Fractional Flow Reserve Application in Everyday Practice:
Do We Adopt the Recommendations?

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Disclosure - None

Background

- Fractional flow reserve (FFR) is considered the gold standard for invasive assessment of functional significant coronary stenosis.

- Traditionally, operators have been trained to assess coronary stenosis with an angiogram, and base their decisions on visual estimation (eyeball), quantitative coronary angiographic (QCA) measurement and clinical judgment.

- The incorporation of FFR into daily practice for decision making would require a change in the "mind-set", and may also be time-consuming.

2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention, *Circulation* 2011
ESC Guidelines on Myocardial Revascularization, *Eur Heart J* 2010

Aim

- To evaluate the routine use of FFR in daily clinical practice and clinicians' adherence to FFR guidelines.
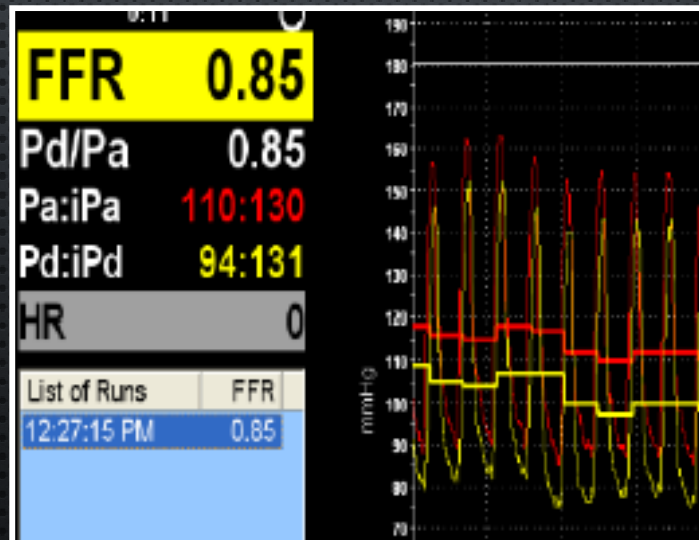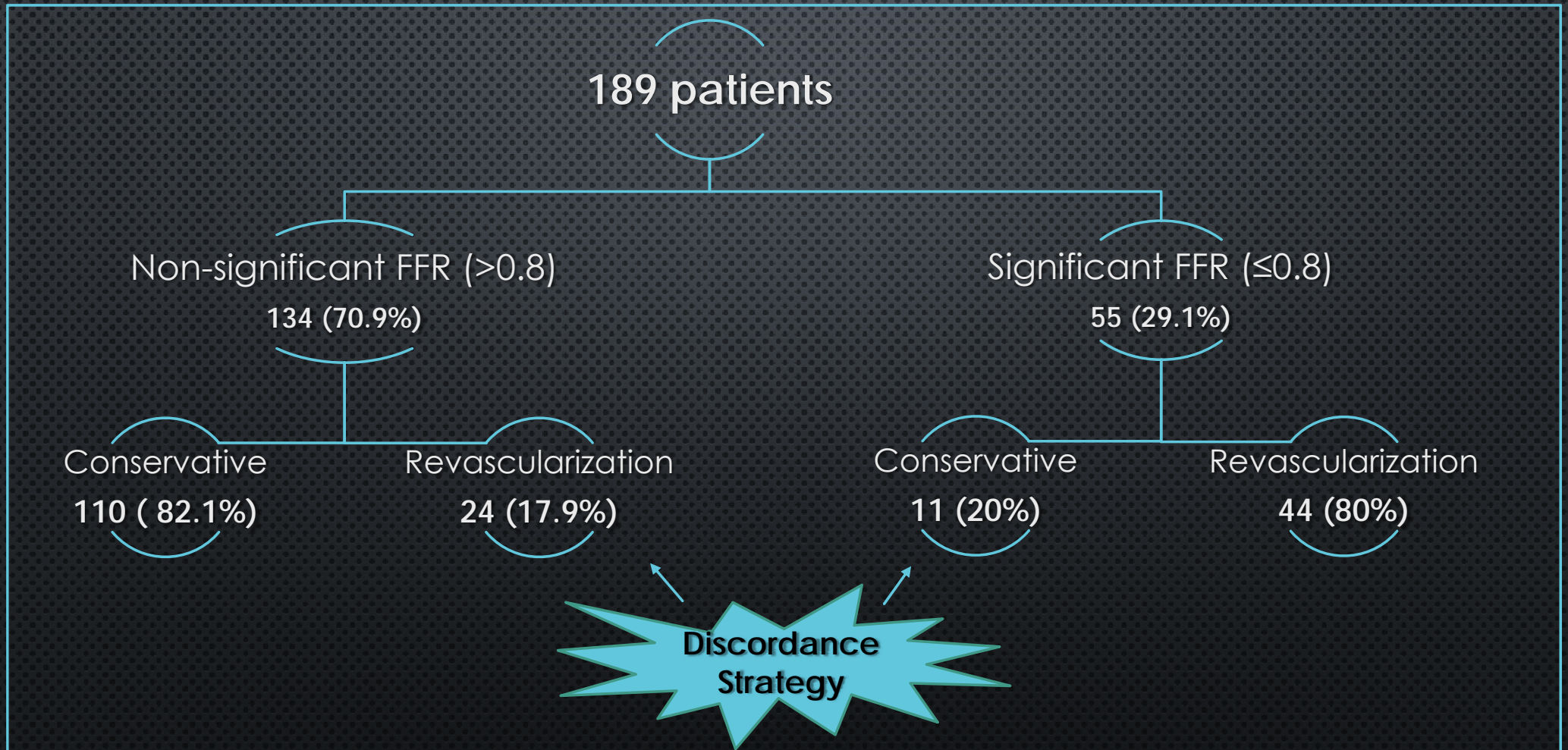
Methods

- A retrospective, observational study of all patients who underwent FFR evaluation during coronary angiography until December 2011, in our institute.

- Retrospectively, we performed offline, QCA calculations by an independent observer who was blinded to patient clinical outcome and FFR data.
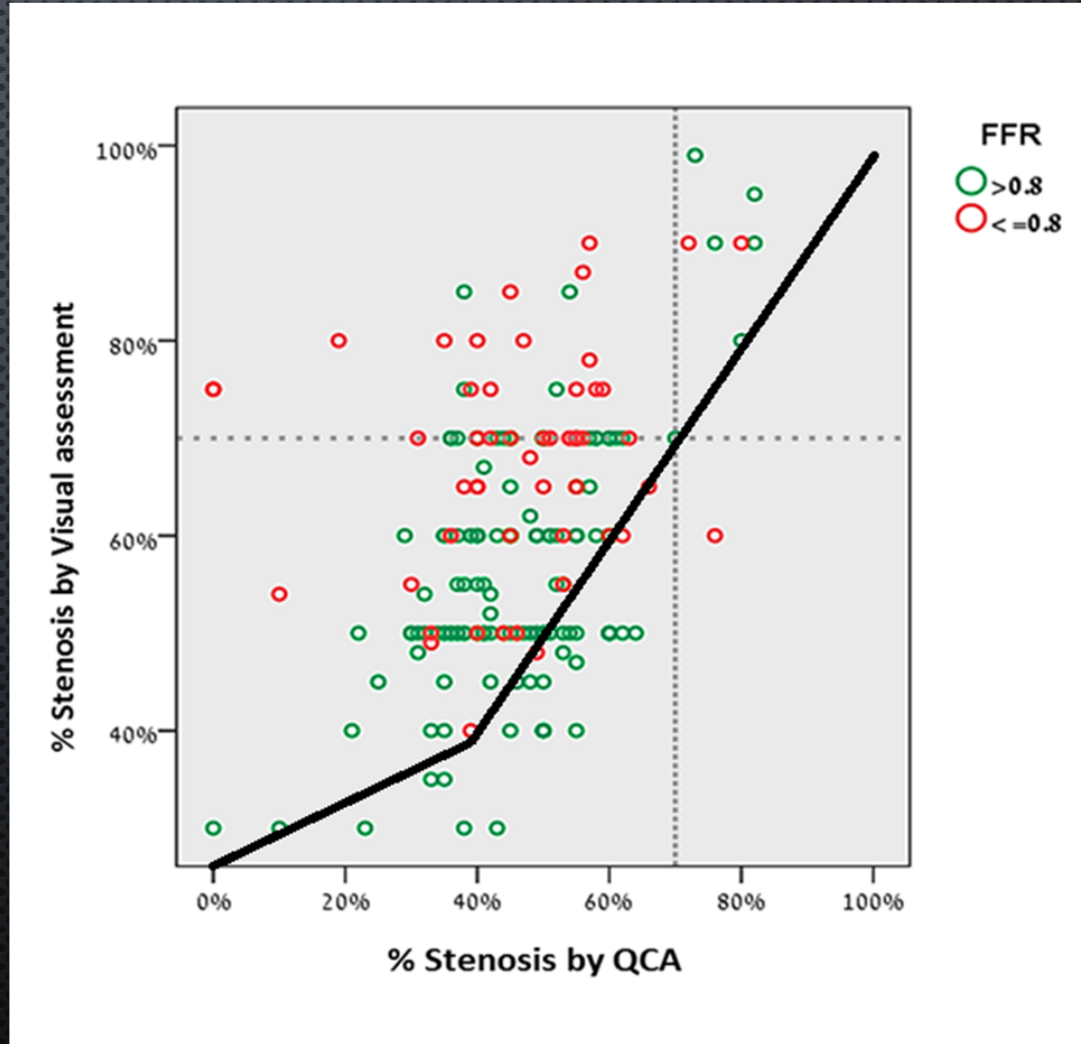
Results –
Patients Characteristics

Baseline Characteristics	n=189
Age (years)	62.5±11.3
Gender- Male	152 (80.4)
Medical History	
Diabetes	82 (43.3)
Hypertension	130 (68.7)
Dyslipidemia	170 (89.9)
Prior PCI	90 (47.6)
Prior CABG	15 (7.9)
Clinical Presentation	
Stable Angina	32 (16.9)
Unstable Angina	141 (74.6)
Acute MI	16 (8.5)
Angiographic Characteristics	
Single vessel	87 (46)
2-3 vessel disease	106 (56.1)
Bifurcation lesion	18 (9.5)

Results

189 patients

Non-significant FFR (>0.8)

134 (70.9%)

Significant FFR (≤0.8)

55 (29.1%)

Conservative

110 (82.1%)

Revascularization

24 (17.9%)

Conservative

11 (20%)

Revascularization
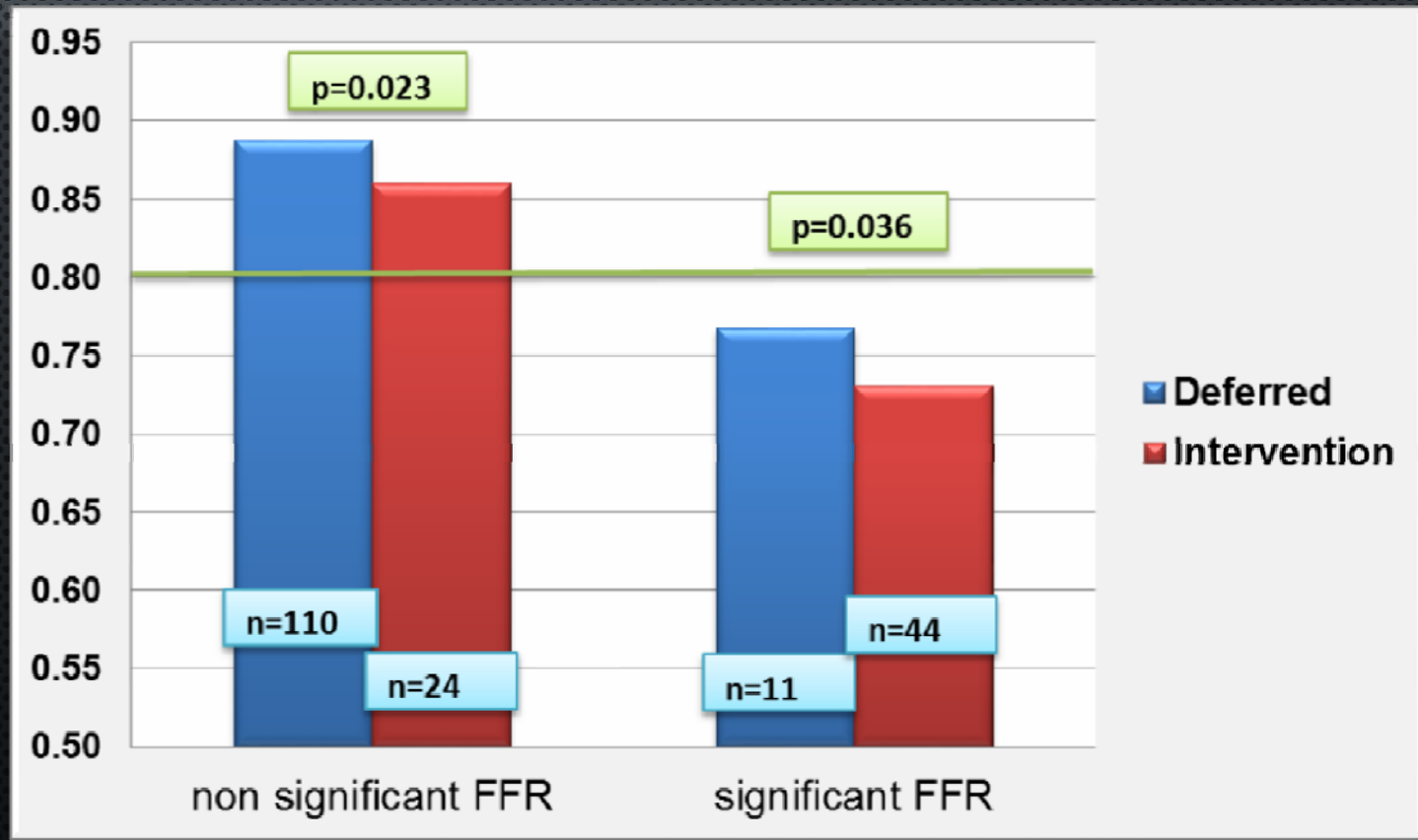
44 (80%)

Discordance Strategy

Results

- Lesion severity was frequently overestimated by the visual estimate compared to calculated QCA
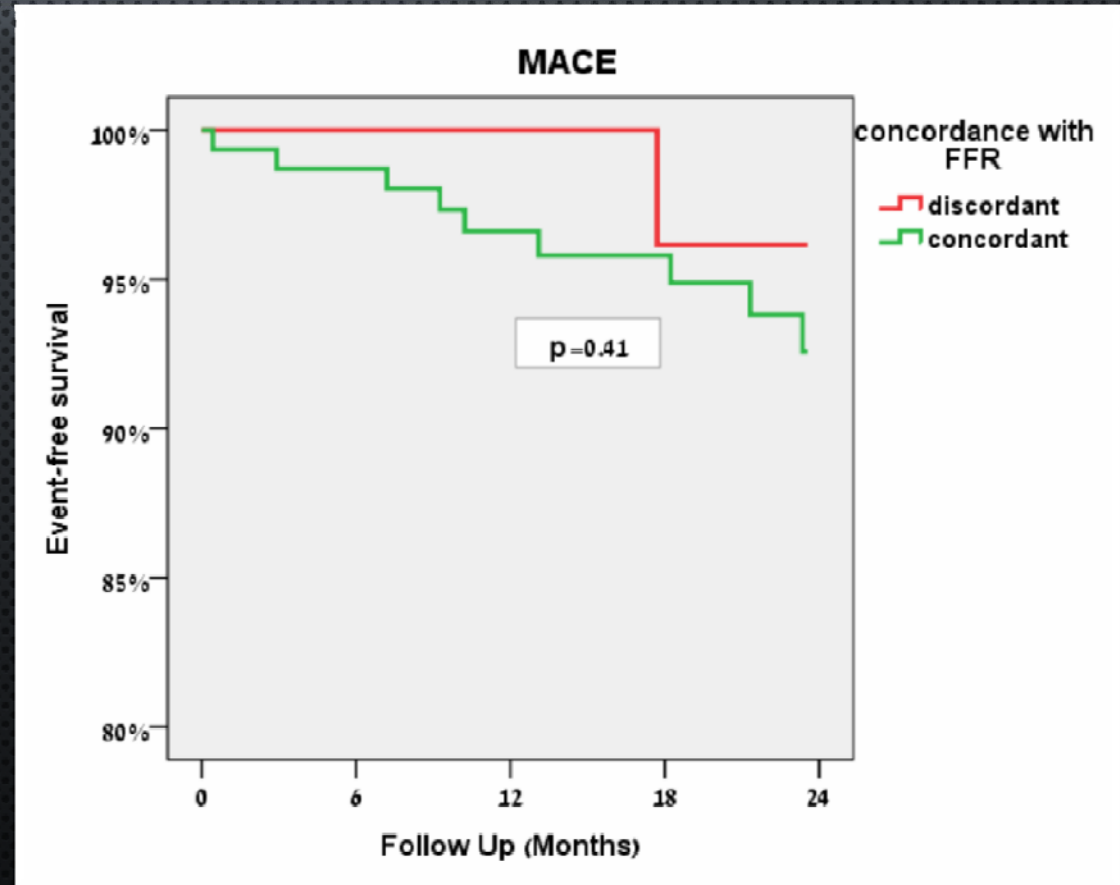
Results

- For patients treated in discordance with FFR indication, the mean FFR values were slightly above or below the reference cut-off value (0.75-0.80)

Long-Term Outcome

Kaplan Meier 2 year survival without MACE.

MACE= cardiac mortality, non-fatal MI, target vessel revascularization, and CABG

Conclusions

- **The main finding of this study are as follow:**

  ➢ In the "real world" experience, there was incomplete adherence to FFR measurements and guidelines.

  ➢ Our practice did not affect the 2-years survival outcomes

- **Possible explanations:**

  ➢ In borderline cases, the mean FFR value was slightly above or below the reference cut-off value [the "grey zone" (0.75-0.85)].

  ➢ "Oculo-stenotic reflex" phenomenon -irresistible urge in the operator to treat all significant lesions amenable to PCI.

  ➢ Too small sample size to make a conclusions regarding clinical outcomes. A larger multi-center experience is thus needed.

Thank You for Your Attention…

	All- cause Mortality (n=8)	Cardiac Mortality (n=1)	MI (n=2)	TVR (n=3)	TLR (n=3)	CABG (n=1)
Stenosis Severity						
FFF > 0.8	6 (75%)	1(100%)	2 (100%)	3(100%)	3 (100%)	1(100%)
FFR ≤ 0.8	2 (25)	-	-	-	-	-
Management						
Deferred	6 (75%)	1(100%)	1(50%)	2 (66.7%)	3(100%)	-
Intervention	2 (25%)	-	1(50%)	1(33.3%)	-	1(100%)
Decision According to FFR						
Concordance	8 (100%)	1(100%)	1(50%)	2 (66.7%)	3(100%)	-
Discordance	-	-	1(50%)	1(33.3%)	-	1(100%)