Impact of routine Fractional Flow Reserve on management decision and 1-year clinical outcome of ACS patients: Insights from the POST-IT and R3F Integrated Multicenter registriEs - Implementation of FFR in Routine Practice (**PRIME-FFR**)

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On behalf of the PRIME-FFR study group

Potential conflicts of interest

Speaker's name: Luis Raposo

☑ **I have the following potential conflicts of interest to report:**

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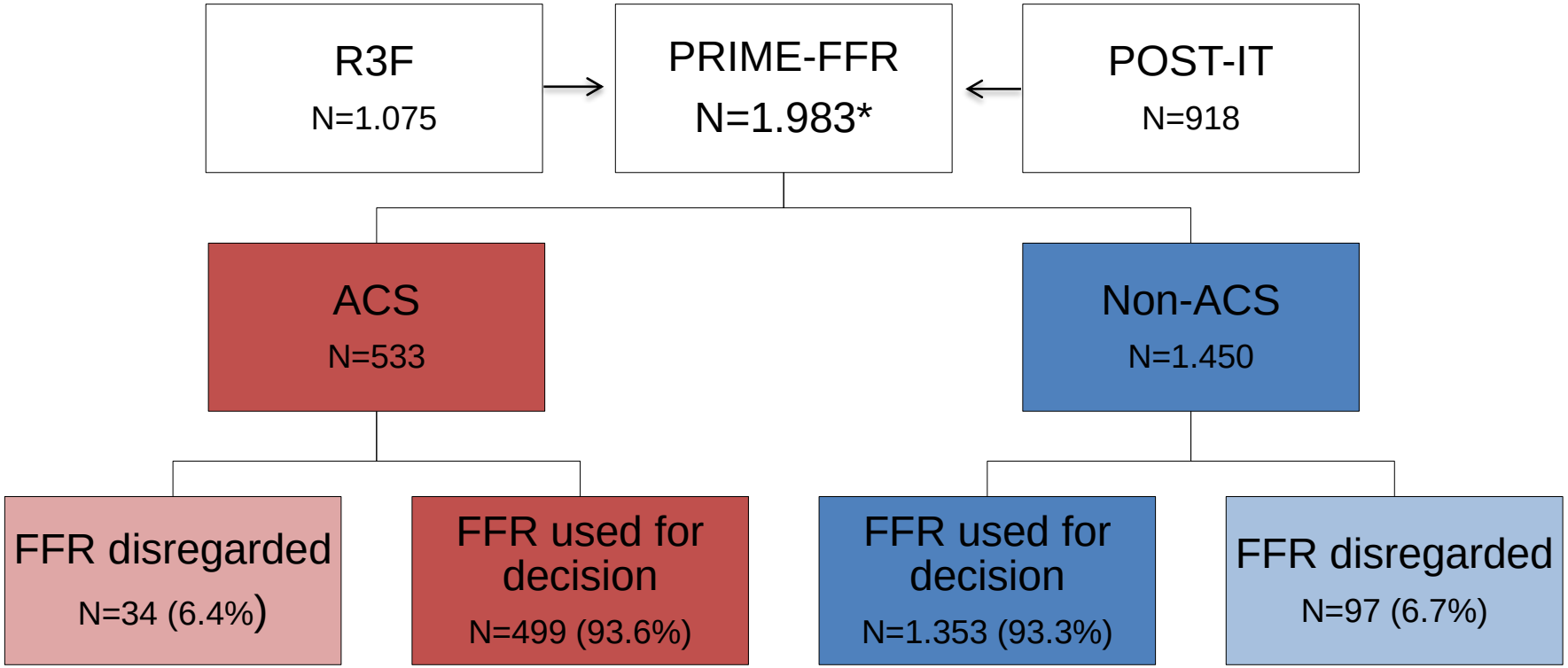
Background

- ✓FFR use is **not firmly established** in patients sustaining an acute coronary syndrome.

- ✓There are no **large randomized trials** specifically assessing the potential role of FFR to guide treatment decisions in ACS patients & its impact on clinical outcomes

Study Design & Endpoints



Impact of FFR on management strategy

Safety of changing treatment strategy

1-year MACE (Total Death/MI/unplanned revascularization)

*FFR result unavailable in 10 patients

Baseline Characteristics

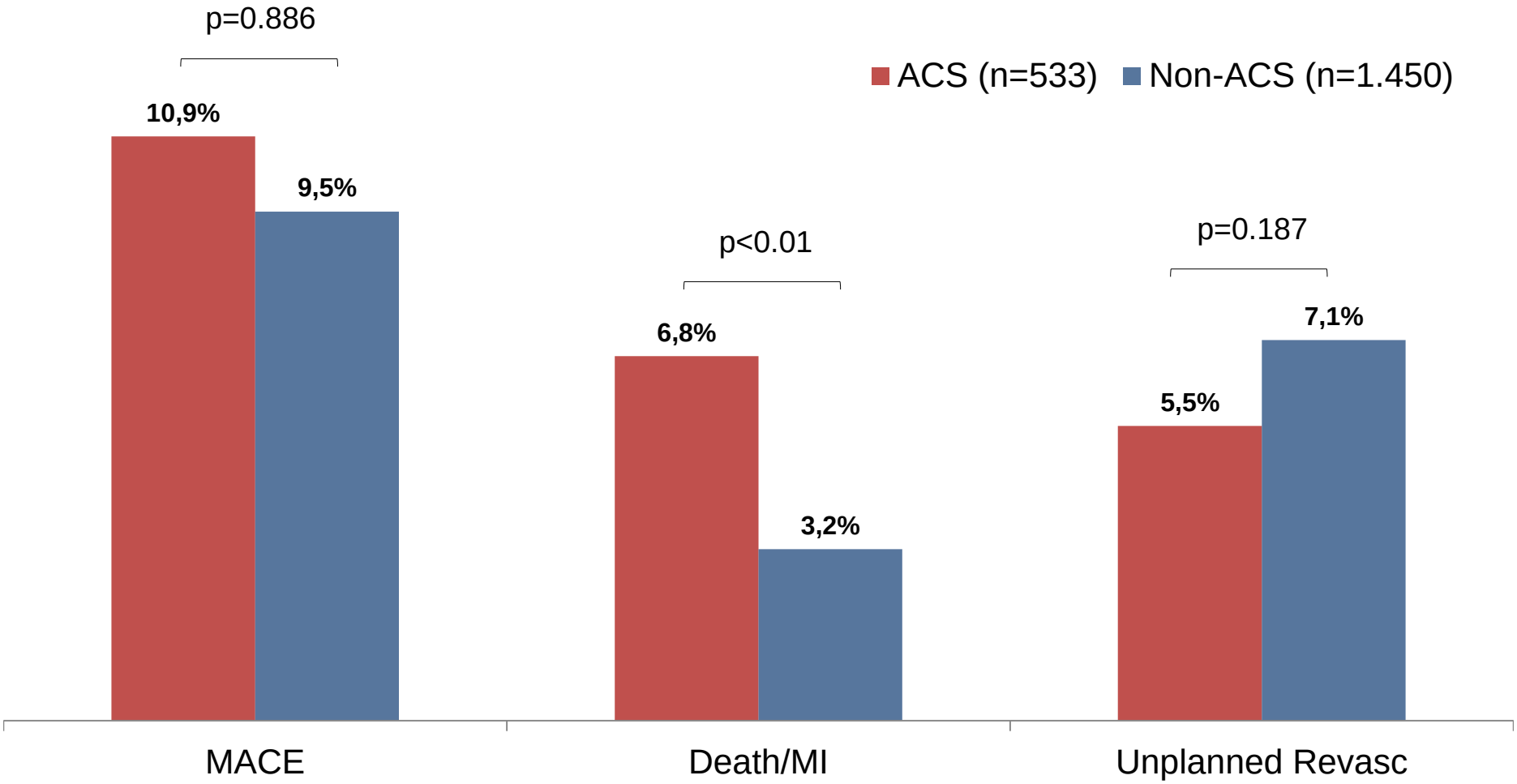
Variable (n;%)	ACS Population	Non-ACS population	*p* value
Age (years) [mean±SD]	**64.0±11.5**	**65.3±10.1**	**0.019**
Male Gender	401 (75.2%)	1102 (76.0%)	0.724
Diabetes mellitus	**160 (30.8%)**	**541 (38.2%)**	**0.003**
Hypertension	**365 (70.3%)**	**1073 (75.7%)**	**0.016**
Smoking (current/former<1year)	234 (43.9%)	558 (38.5%)	0.091
High Cholesterol	**335 (64.9%)**	**1044 (73.8%)**	**<0.001**
Myocardial infarction	**187 (44.3%)**	**360 (31.0%)**	**<0.001**
PCI	199 (47.2%)	538 (46.1%)	0.720
CABG	11 (2.6%)	56 (4.8%)	0.054
Left Ventricular EF ≤50%	84 (15.8%)	249 (17.2%)	0.757
Dual Antiplatelet therapy	314 (60.2%)	742 (51.6%)	<0.001
Statin	398 (76.2%)	1119 (78.0%)	0.402
ACEI/ARB	319 (62.3%)	839 (58.9%)	0.175
Beta-Blockers	318 (61.6%)	880 (61.6%)	0.999
Typical Angina Syndrome	-	562 (38.8%)	<0.001
On-going ACS	**229 (43.0%)**	-	
Recent ACS STEMI	**91 (17.1%)**	-	
Recent ACS NSTEMI/UA	**213 (40.0%)**	-	

euro PCR

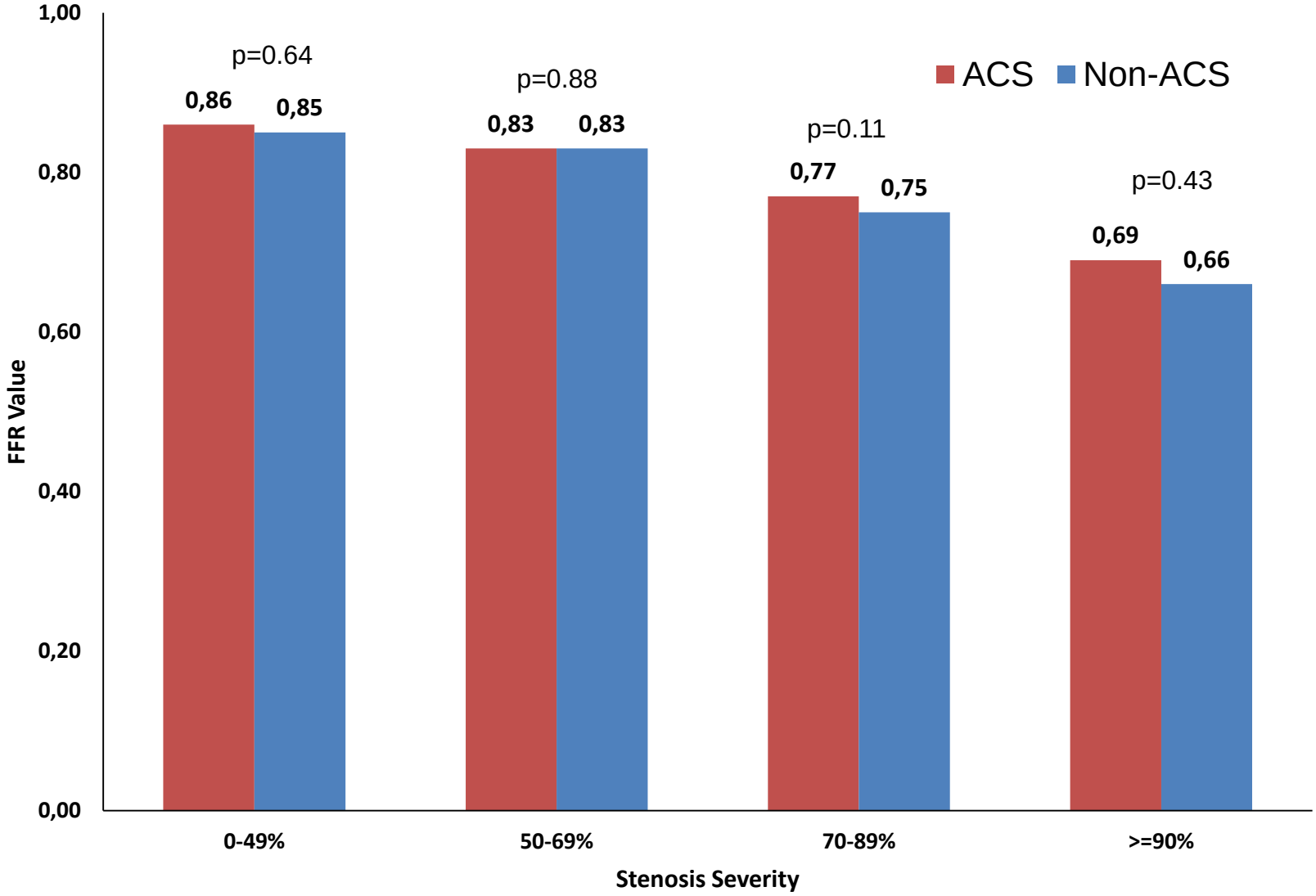
Baseline Characteristics

Variable (n;%)	ACS Population	Non-ACS population	*p* value
Number of diseased vessels (>50%)			
0-1	284 (53.3%)	846 (58.4%)	0.055
2	156 (29.3%)	384 (26.5%)	
3	93 (17.4%)	220 (15.2%)	
Number of lesions evaluated			
1	391 (73.4%)	1049 (72.3%)	0.921
2	103 (19.3%)	300 (20.7%)	
3	31 (5.8%)	81 (5.6%)	
>3	8 (1.5%)	20 (1.4%)	
Lesion Characteristics			
Left Anterior Descending	414 (57.7%)	1146 (57.9%)	0.511
Left Main	32 (4.5%)	117 (5.9%)	0.121
Proximal LAD	125 (17.4%)	389 (19.7%)	0.187
Any proximal lesion	239 (33.3%)	687 (34.7%)	0.485
Lesion - % stenosis [mean±SD]	**57.6±12.4**	**55.4±13.9**	**<0.001**
ACC/AHA Classification B2/C	**310 (43.2%)**	**757 (38.3%)**	**0.020**
Lesions with FFR ≤0.80	288 (40.0%)	786 (39.7%)	0.902

Overall 1-year Clinical Outcome

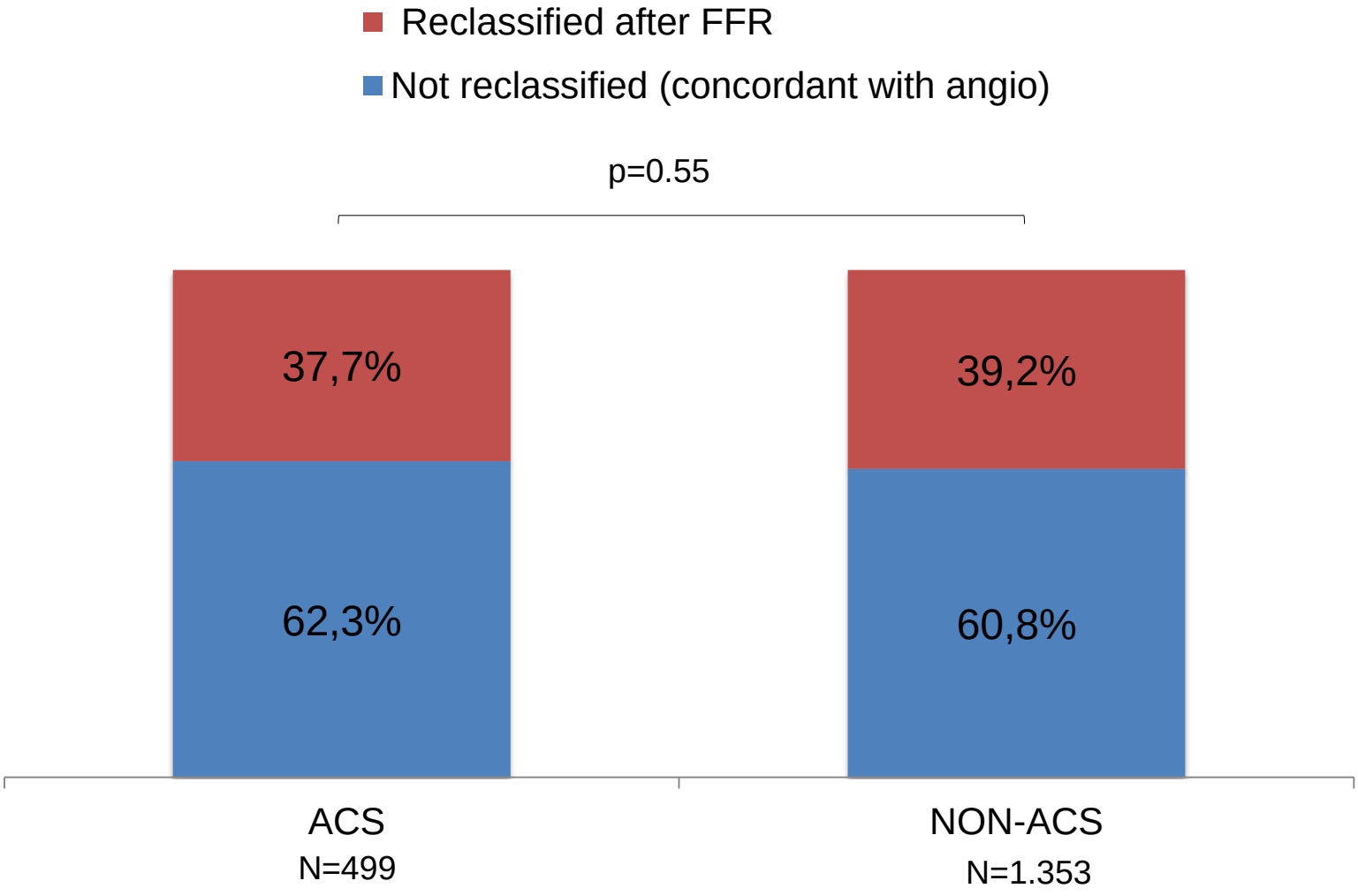


Impact of ACS status on FFR values

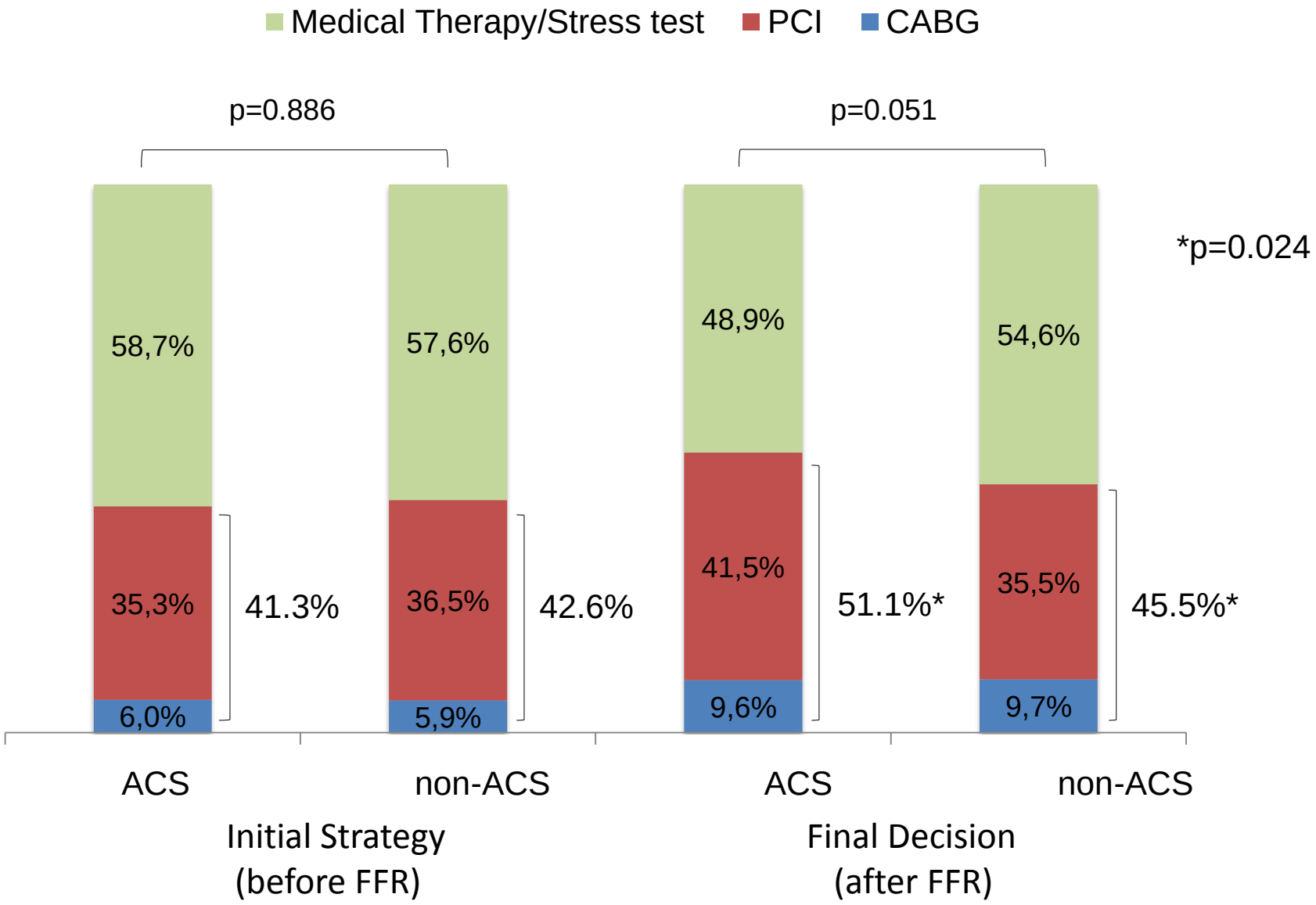


FFR & Treatment strategy change

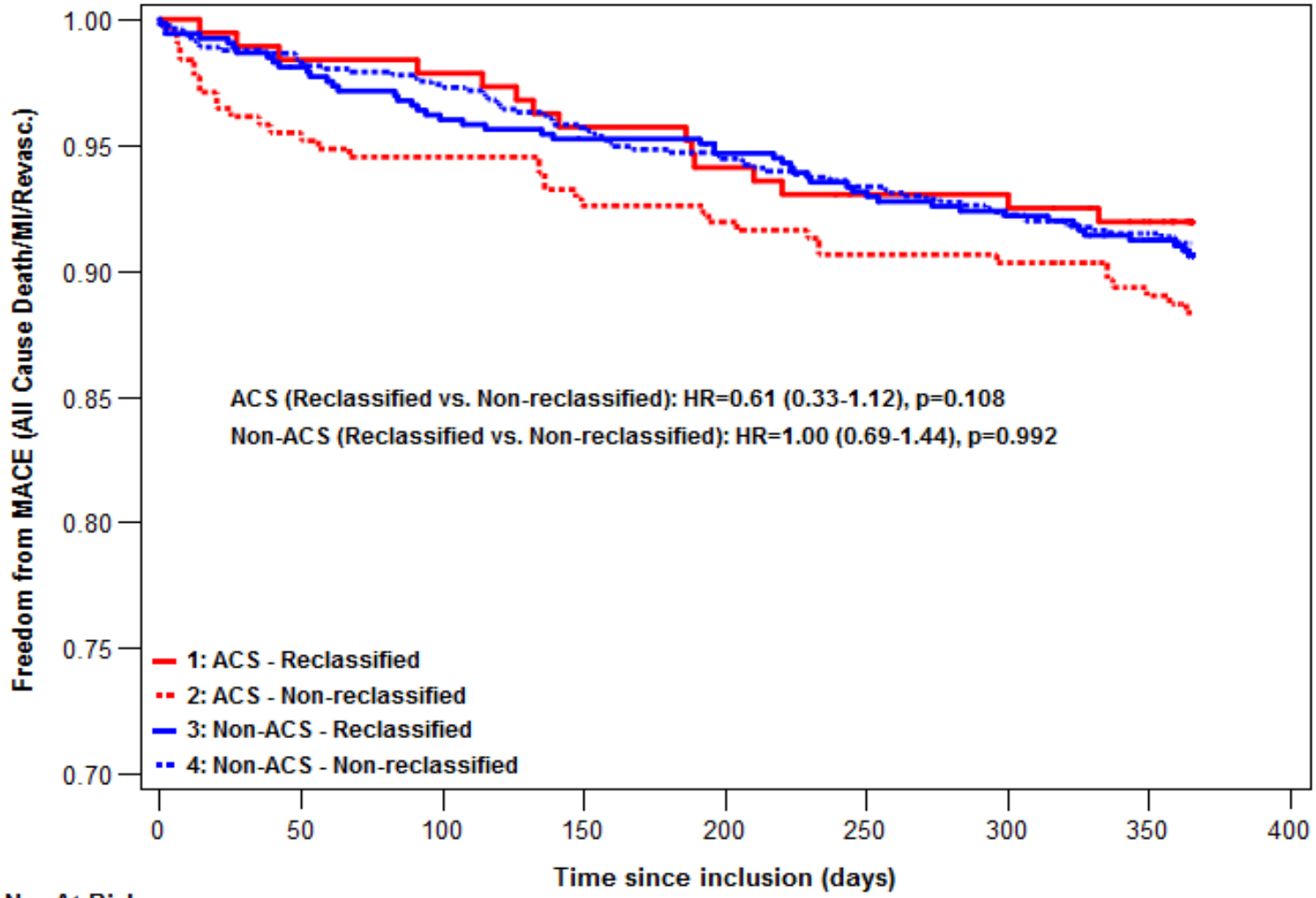
Overall management change in patients in whom FFR was used for decision



FFR & Treatment strategy change



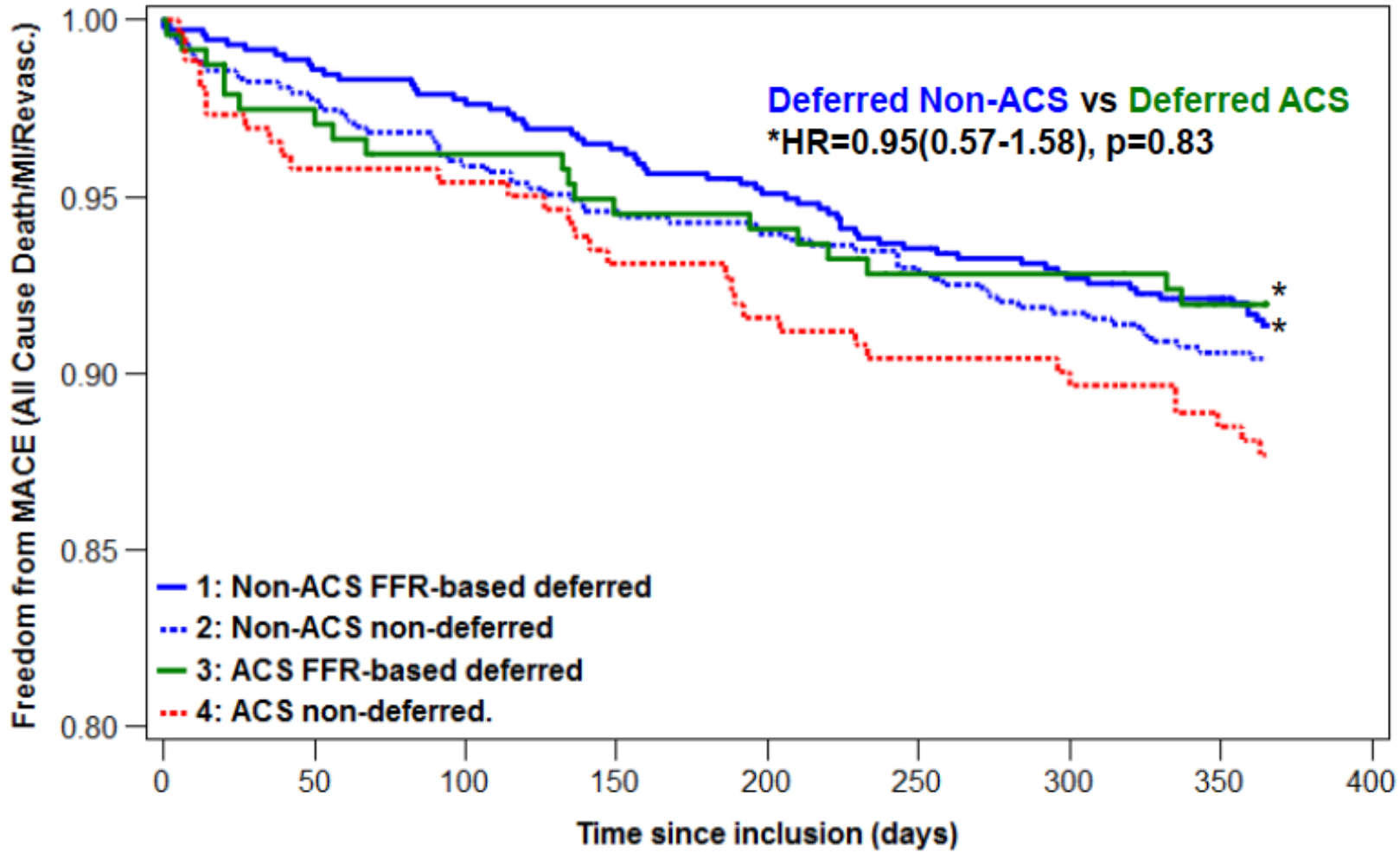
Safety of management strategy change



No. At Risk

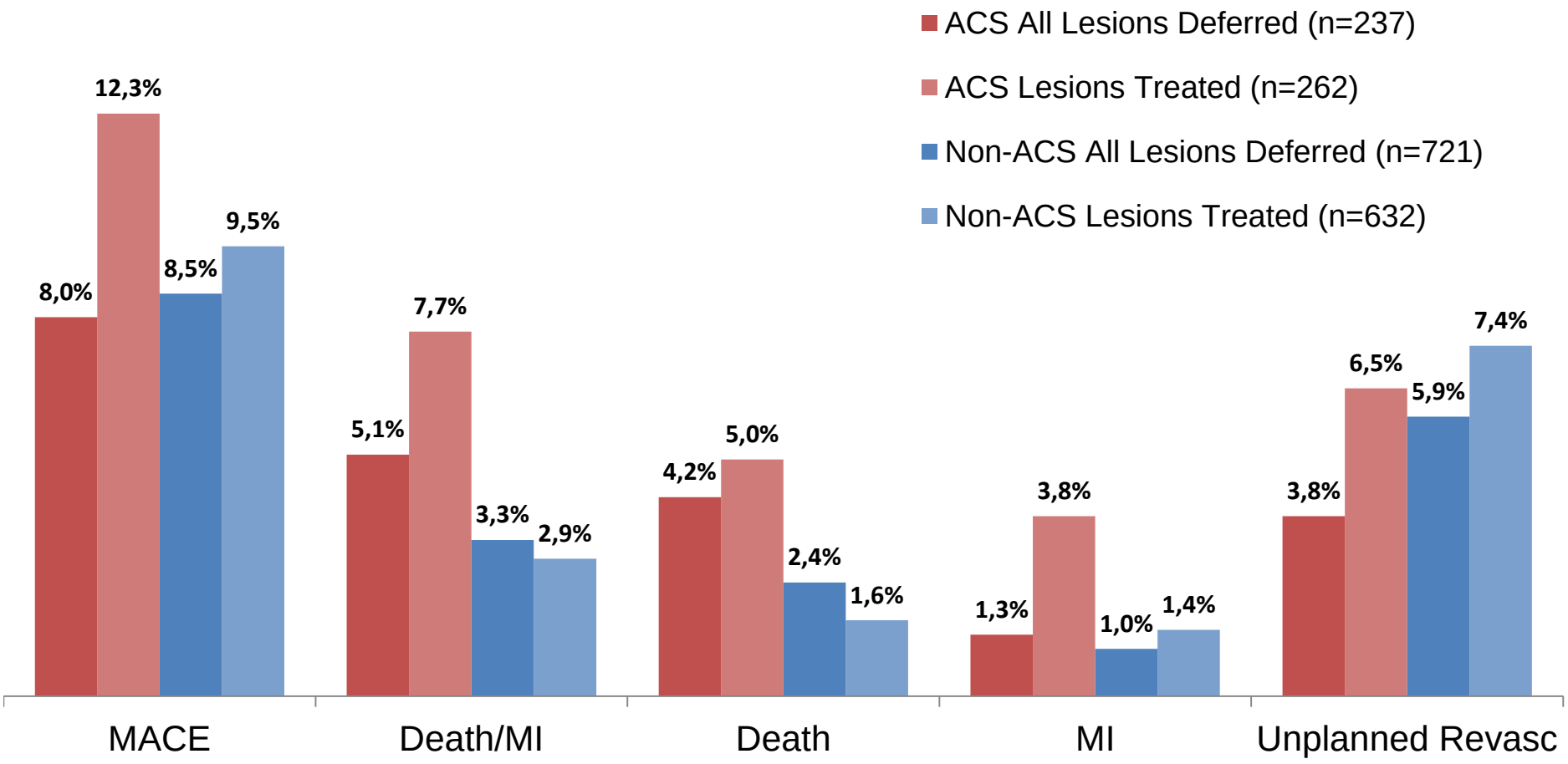
1:	187	184	183	179	176	172	171	165	0
2:	311	296	293	287	285	280	279	270	0
3:	530	516	505	500	496	486	481	468	0
4:	815	799	791	778	766	755	745	724	0

Safety of revascularization deferral

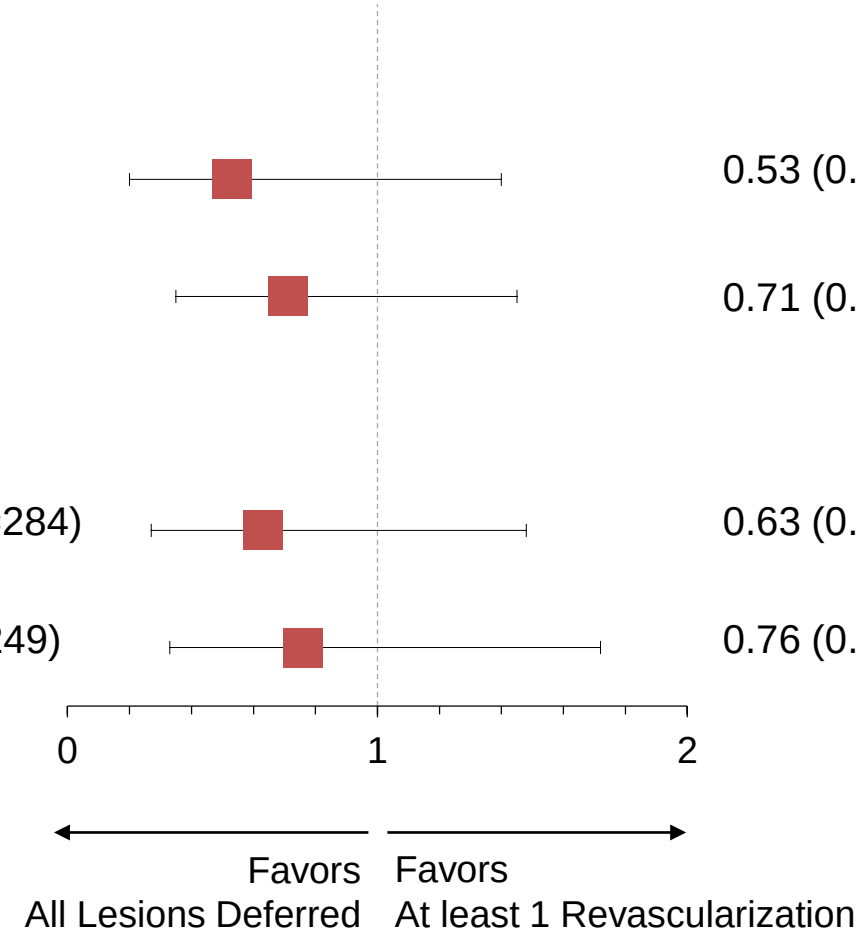


No. At Risk									
1:	716	702	695	686	674	661	653	633	0
2:	629	613	601	592	588	580	573	559	0
3:	237	230	227	223	222	216	216	209	0
4:	261	250	249	243	239	236	234	226	0

Safety of revascularization deferral

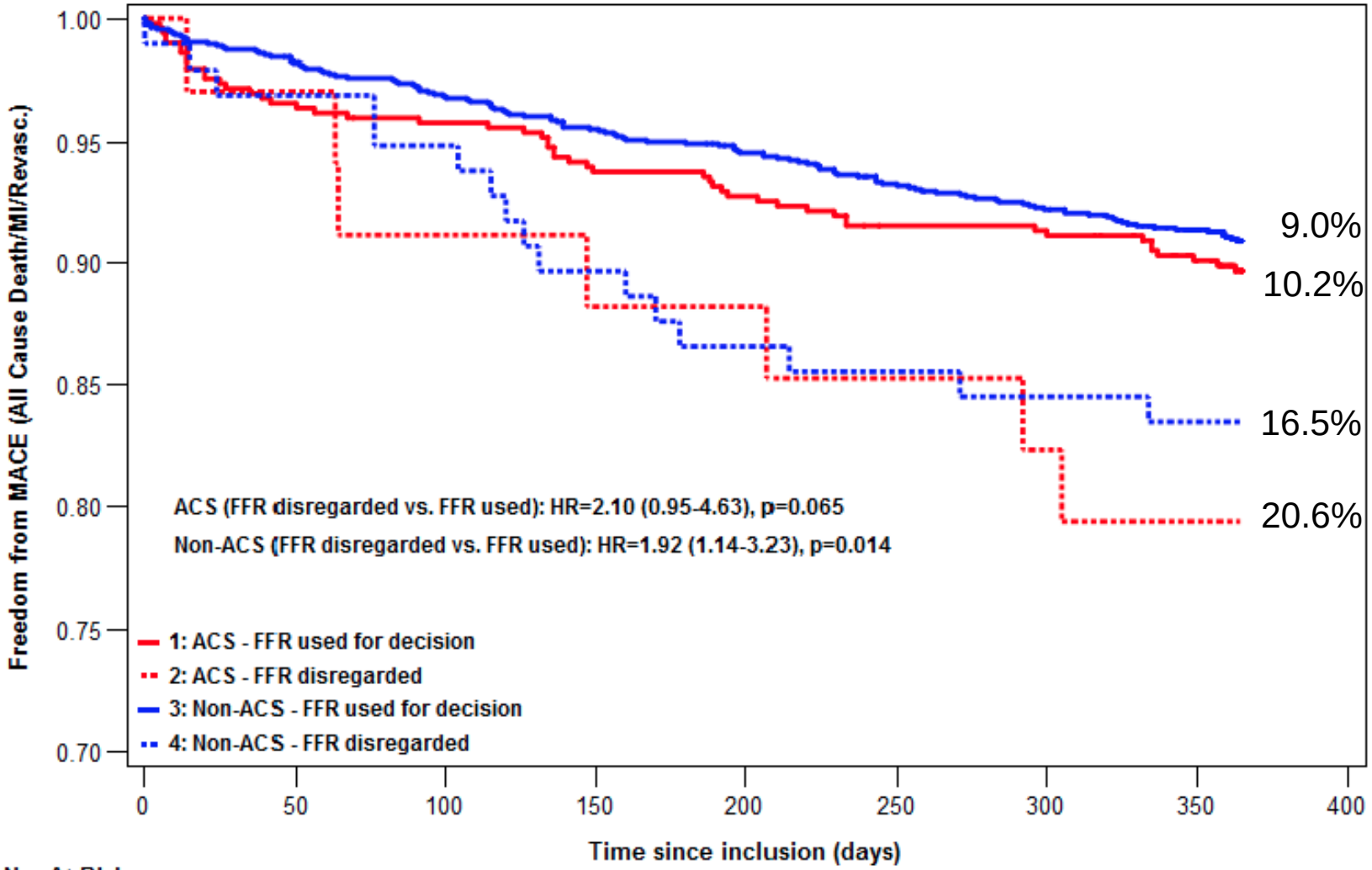


Management Strategy in ACS Subgroups



	Hazard Ratio (95% CI)	p-value	Interaction p-value
ACS Type			
Ongoing ACS (n=229)	0.53 (0.20 - 1.40)	0.20	0.62
Recent ACS (n=304)	0.71 (0.35 - 1.45)	0.35	
No. of Diseased Vessels			
>1 Diseased Vessels (n=284)	0.63 (0.27 - 1.48)	0.29	0.76
≤1 Diseased Vessel (n=249)	0.76 (0.33 - 1.72)	0.51	

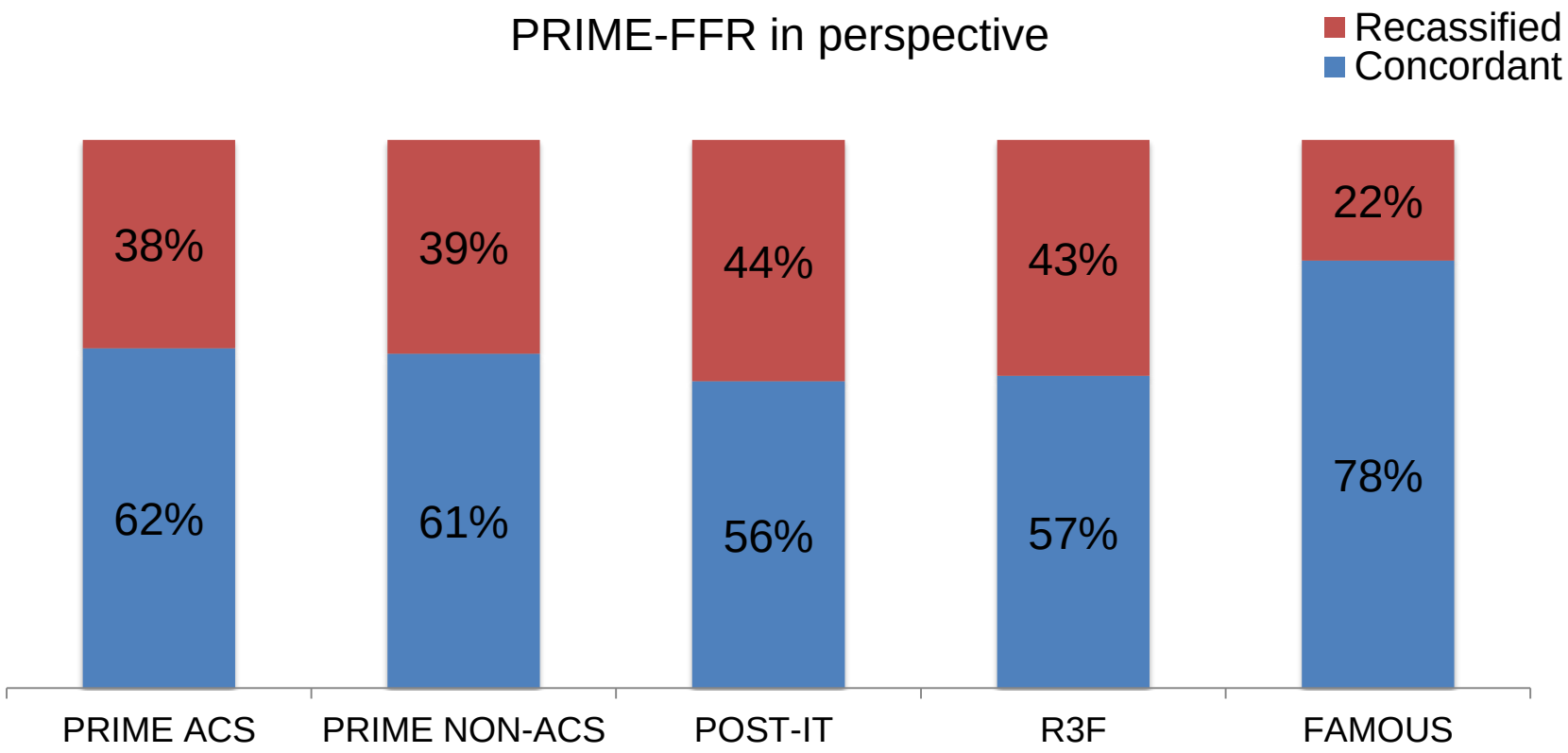
Safety of integrating FFR on management



No. At Risk

1:	498	480	476	466	461	452	450	435	0
2:	34	33	31	30	30	29	28	27	0
3:	1345	1315	1296	1278	1262	1241	1226	1192	0
4:	96	94	92	87	84	83	82	81	0

Conclusions



- ✓ Routine use of FFR in patients with on-going UA/NSTEMI or recent ACS is associated with a **high rate of reclassification** of management strategy.

Conclusions

- ✓ Integrating FFR on clinical decision making and **pursuing a treatment strategy divergent from angiography** (including revascularization deferral) was as **safe** in ACS as in stable CAD patients.

- ✓ **Large randomized trials** powered for clinical outcomes are needed to further clarify the role of FFR in the setting of the heterogeneous clinical scenario of ACS patients.

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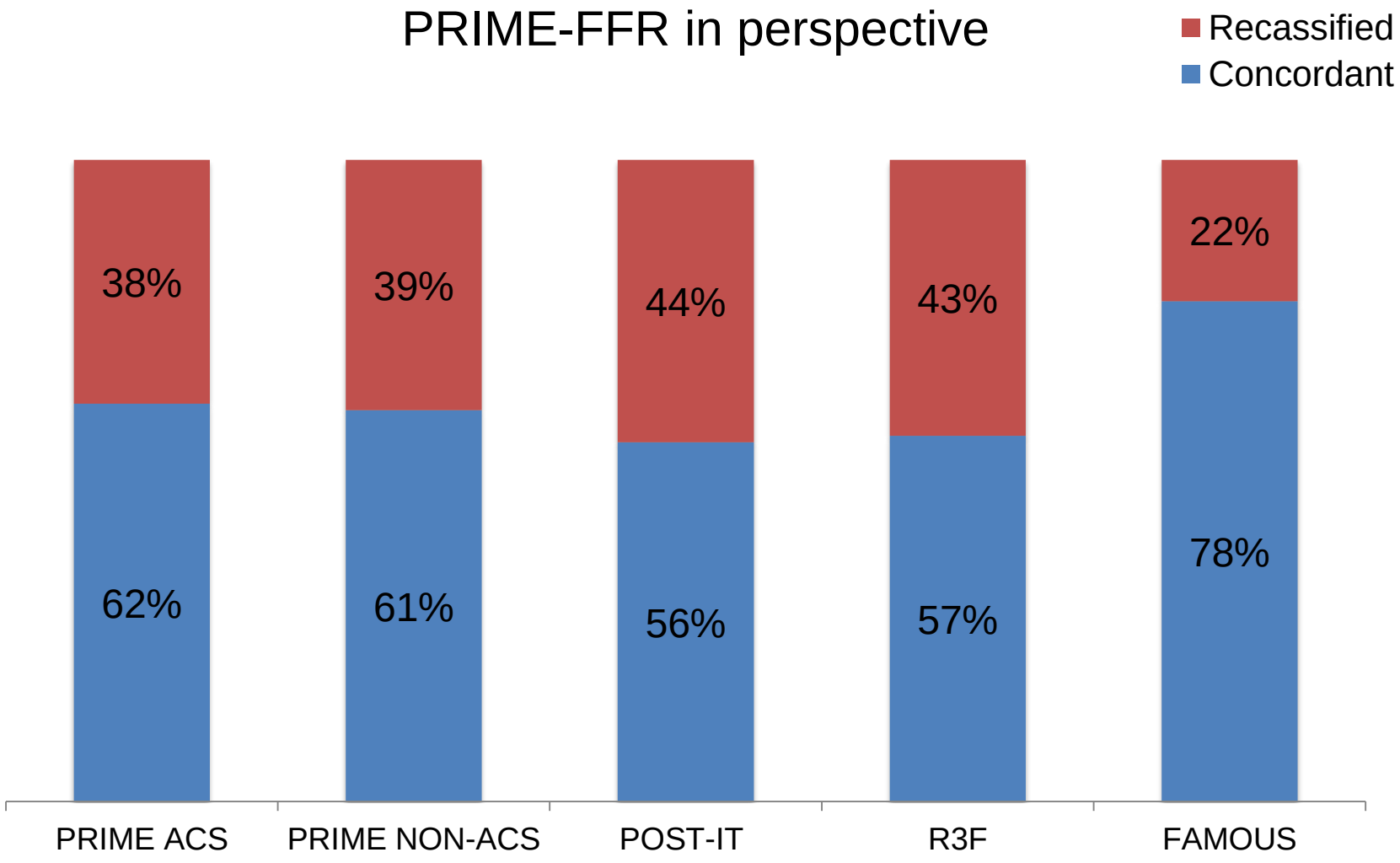
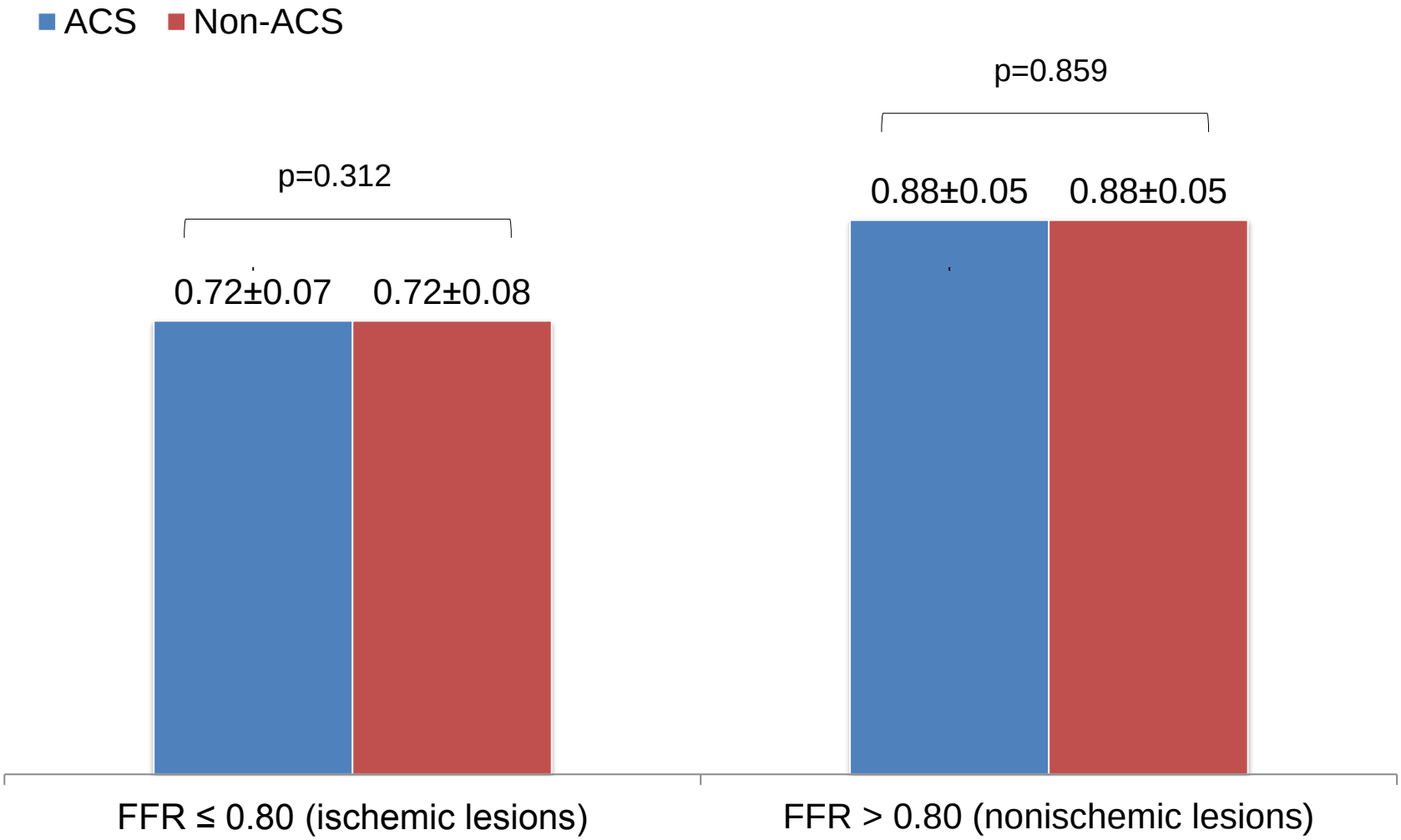
Impact of FFR on Treatment Strategy

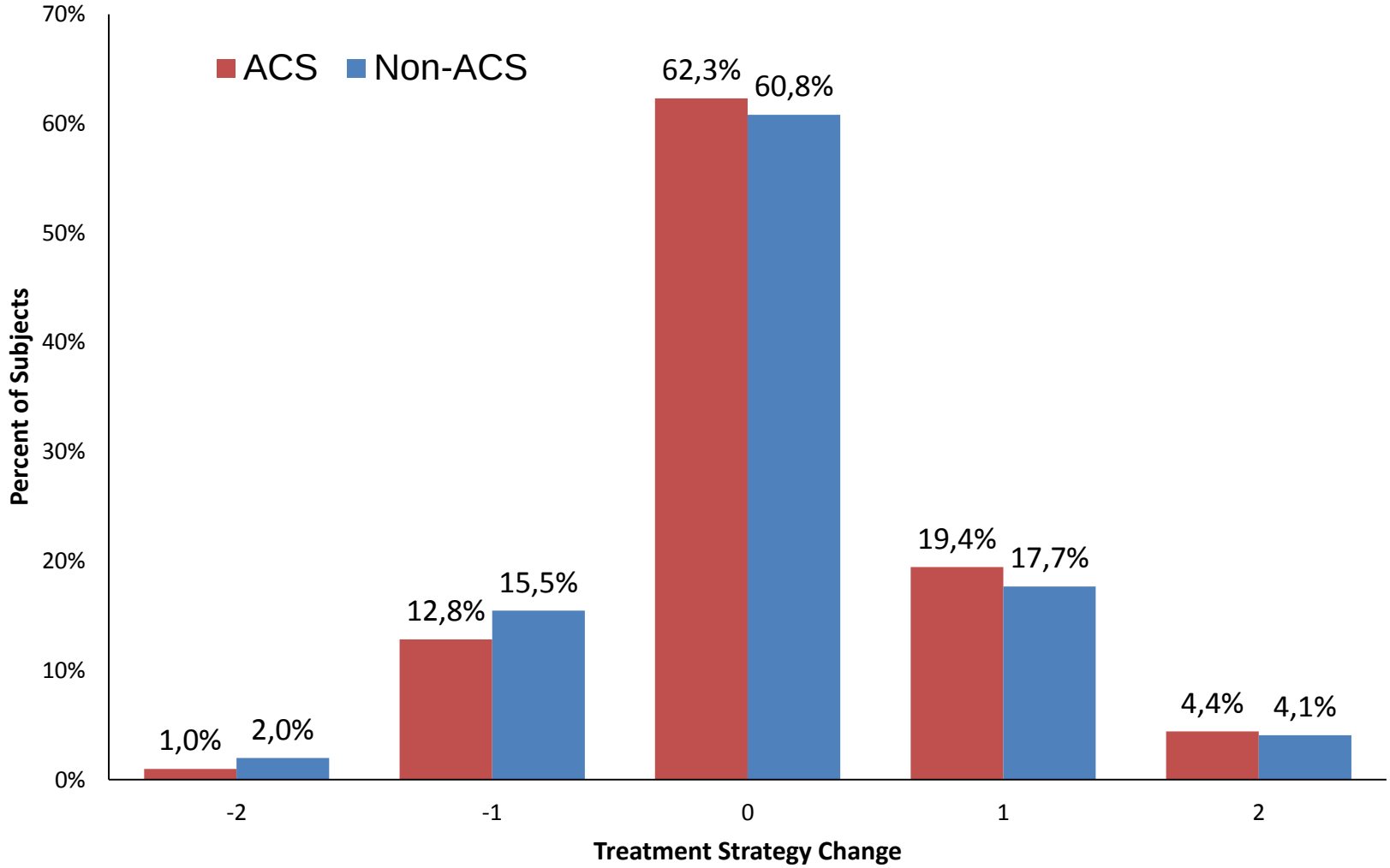


Impact of ACS status on FFR values



FFR & Treatment strategy change

"Magnitude" of strategy change according to ACS status



Reclassification Status Subgroups

	Hazard Ratio (95% CI)	p-value	Interaction p-value
ACS Type			**0.52**
Ongoing ACS	**0.86** (0.33 - 2.26)	**0.76**	
Other ACS	**0.57** (0.27 - 1.24)	**0.16**	
No. of Diseased Vessels			**0.97**
>1 Diseased Vessels	**0.62** (0.29 - 1.34)	**0.22**	
≤1 Diseased Vessel	**0.64** (0.24 -1.71)	**0.37**