



FREEDOM Follow-On study

AHA 2018

November 11, 2018

Chicago, IL

Valentin Fuster, MD PhD

Funded by the Joseph and Vicky Safra Foundation

Long-term Survival following Multivessel Revascularization in Patients with Diabetes (FREEDOM Follow-On Study)

Michael E. Farkouh, MD, MSc,^a Michael Domanski, MD,^b George D. Dangas, MD, PhD,^c Lucas C. Godoy, MD,^{a,d} Michael J. Mack, MD,^e Flora S. Siami, MPH,^f Taye H. Hamza, PhD,^f Binita Shah, MD, MS,^g Giulio G. Stefanini, MD,^h Mandeep S. Sidhu, MD,ⁱ Jean-François Tanguay, MD,^j Krishnan Ramanathan, MBCChB,^k Samin K. Sharma, MD,^c John French, MBCChB, PhD,^l Whady Hueb, MD, PhD,^d David J. Cohen, MD, MSc,^m Valentin Fuster, MD, PhD,^{c,n} for the FREEDOM Follow-On study investigators



Introduction

- **In 2012, the FREEDOM trial demonstrated that, in patients with DM and MVD, CABG leads to a reduction in all-cause mortality, MI and stroke at a median follow-up of 3.8 years when compared with PCI-DES.**
 - **Follow-up beyond 5 years after coronary revascularization trials is unusual, owing to a lack of funding and logistical obstacles.**
 - **The objective of the FREEDOM Follow-On study was to examine long-term all-cause mortality in patients with DM and MVD enrolled in the original FREEDOM trial.**
-



From The Original FREEDOM Presentation

Limitations of The Trial

On a long term disease, this is a relatively short term study, with a median of 3.8 years.

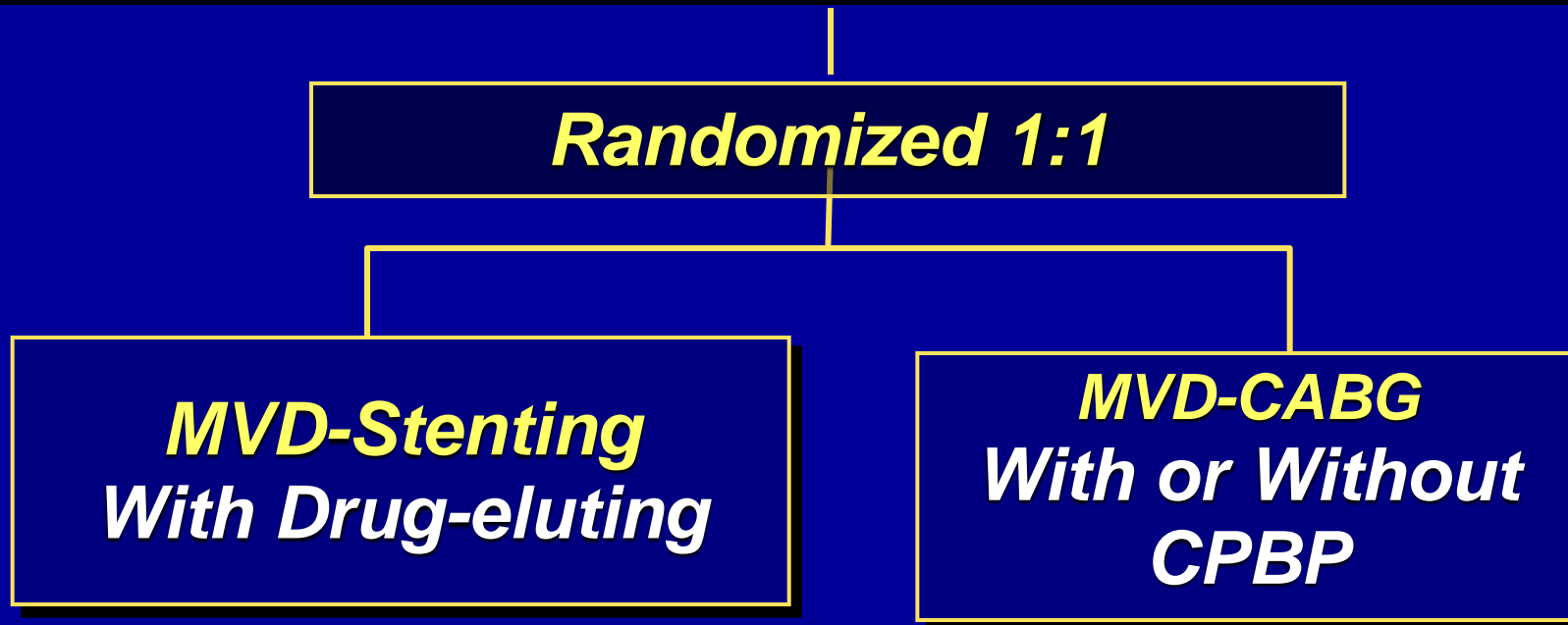
Longer term follow up of FREEDOM will lead to better understanding of the comparative benefit by CABG, specifically on mortality



FREEDOM: Design

Eligibility: DM patients with MVD eligible for stent or surgery

Exclude: Patients with acute STEMI; severe HF; LM disease



All medications shown to be beneficial were encouraged, including: clopidogrel, ACE inhib., ARBs, b-blockers, statins



Revascularization Management

- **CABG:** The use **LIMA** to the **LAD** was recommended in all patients. **Conventional CABG** with CPBP and cardioplegic arrest or **off-pump** with beating heart was left to the surgeon's judgement.
 - **DES:** For all lesions, only one type.
 - **Antithr:** **ASA 325 mg + Clopidogrel. \geq 300 mg load ,**
ASA 81-100 mg + Clopidogrel. 75 mg/day, 1yr
-

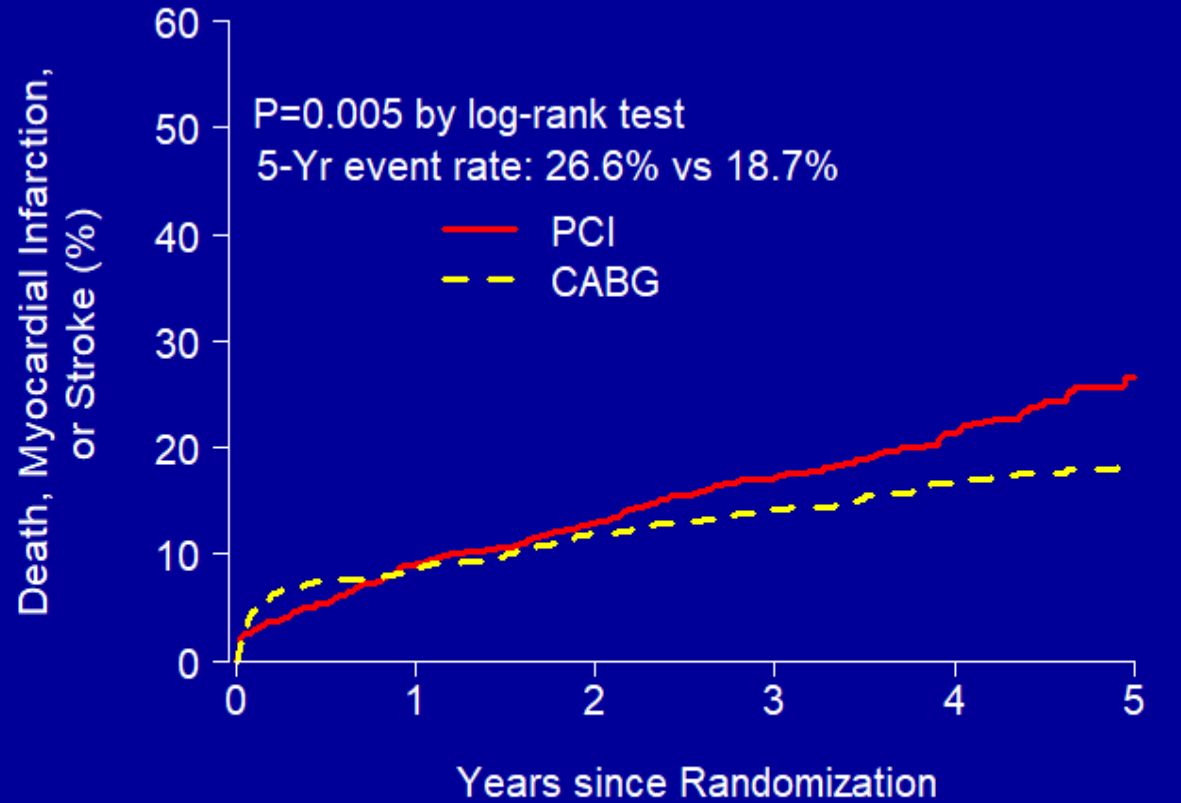


FREEDOM: Results

Duration: median FU 3.8 yrs

**Final Sample Size: N= 1900
(953 PCI-DES, 947 CABG)**

**Primary Outcome:
Composite of earliest :
All cause mortality, Non-
fatal MI, Non-fatal Stroke
26.6% vs 18.7% (P=0.005)**



Number of patients at risk

PCI	953	848	788	625	416	219
CABG	947	814	758	613	422	221

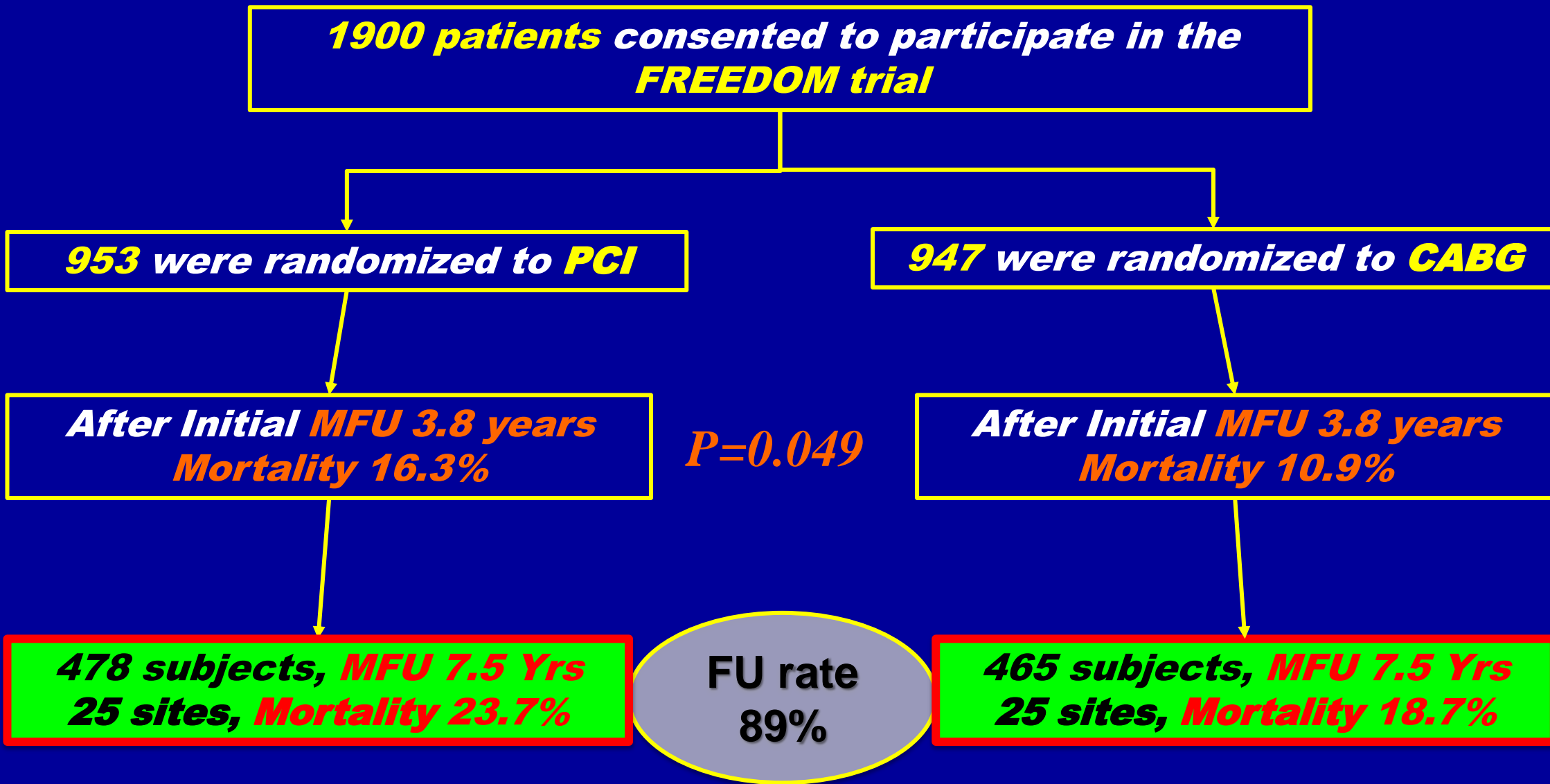


FREEDOM Follow-On study

- ***After completion of FREEDOM in 2012, patients and centers were invited to participate in the FREEDOM Follow-On study, with a mean 7.5 years***
 - ***Twenty-five centers agreed to participate, resulting in 943 patients or 49.6% of the original cohort***
 - ***Patients were consented to be contacted annually by phone or mail and/or to ascertain their vital status by the medical record or national death registries***
-

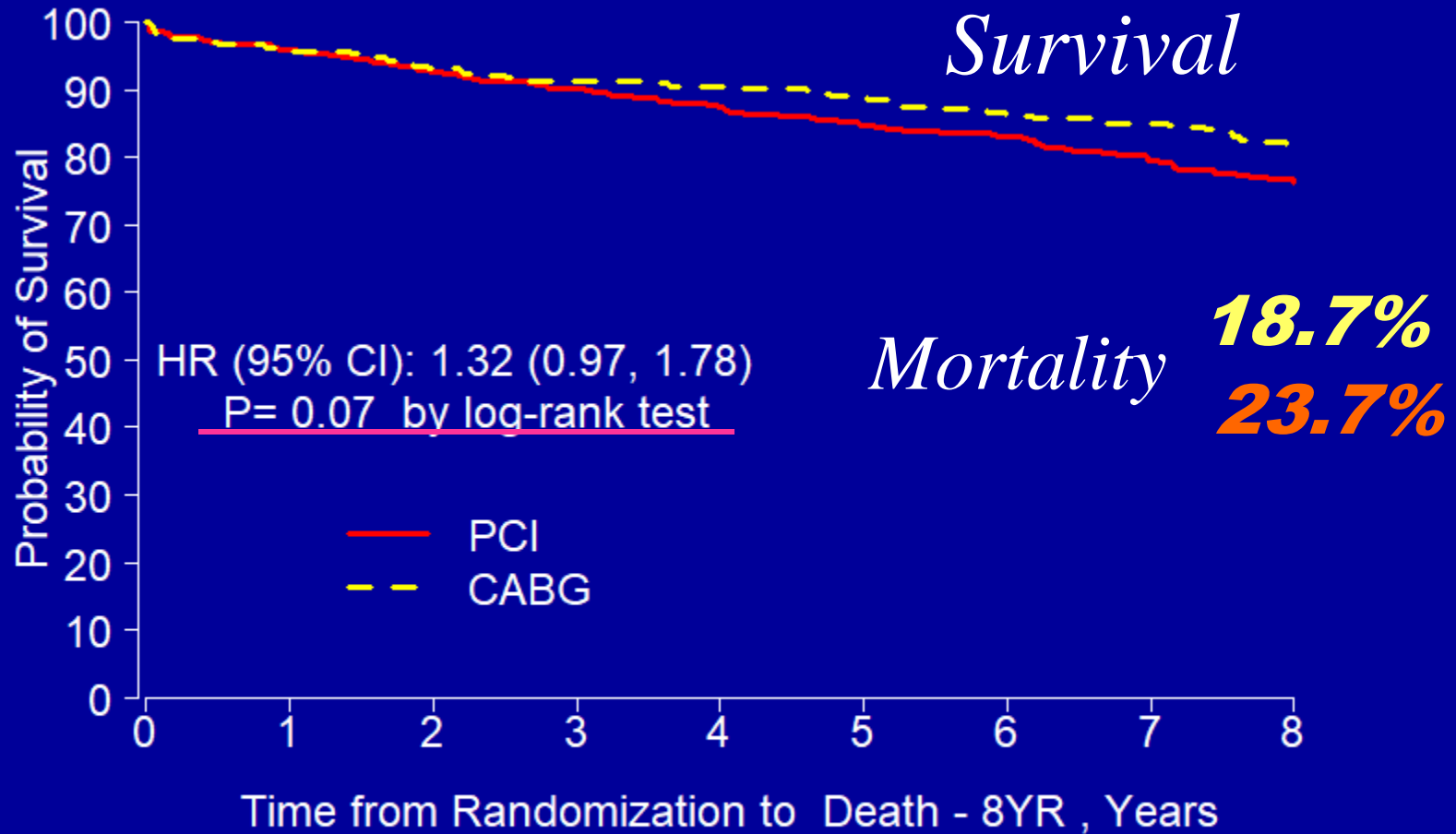


FREEDOM trial and FREEDOM Follow-on study





All-cause Mortality – Extended Follow-up Cohort



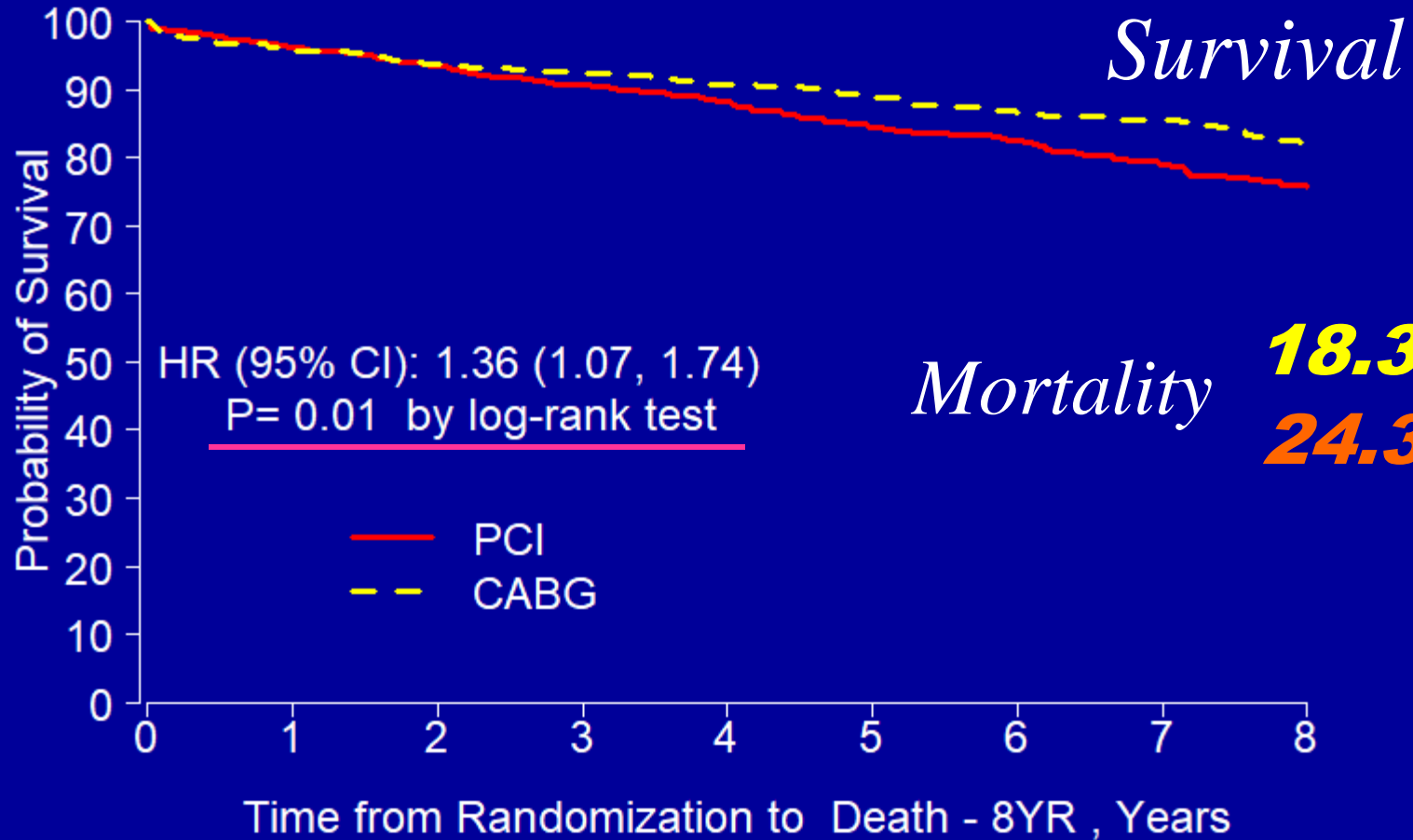
Number of patients at risk

PCI	478	449	429	405	384	358	326	260	206
CABG	465	427	409	391	373	342	303	252	191

n= 943 patients



All-cause Mortality – Whole FREEDOM Cohort



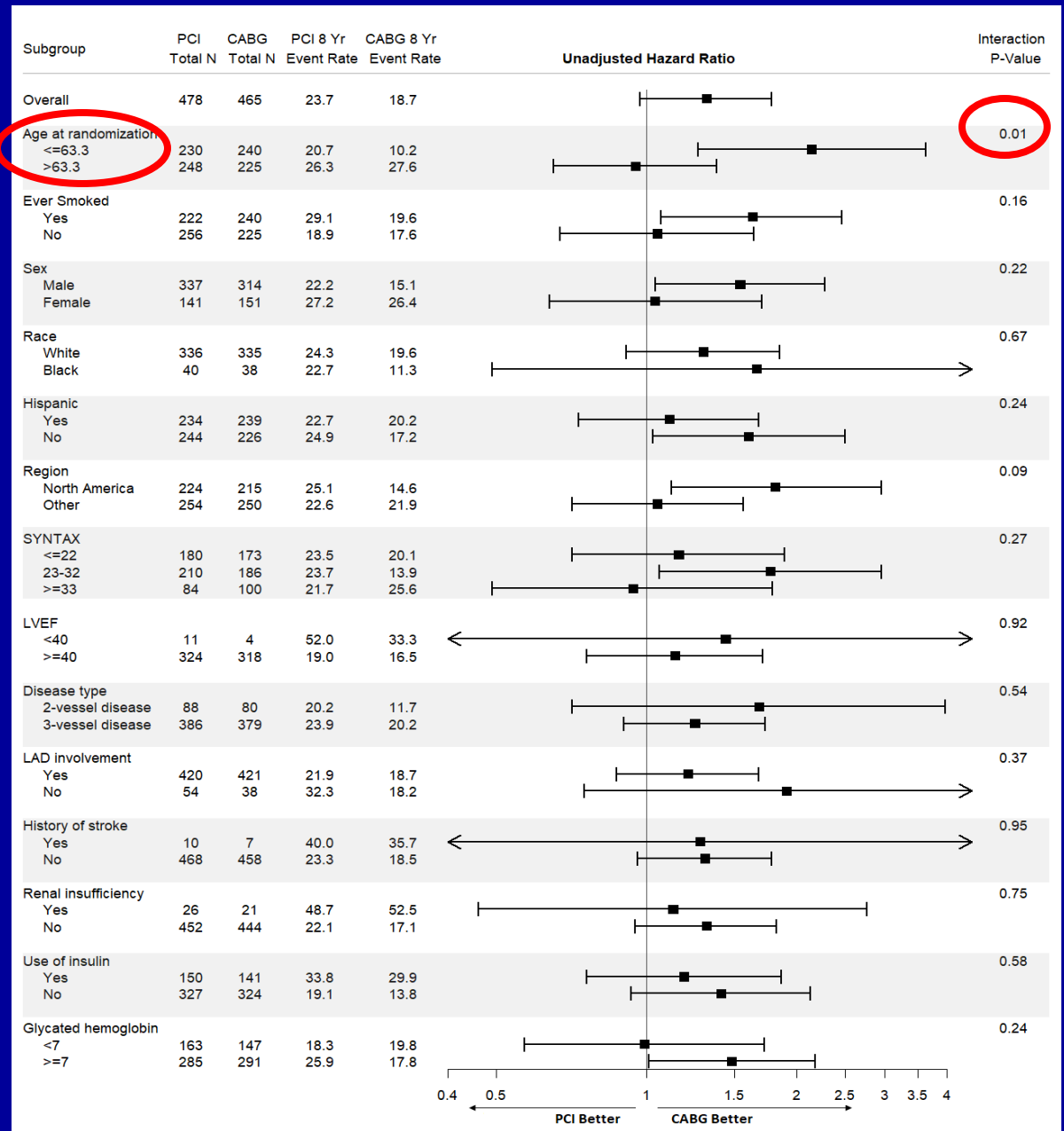
Number of patients at risk

PCI	953	897	845	745	611	460	333	260	206
CABG	947	854	807	721	589	445	313	252	191

n= 1900 patients



Subgroup Analyses – Extended Follow-up Cohort





Conclusion

- *In patients with diabetes and advanced CAD, CABG remains superior to PCI-DES in reducing all-cause mortality at a follow-up of 8 years*
 - *The survival benefit of CABG was consistent across most of the subgroups and younger patients may benefit more from CABG*
 - *These data support current recommendations that CABG be considered the preferred strategy for patients with DM and MVD*
-



Limitations of the FREEDOM Follow-On

- **The cohort of patients with extended follow-up included only *half (49.6%) of the population* in the original FREEDOM Trial (but no such lost in FU)**
 - ***Newer generation stents* were developed after the FREEDOM Trial (but no such reduction in mortality)**
 - ***Medical therapy for DM has evolved in the last decade* as new agents are also associated with reductions in CV outcomes**
 - ***Data about additional revascularization or other endpoints, such as MI and stroke, were not included***
-