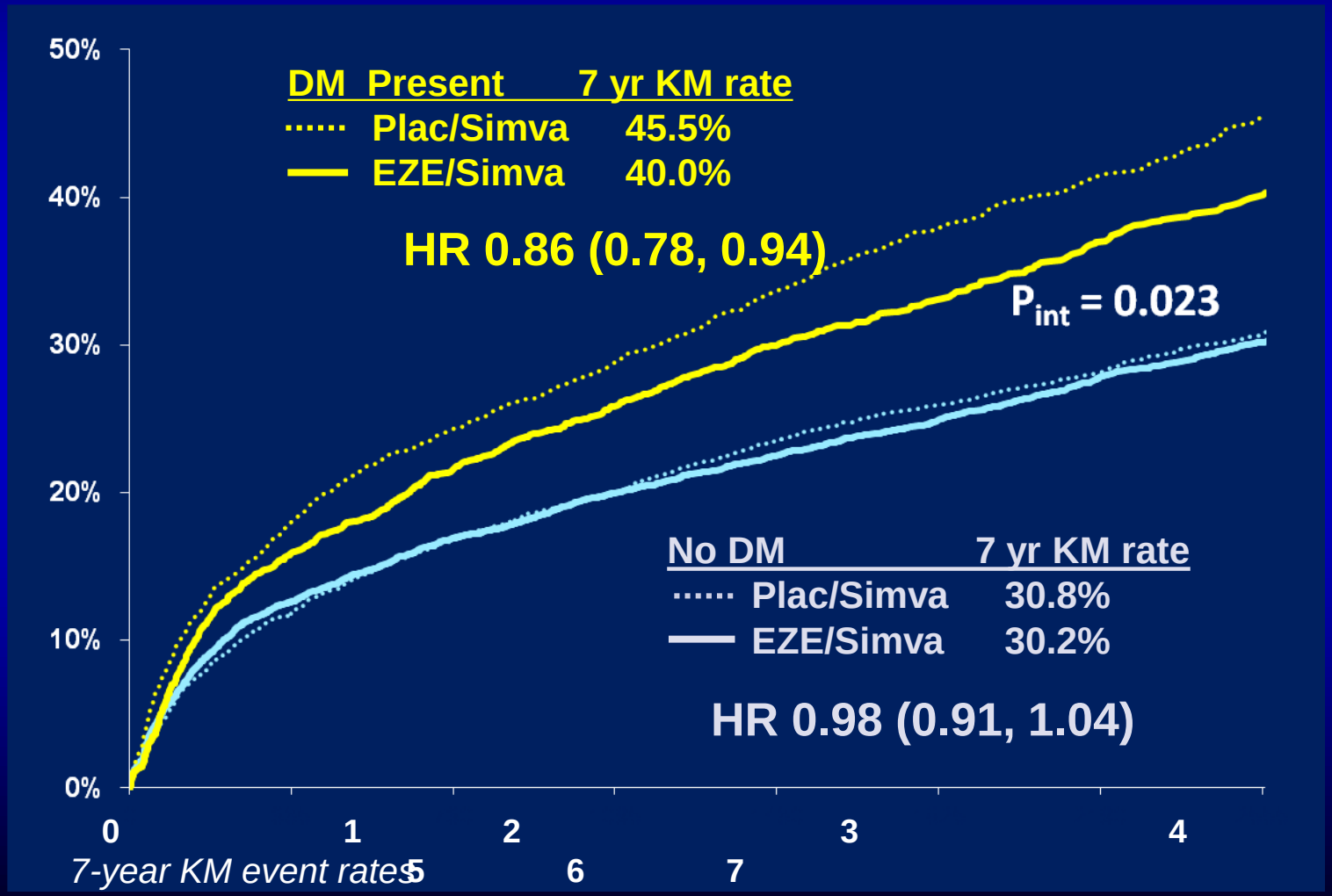
ARD -1.1
NNT=76
95% CI 47, 247

p-int 0.51

Cavender et al. Circulation 2015

Primary Endpoint — ITT

Cardiovascular death, MI, documented unstable angina requiring rehospitalization, coronary revascularization (≥30 days), or stroke

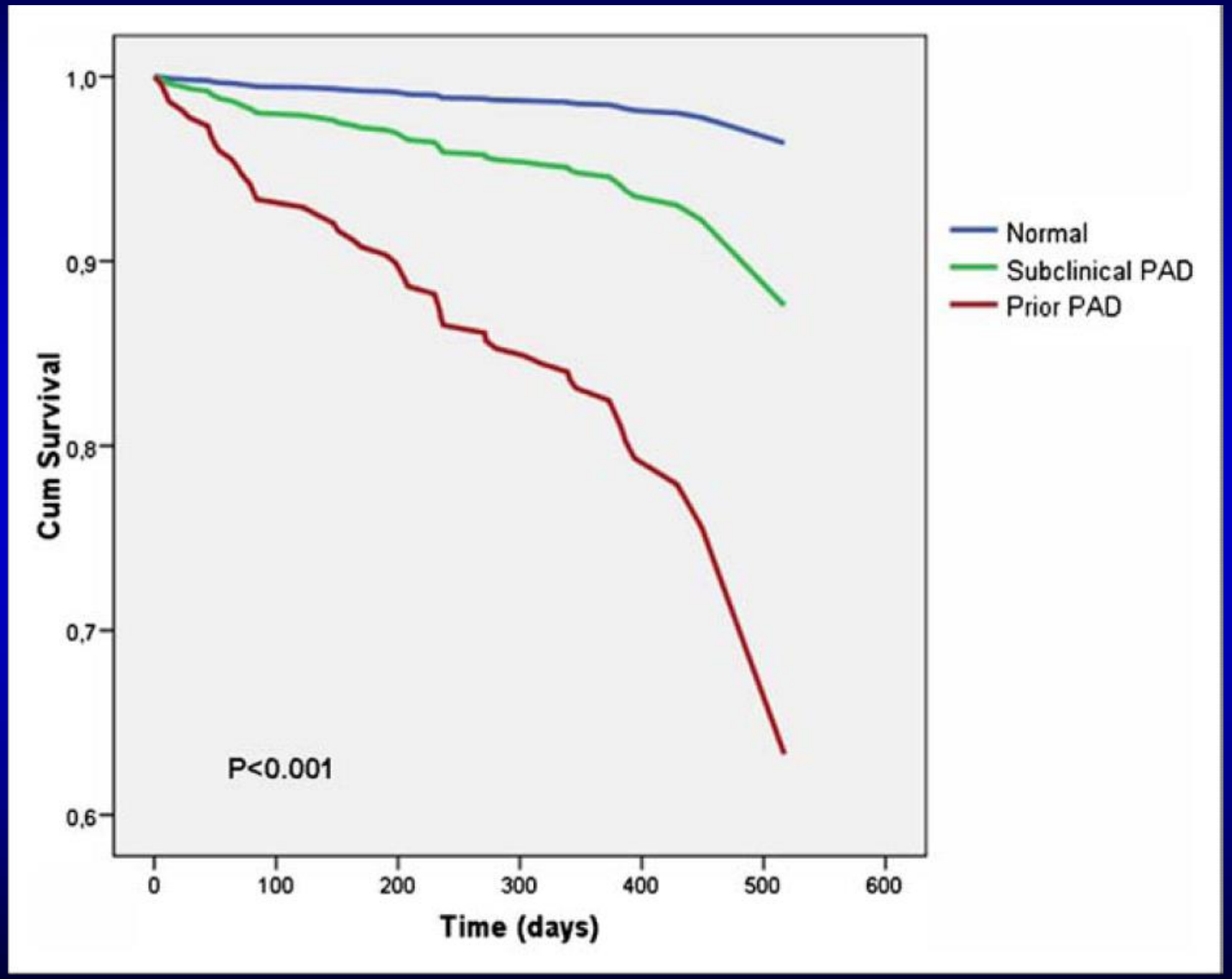


Giugliano RP, ESC Congress 2015

Clinical Features of Atherothrombotic High Risk Patients

- Diabetics
- **PAD and CeVD**
- Multivessel, extensive CAD
- CABG
- Patients with multiple events
- Patients with recent ACS
- Patients with index event on APT
- Smokers
- Non revascularized (part nSTE ACS)
- High CRP / LP(a)
- High Risk Scores

Impact of PAD on Survival After MI

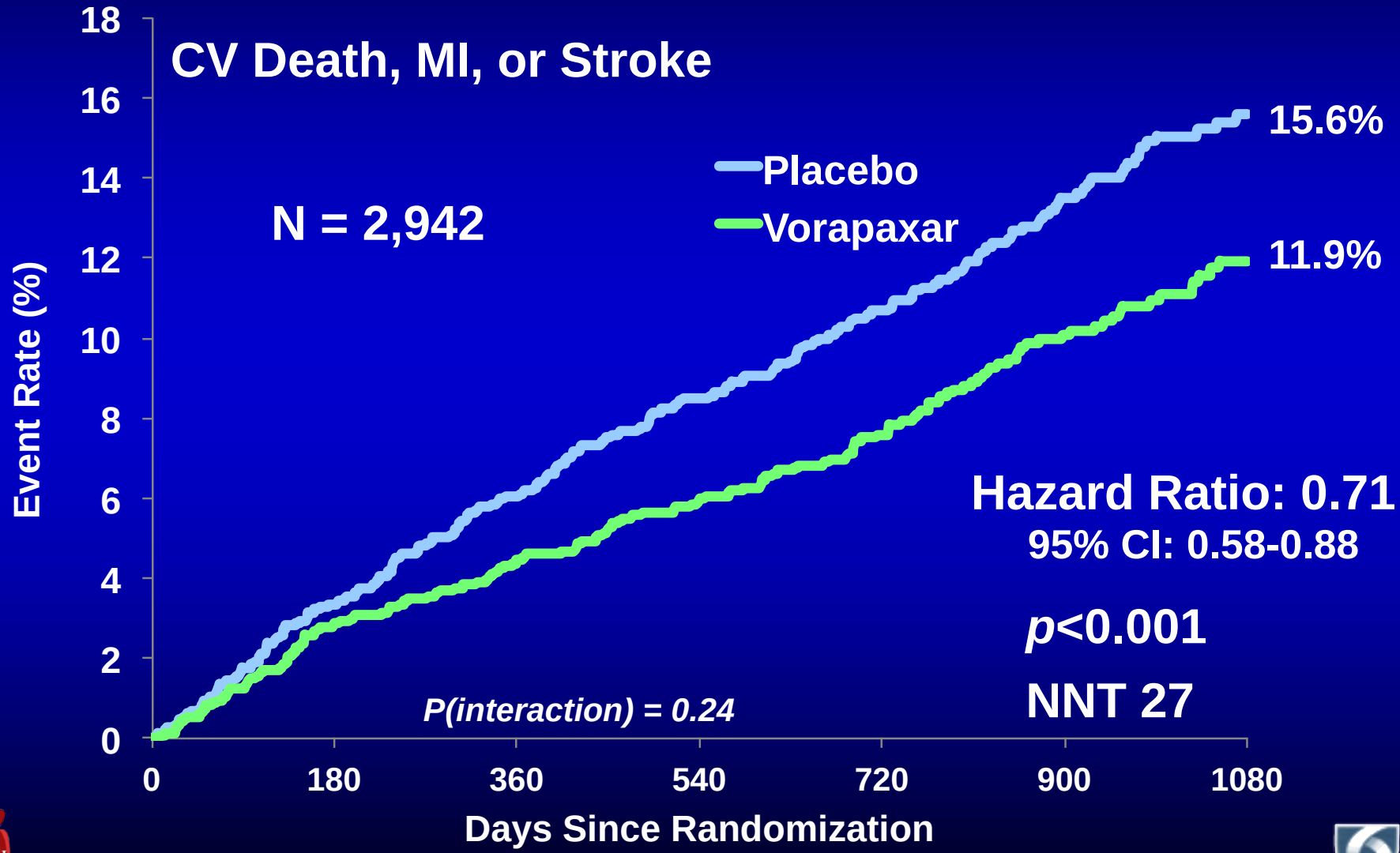


Morillas P, et al. Am J Cardiol 2009;104:1494-1498

Clinical Features of Atherothrombotic High Risk Patients

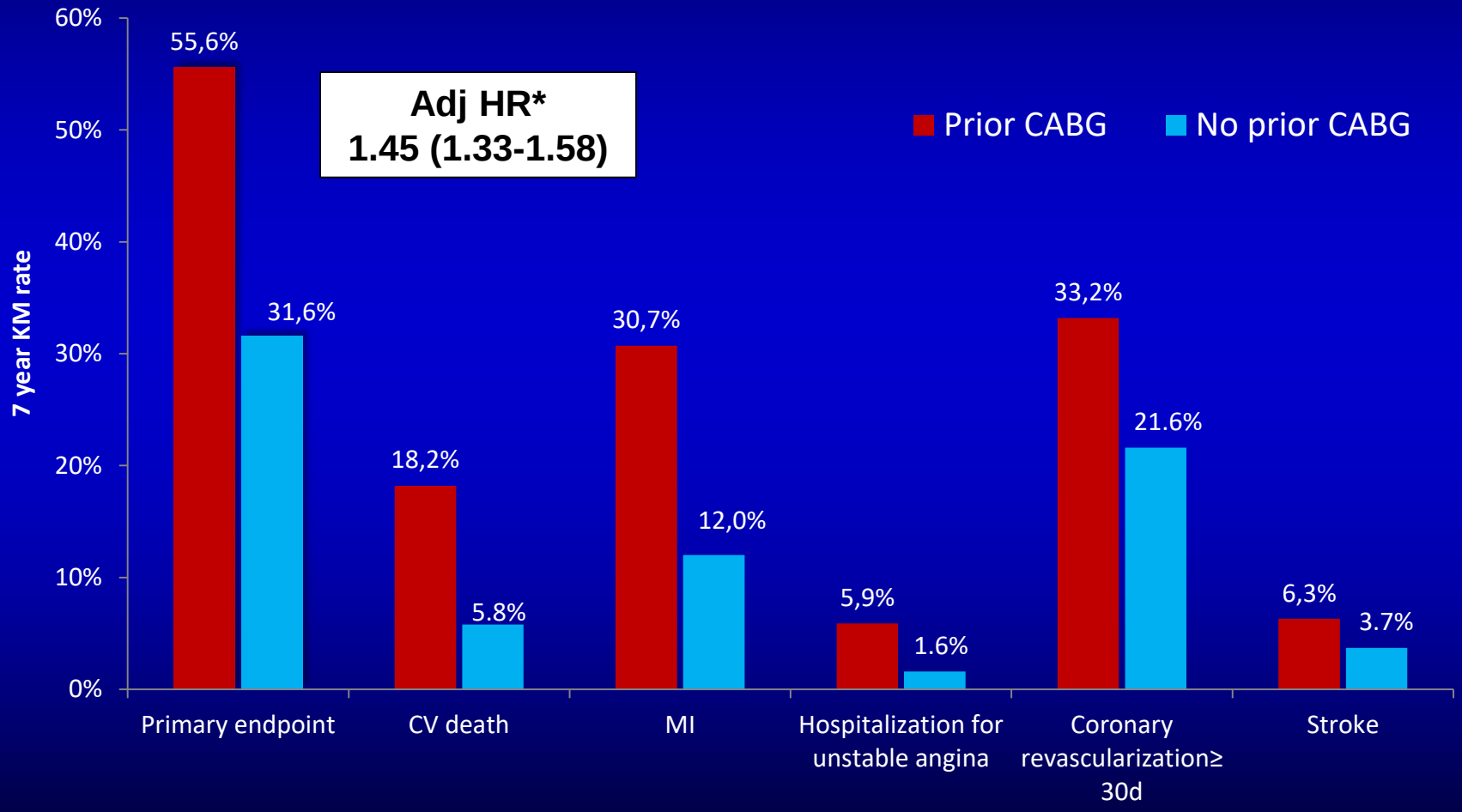
- Diabetics
- PAD and CeVD
- Multivessel, extensive CAD
- **CABG**
- Patients with multiple events
- Patients with recent ACS
- Patients with index event on APT
- Smokers
- Non revascularized (part nSTE ACS)
- High CRP / Lp(a)
- High Risk Scores

Efficacy of Vorapaxar in Patients with Prior CABG



Kosova et al. ACC 2015

Previous CABG and Incidence of CV death, MI, Stroke, UA with Rehosp, Coronary Revasc

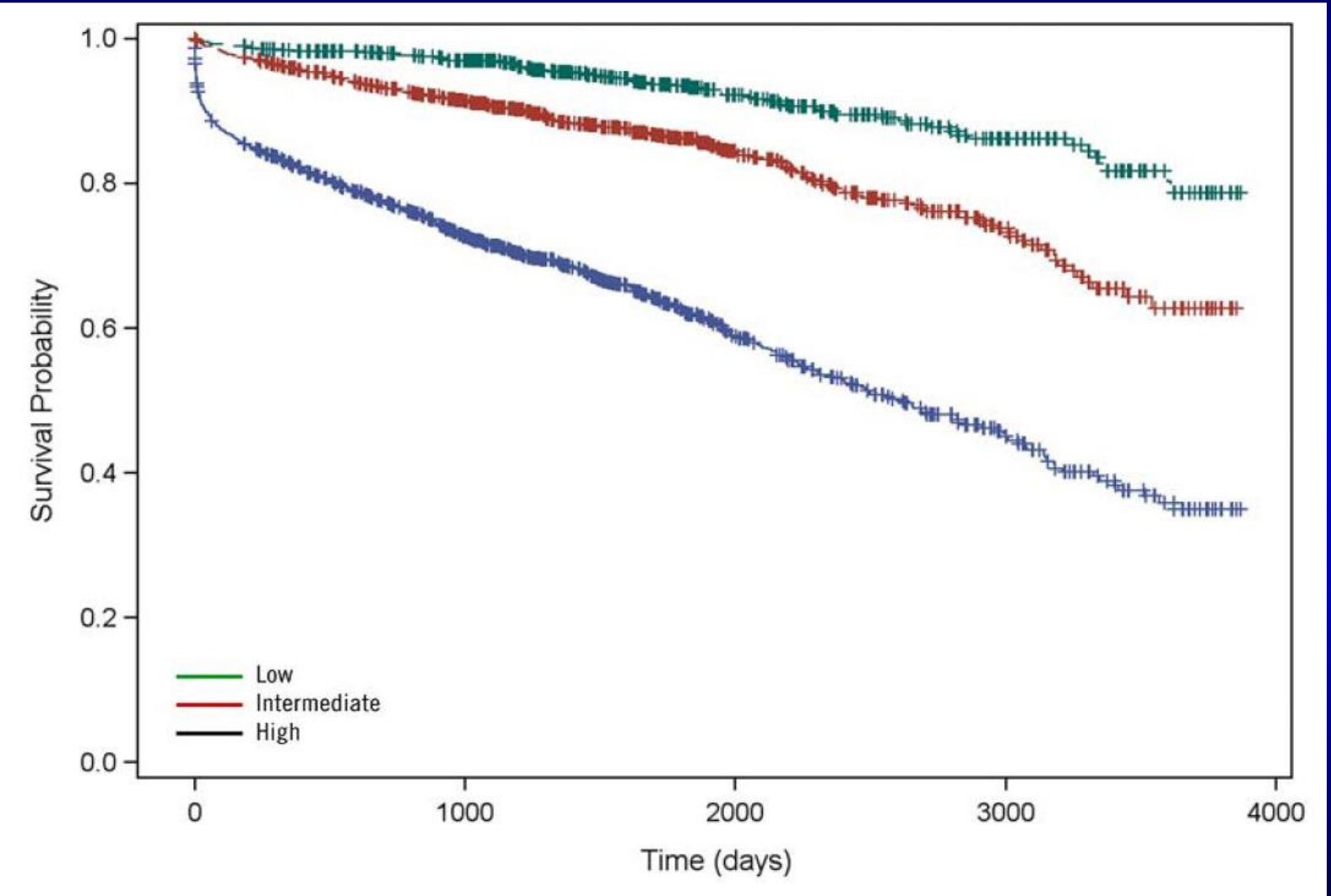


Alon Eisen et al. Eur Heart J 2016;eurheartj.ehw377

Clinical Features of Atherothrombotic High Risk Patients

- Diabetics
- PAD and CeVD
- Multivessel, extensive CAD
- CABG
- Patients with multiple events
- Patients with recent ACS
- Patients with index event on APT
- Smokers
- Non revascularized (part nSTE ACS)
- High CRP / Lp(a)
- **High Risk Scores**

Survival According to GRACE Score
(Score for death in-hospital)



Fox KAA, et al. Eur Heart J 2010;31:2755-64

GRACE Score

Medical History

① Age in Years	Points
≤29	0
30–39	0
40–49	18
50–59	36
60–69	55
70–79	73
80–89	91
≥90	100

② History of Congestive Heart Failure	24
③ History of Myocardial Infarction	12

Findings at Initial Hospital Presentation

④ Resting Heart Rate, beats/min	Points
≤49.9	0
50–69.9	3
70–89.9	9
90–109.9	14
110–149.9	23
150–199.9	35
≥200	43

⑤ Systolic Blood Pressure, mm Hg	
≤79.9	24
80–99.9	22
100–119.9	18
120–139.9	14
140–159.9	10
160–199.9	4
≥200	0

⑥ ST-Segment Depression	1 11

Findings During Hospitalization

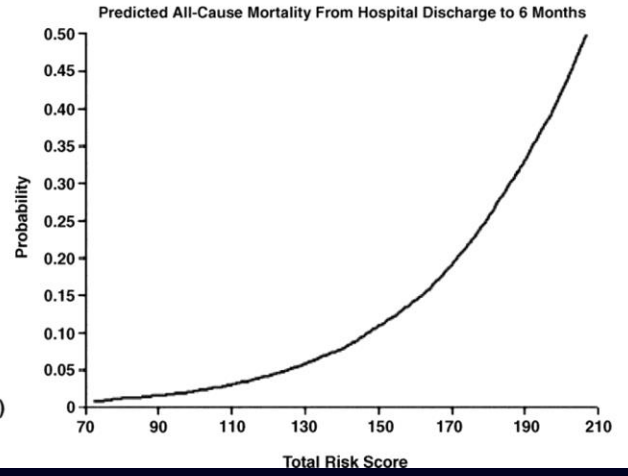
⑦ Initial Serum Creatinine, mg/dL	Points
0–0.39	1
0.4–0.79	3
0.8–1.19	5
1.2–1.59	7
1.6–1.99	9
2–3.99	15
≥4	20

⑧ Elevated Cardiac Enzymes	15
⑨ No In-Hospital Percutaneous Coronary Invervention	14

Points	
①	
②	
③	
④	
⑤	
⑥	
⑦	
⑧	
⑨	

Total Risk Score _____ (Sum of Points)

Mortality Risk _____ (From Plot)



REACH REGISTRY
REduction of Atherothrombosis for Continued Health

Predicting the risk of events in stable outpatients with atherothrombosis
The REACH risk score calculator

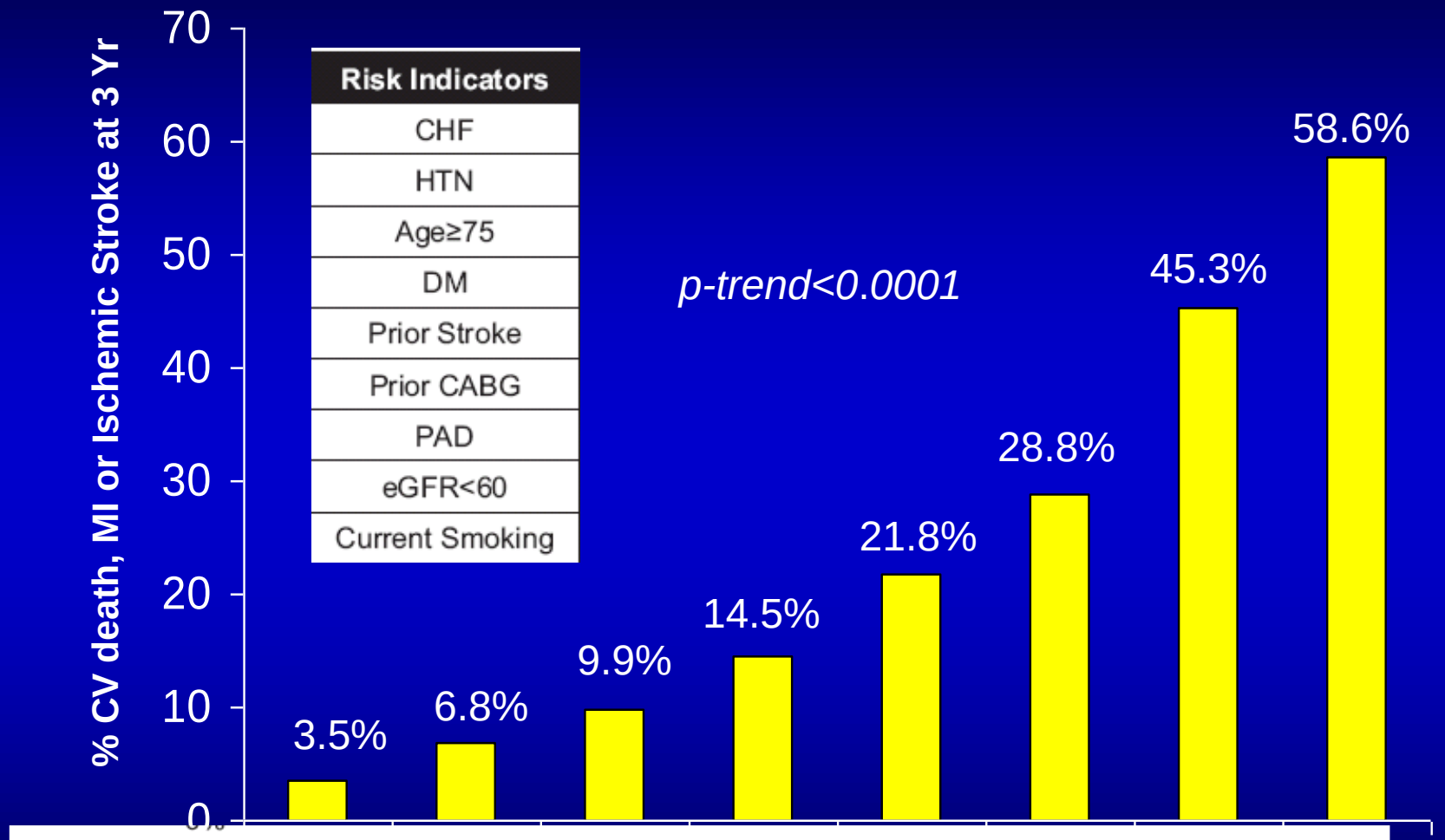
Risk score sheet
2 year CV death/MI/stroke

Step	Factor	Status and Points Assigned	Points
1	Age (years)	30-39 (-4) 40-49 (-2) 50-59 (0) 60-69 (2) 70-79 (4) 80-89 (6)	
2	Smoking	No (0) Yes (2)	
3	Diabetes mellitus	No (0) Yes (3)	
4	Number of vascular beds	One (0) Two (1) Three (3)	
5	CV event in past year	No (0) Yes (2)	
6	Congestive heart failure	No (0) Yes (3)	
7	Statin therapy	No (0) Yes (-2)	
8	Aspirin therapy	No (0) Yes (-1)	
9	TOTAL POINTS		

TOTAL Pts	2 Year Risk
-7	1.1%
-6	1.3%
-5	1.5%
-4	1.8%
-3	2.1%
-2	2.6%
-1	3.1%
0	3.6%
1	4.3%
2	5.2%
3	6.2%
4	7.3%
5	8.7%
6	10.3%
7	12.3%
8	14.5%
9	17.1%
10	20.1%
11	23.5%
12	27.5%
13	31.9%
14	36.9%
15	42.4%
16	48.3%
17	54.6%
18+	> 60%

PWF. Wilson et al. Am J Med 2012

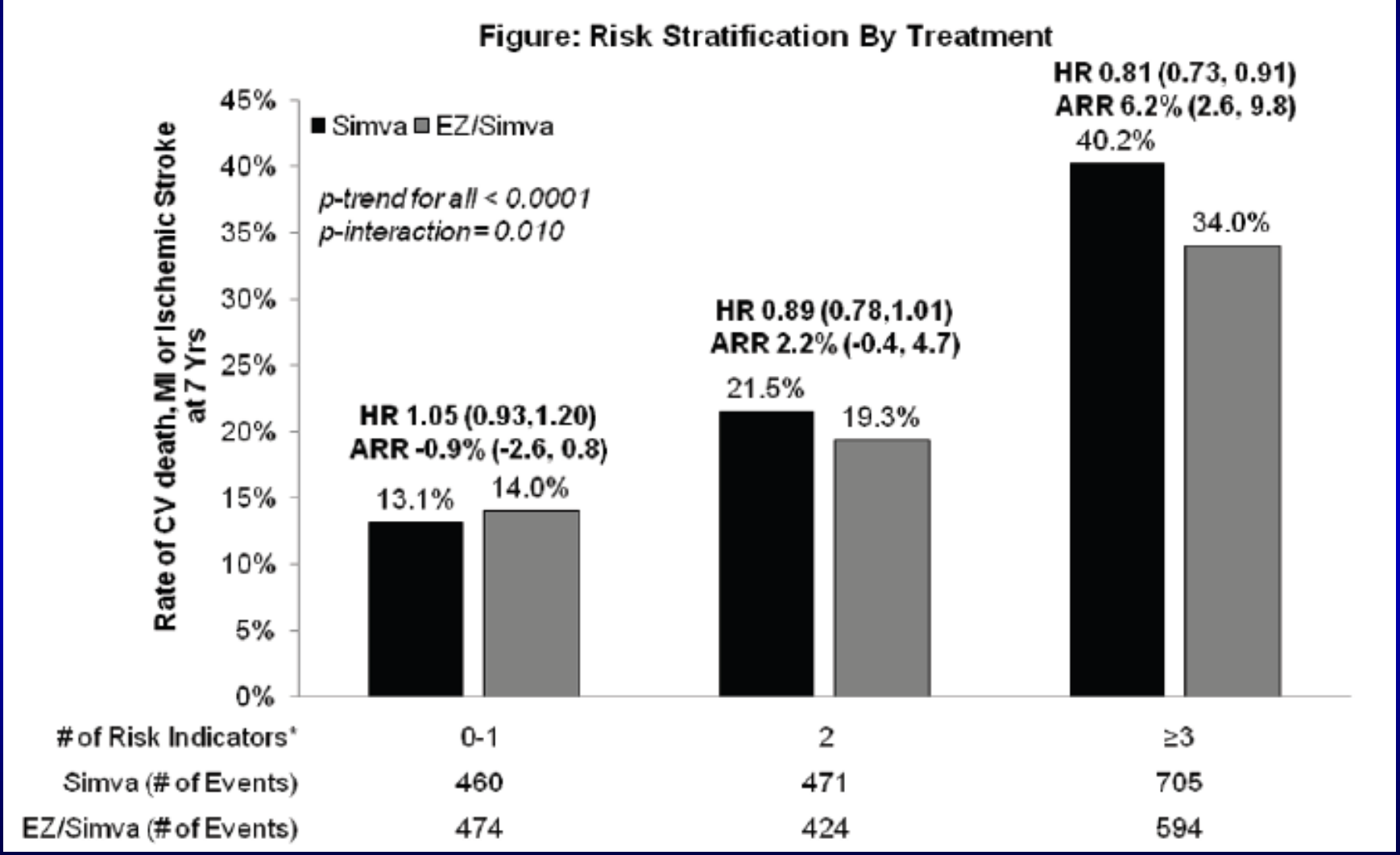
Risk Stratification of CV Death, MI or Ischemic Stroke in Placebo-Treated Patients with Prior MI



# Risk Indicators	0	1	2	3	4	5	6	≥7
Population (N=)	1626	2953	2176	1094	470	179	79	21
% Population	19	34	25	13	5.5	2.1	0.9	0.2
Total Events (n=)	52	178	187	133	87	46	32	9

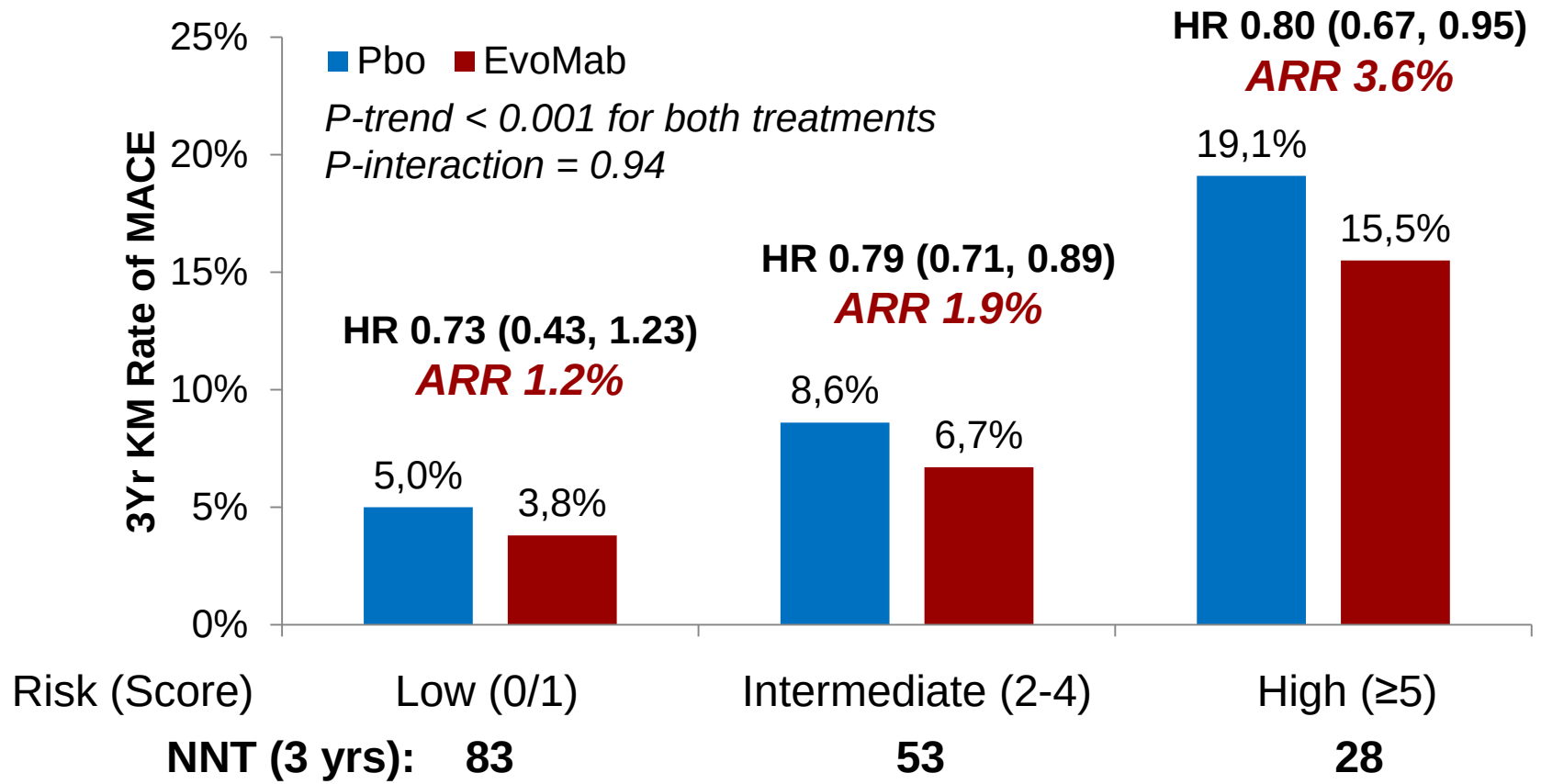
Modified from Bohula EA, et al. Circulation 2016;134:304-13

TIMI TRA2P SIHD Risk Score in IMPROVE-IT



JACC 2016;67(13):P1140-103

MACE by TIMI SIDH Risk Category and Treatment



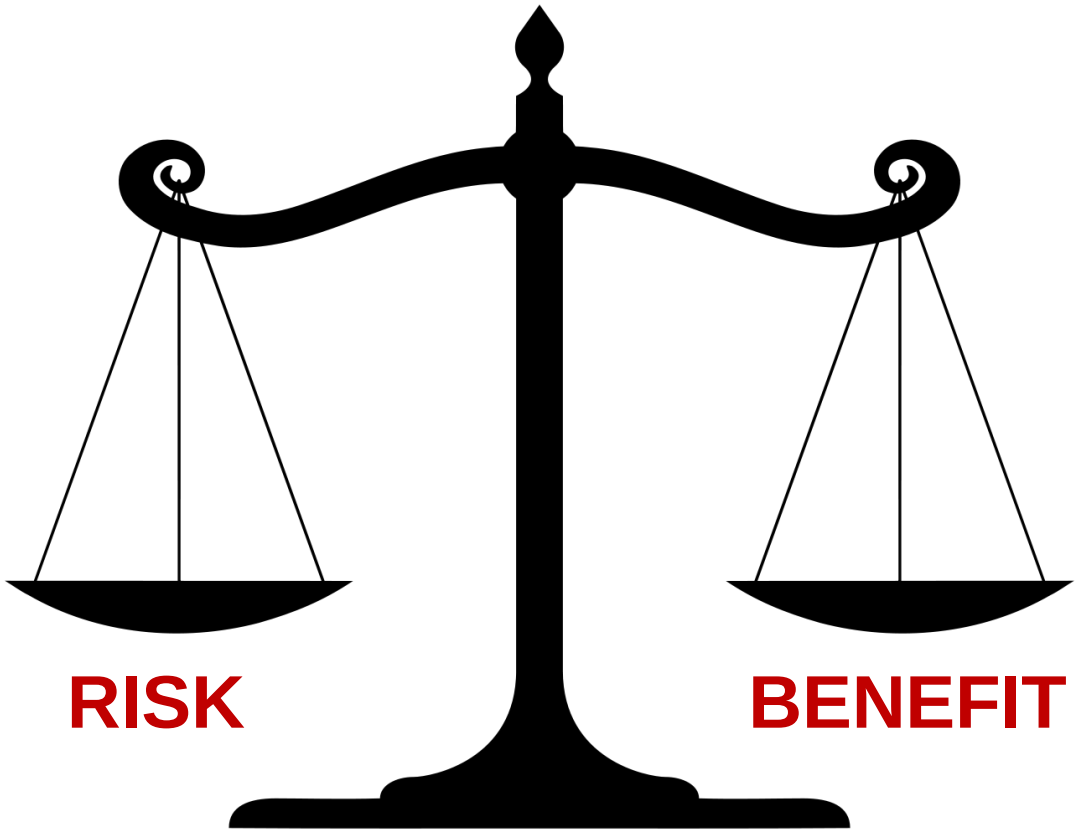
Bohula EA. *Presented at the American Heart Association Scientific Sessions, Anaheim, November 2017*

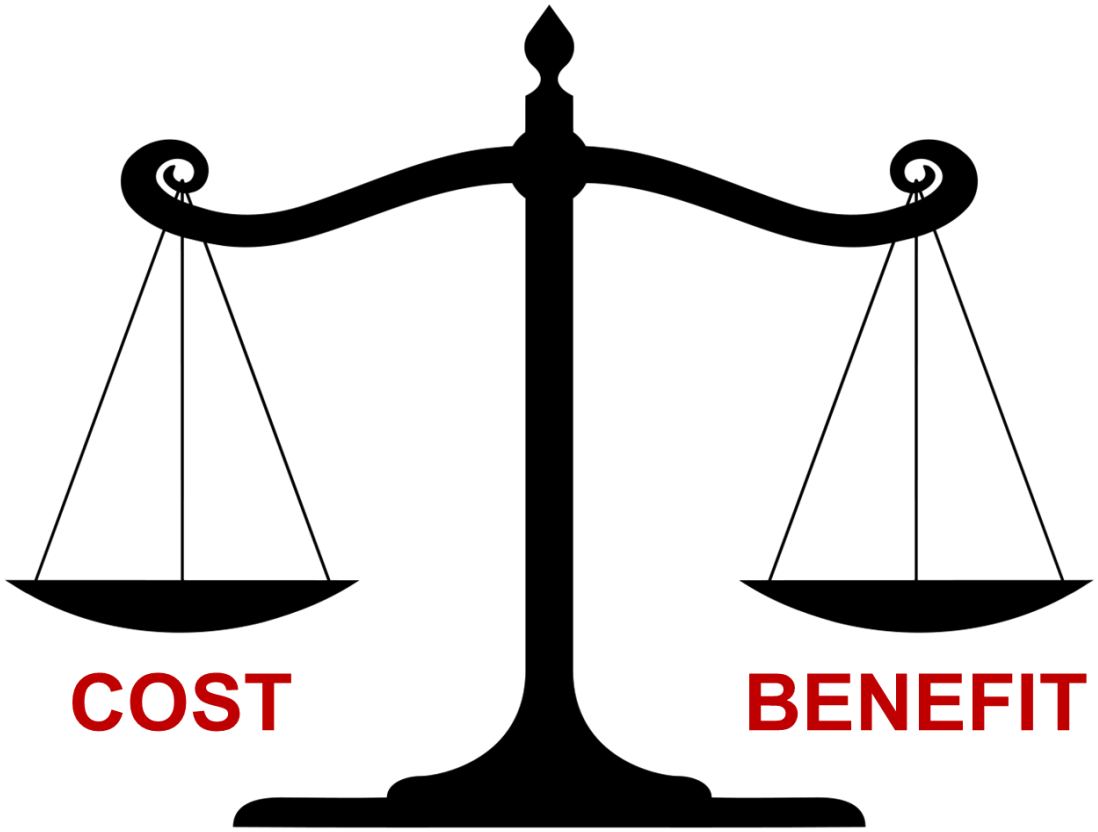
MACE: CV death, MI, stroke

Clinical Features of Atherothrombotic High Risk Patients

- Diabetics
- PAD and CeVD
- Multivessel, extensive CAD
- CABG
- Patients with multiple events
- Patients with recent ACS
- Patients with index event on APT
- Smokers
- Non revascularized (part nSTE ACS)
- High CRP / Lp(a)
- High Risk Scores

High risk patients have a better R/B and C/B ratio





THANK YOU
for your
ATTENTION!