MAYO CLINIC

Is there FREEDOM to Perform PCI in Diabetic Patients with Multivessel Disease?

Malcolm R. Bell, MBBS, FRACP
Torino, IT
September 2013

Conflicts and disclosures - none

MAYO CLINIC

European Forecast for 2030:

Prevalence of Diabetes Mellitus
9.5% of adults
= 64 million patients

Ryden L: EHJ 2013

MAYO CLINIC

Clinical case

- 75 yr old woman with recent onset angina
- Risk factors:
  - DM2 5 years on metformin
  - Dyslipidemia on atorvastatin
  - HT on lisinopril
- CrCl = 49ml/min
- TMET: 3 minutes (angina and ST depression)
  - Duke score -15 (high risk)
- Resting Echo: LVEF 60% with no RWMA

MAYO CLINIC

SYNTAX Score = 17
EuroSCORE = 2.15%
STS score = 1%
(9.3% mortality or morbidity)

MAYO CLINIC

What would you recommend?

MAYO CLINIC

Diabetes and Revascularization of CAD

- Multivessel disease in USA
  - 700,000 pts revascularization per year
  - 25% have diabetes mellitus
- First BARI trial – preference for CABG over PCI
- Subsequent, but *old* trials (BARI-2D, CARDia) and subset of SYNTAX
  - CABG superior
- FREEDOM trial – contemporary practice
  - CABG superior to PCI

MAYO CLINIC

BARI 2D Trial – Key findings at 5 years

Med therapy equivalent to revascularization:
Survival (Primary)
Death, MI or CVA (Secondary)

CABG Stratum
CABG superior to med therapy
only for secondary end point

PCI Stratum
PCI equivalent to med therapy for both end points
-- DES 35%; Thienopyridines 21% --

Frye RL: NEJM 2009

MAYO CLINIC

BARI-2D Medical Therapy Groups

More frequent worsening or new angina

More revascularization
(half within 1st year)

*Dageinas GR: Circ 2011

MAYO CLINIC

SYNTAX Diabetes Group: 5-yr Results

Diabetes compared to no diabetes:

- Higher EuroSCORE
- Similar SYNTAX score
- More lesions treated; smaller vessels

PCI compared to CABG:

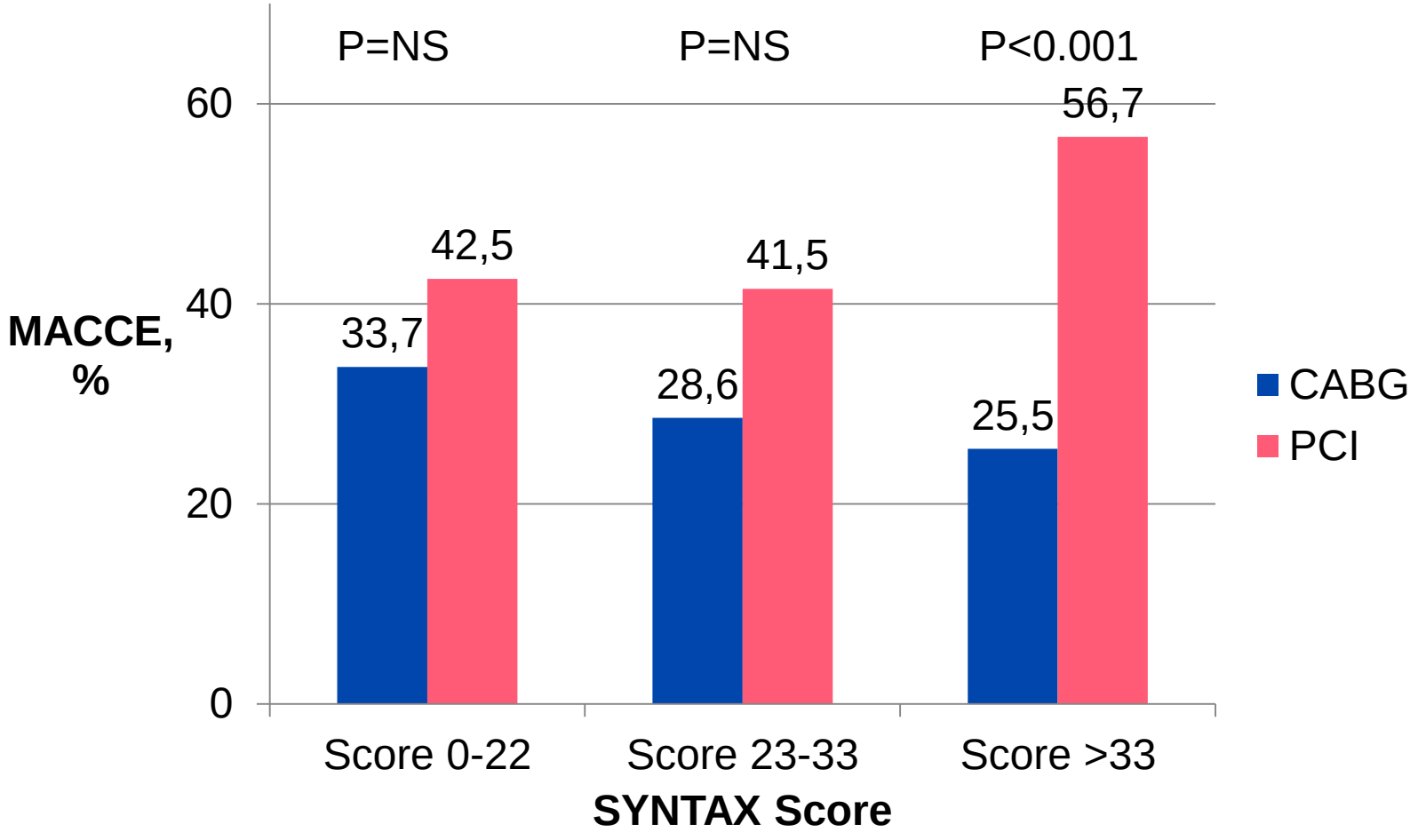
More MACCE + repeat revascularization

Death/MI/CVA not significantly different

Kappetein AP: Eur J Cardio-Thoracic Surg 2013

MAYO CLINIC

Disease Complexity and Outcome among Diabetic Patients in SYNTAX Trial

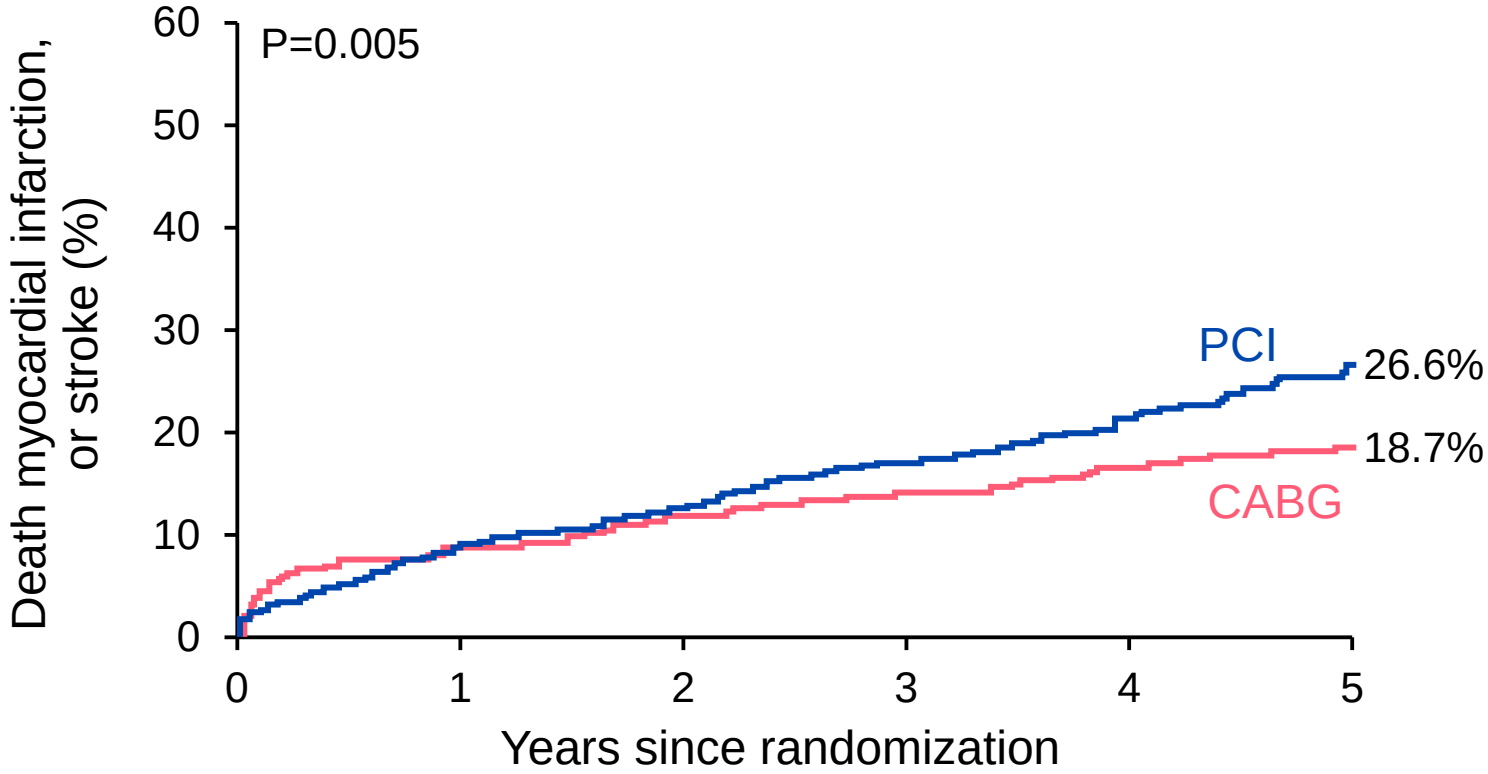


Kappetein AP: Eur J Cardio-Thoracic Surg 2013

MAYO CLINIC

FREEDOM Trial

Primary End Point

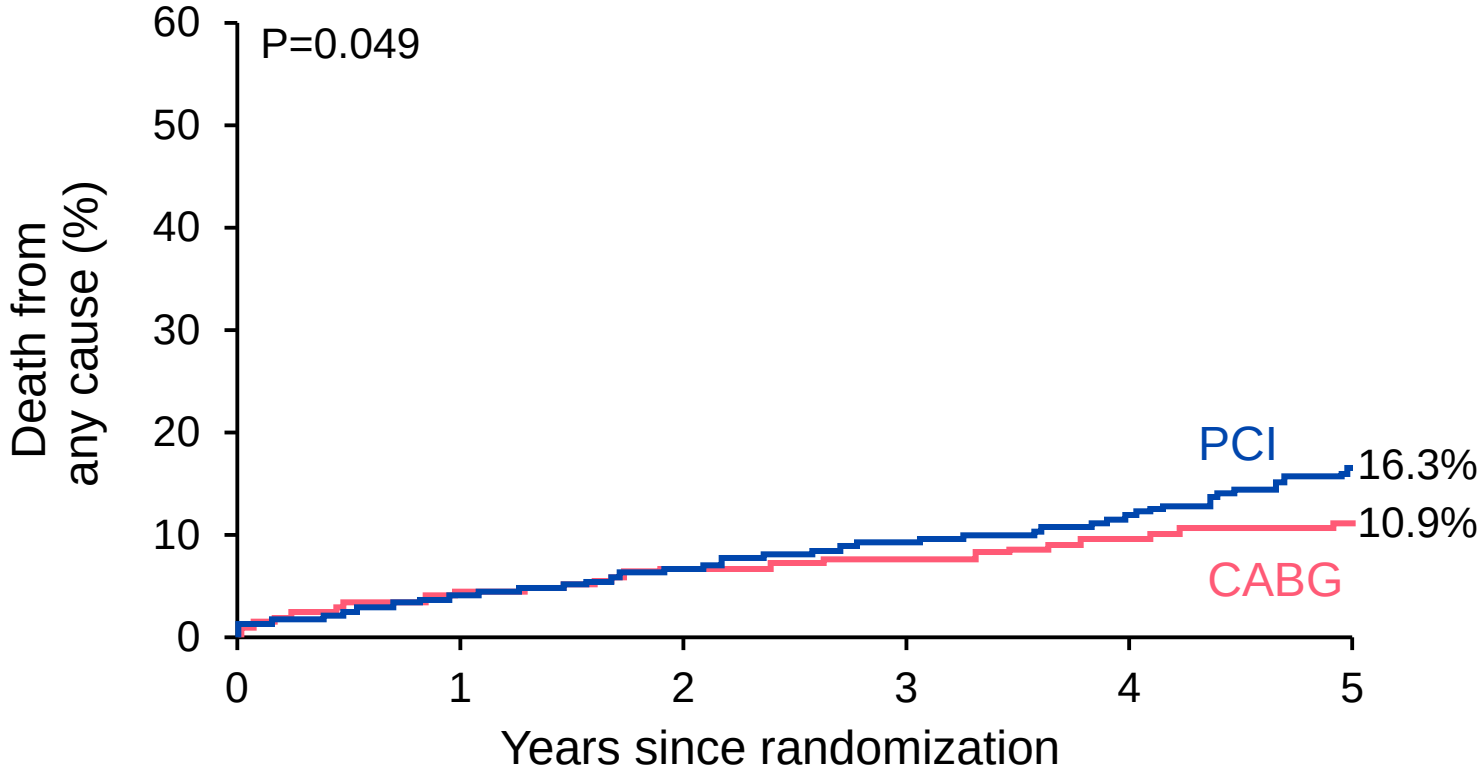


No. at risk						
PCI	953	848	788	625	416	219
CABG	947	814	758	613	422	221

Farkouh ME: NEJM, 2012

MAYO CLINIC

FREEDOM Trial
Mortality



No. at risk						
PCI	953	897	845	685	466	243
CABG	947	855	806	655	449	238

Farkouh ME: NEJM, 2012

MAYO CLINIC

Conclusion:

In carefully selected patients, CABG should be the preferred mode of revascularization for diabetic patients with multivessel disease

MAYO CLINIC

SYNTAX Score = 17
EuroSCORE = 2.15%
STS score = 1%
(9.3% mortality or morbidity)

MAYO CLINIC

Same Clinical Case – risk changed

- Prior TIAs – on ASA
- GFR = 30 ml/min (CKD Stage 3B)
- Echo: LVEF 30%

EuroSCORE II = 8%

STS score = 2.5% mortality

(19% mortality and morbidity)

MAYO CLINIC

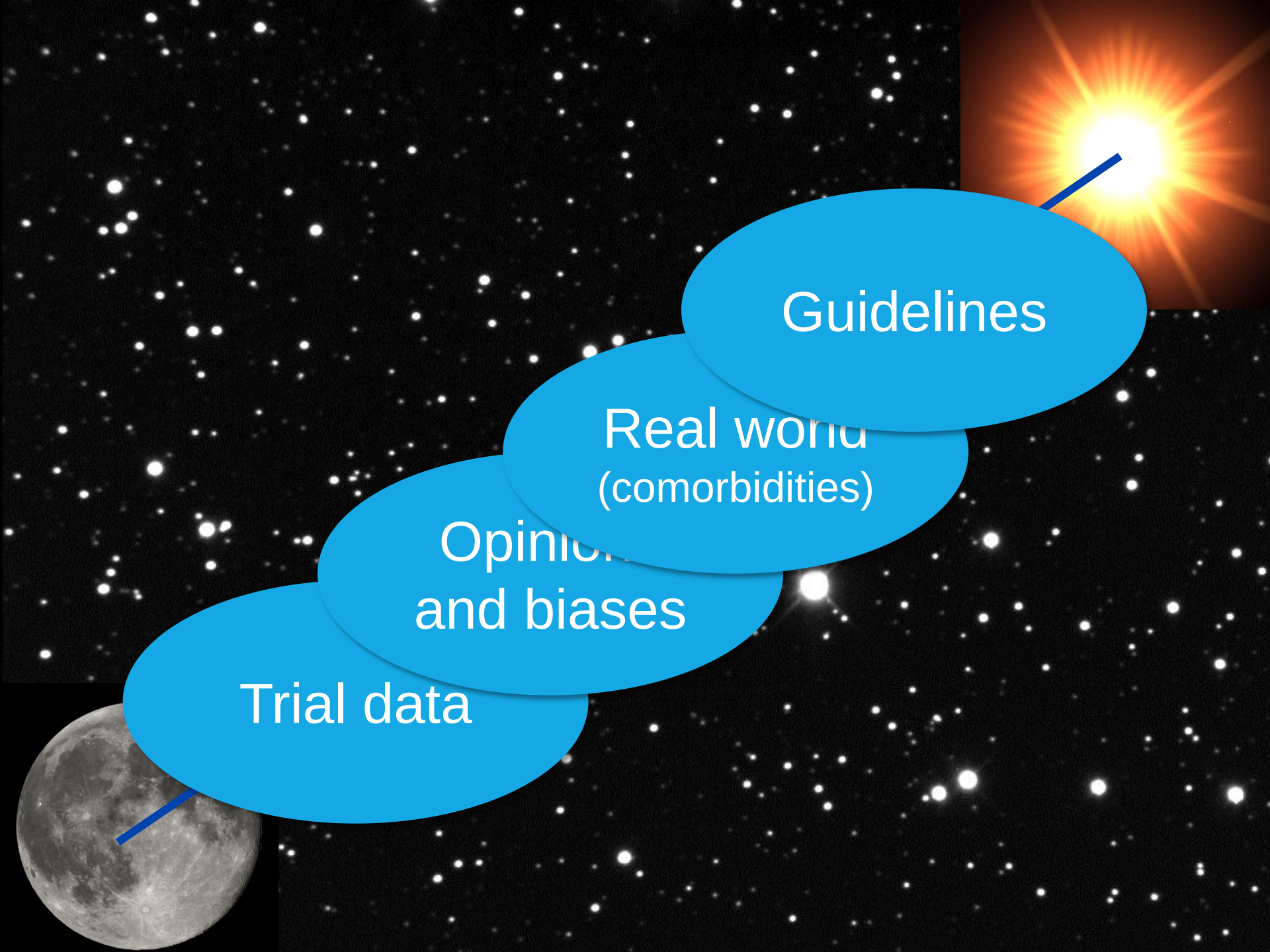
Guidelines

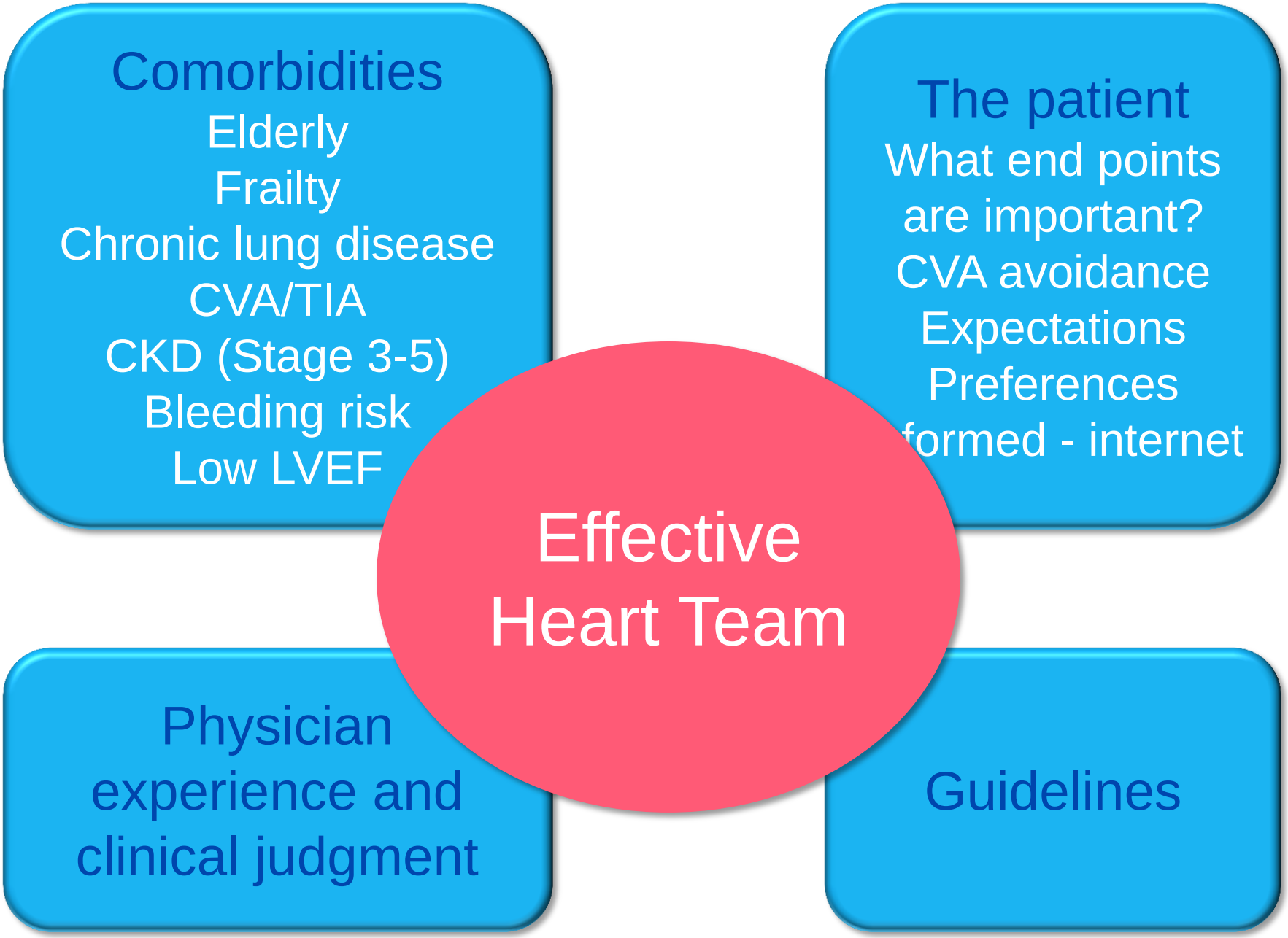
Opinions and biases

Trial data

Real world (comorbidities)

MAYO CLINIC


Guidelines
Real world
(comorbidities)
Opinio
and biases
Trial data


Comorbidities
Elderly
Frailty
Chronic lung disease
CVA/TIA
CKD (Stage 3-5)
Bleeding risk
Low LVEF
The patient
What end points are important?
CVA avoidance
Expectations
Preferences
formed - internet
Effective Heart Team
Physician experience and clinical judgment
Guidelines

MAYO CLINIC

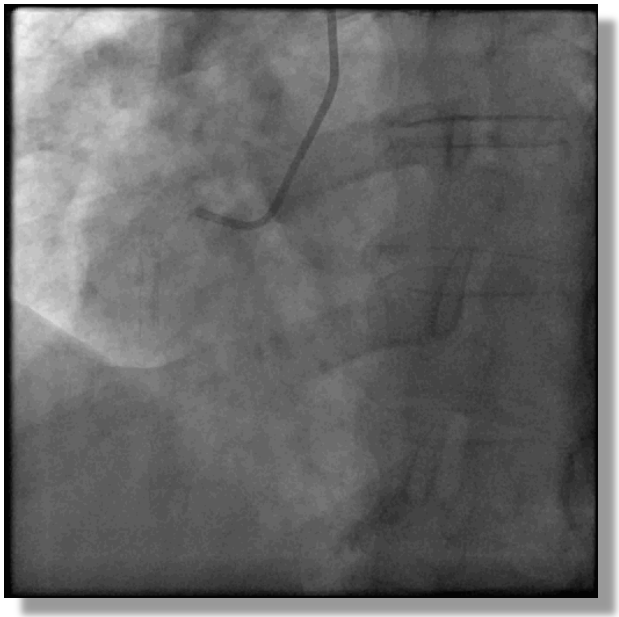
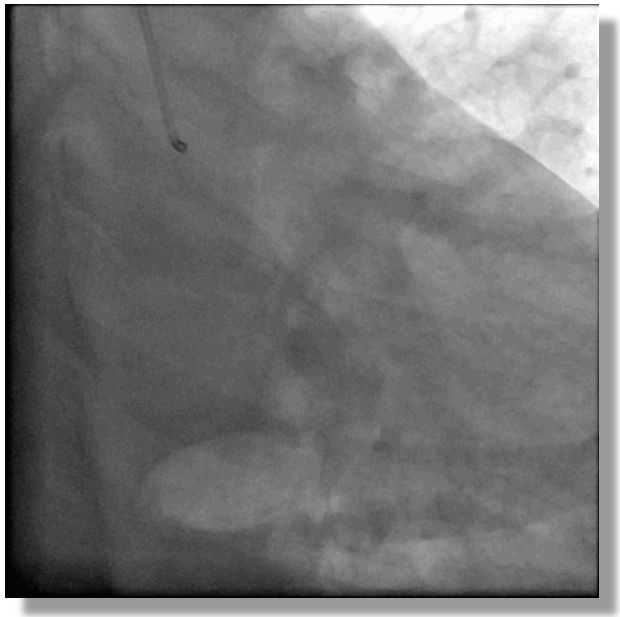
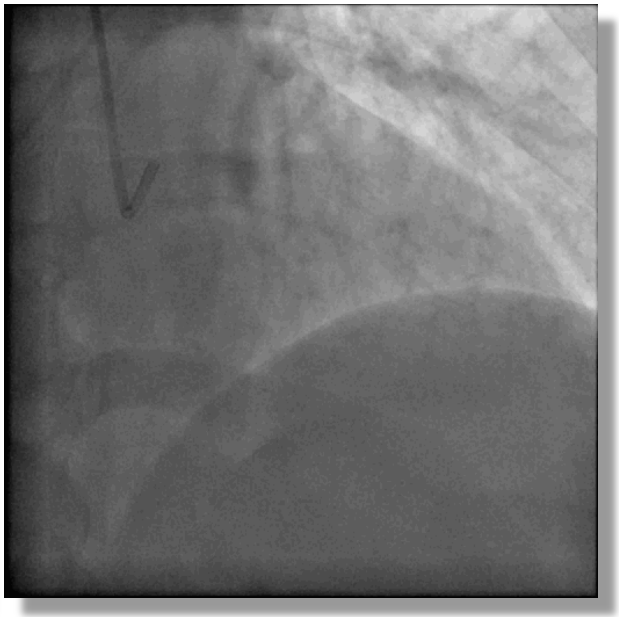
Contemporary PCI

- Use of 2nd and 3rd generation DES
- FFR - functional SYNTAX score
- IVUS for optimal stent results
- Improved antiplatelet therapy

MAYO CLINIC

Is your patient getting the best CABG?

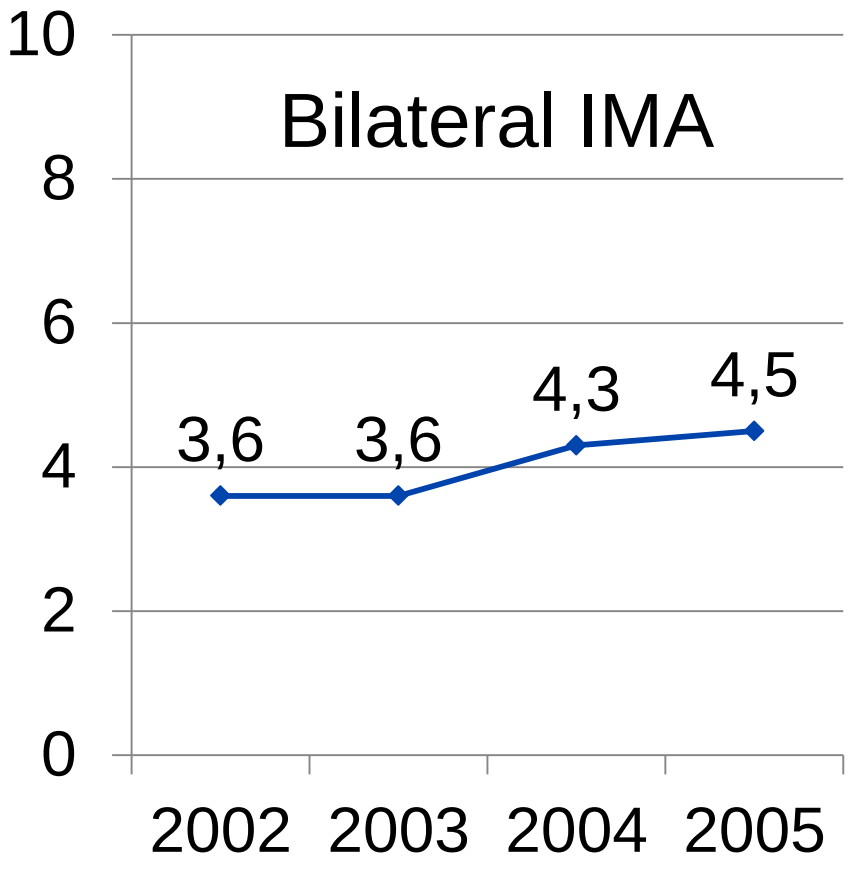
- 69-yr old woman with class III angina
- Diabetes mellitus
- Prior DES to RCA

MAYO CLINIC

Internal Mammary Use in CABG

STS Database – 541,368 patients



Women

35%

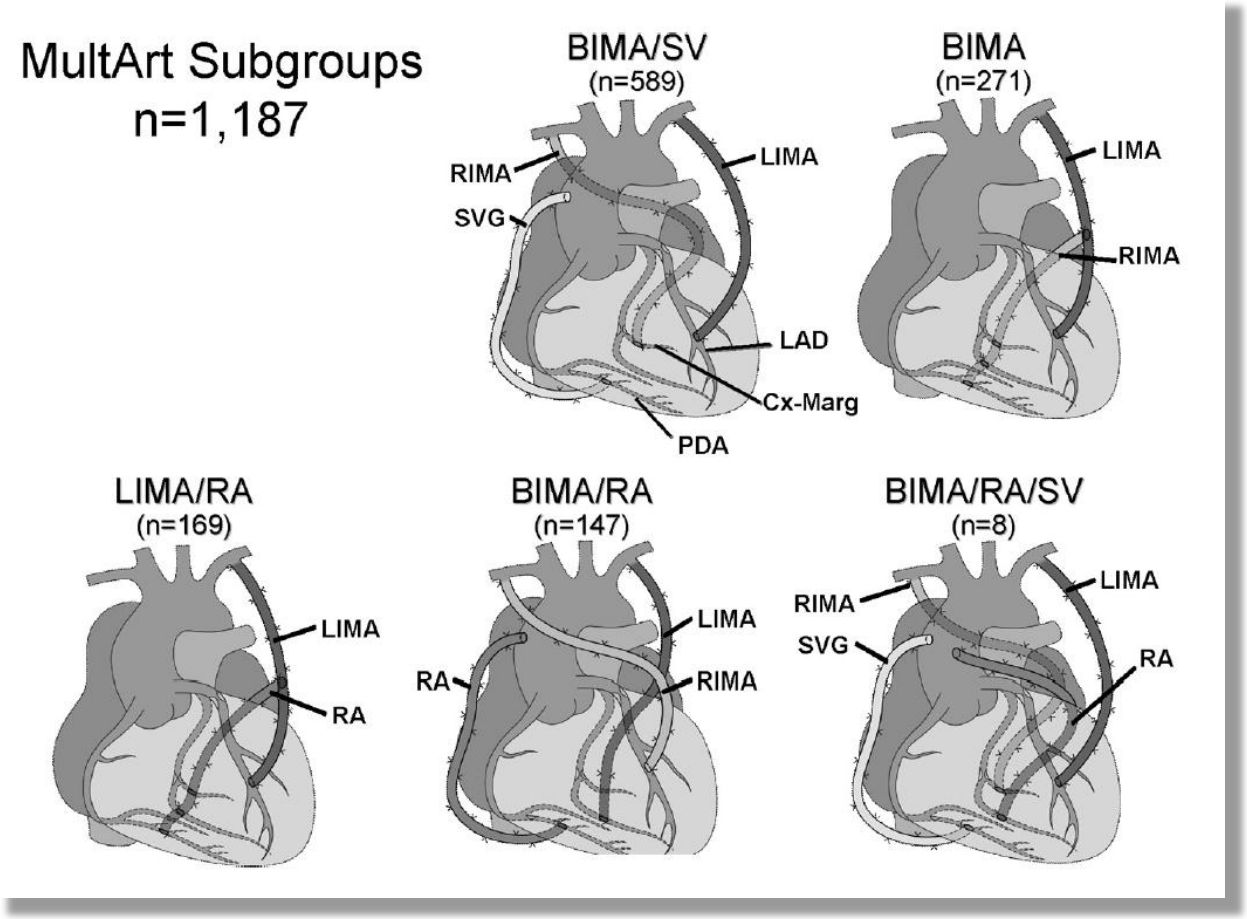
Non white

21%

Tabata M: Circ 2009

MAYO CLINIC

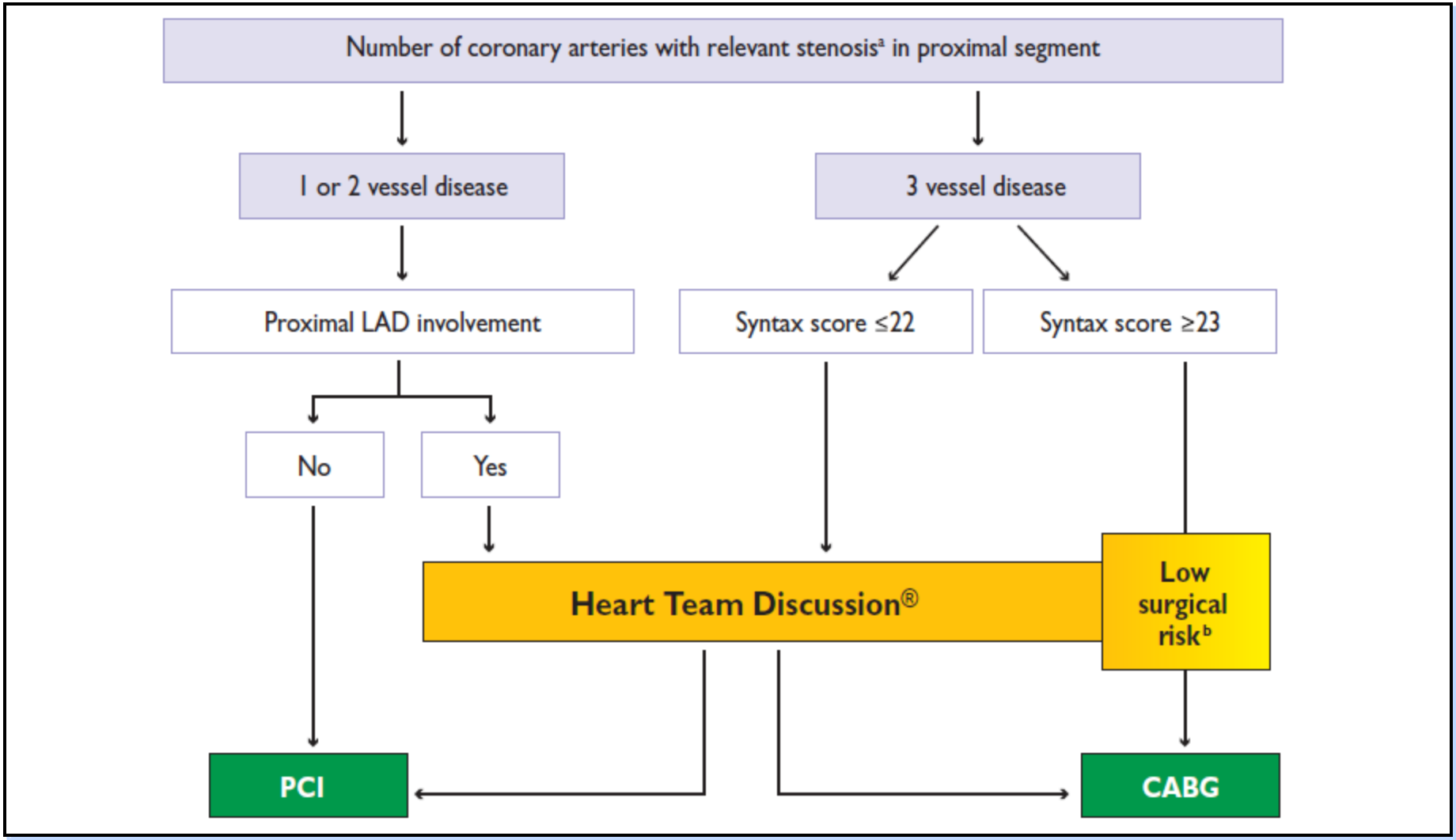
14% Multiple Arterial Grafts in MVD
Mayo Clinic 1993-2009



10 and 15 yr survival better than LIMA/SVG

Locker C: Circ 2012

2013 ESC Guidelines



Montalescot G: EHJ 2013