

# **FFR & Bifurcation: Lessons from Nordic Baltic III**

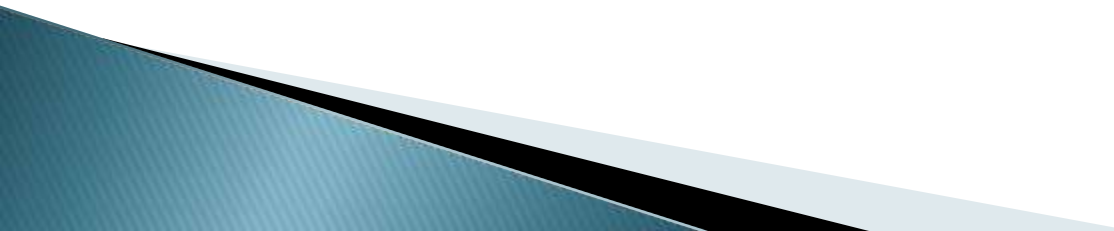
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Riga, Latvia**

**On behalf of the NORDIC-BALTIC PCI Study Group**

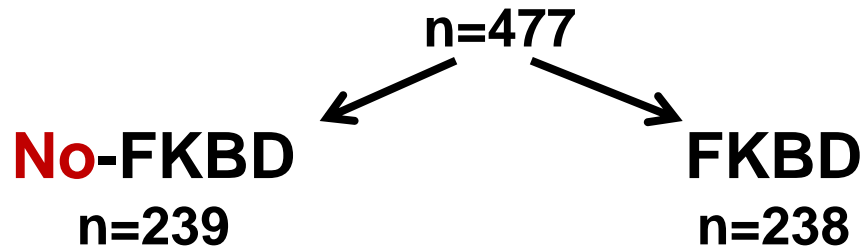


# Disclosure Statement of Financial Interest

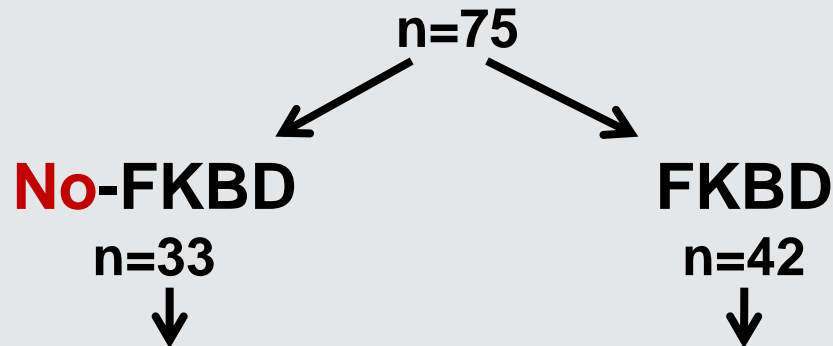
I, *Indulis Kumsars* DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.



# Nordic–Baltic Bifurcation Study III



## SB FFR Substudy



*8-month  
follow-up*

Angiographic (n=33)  
FFR (n=21)

Angiographic (n=42)  
FFR (n=25)

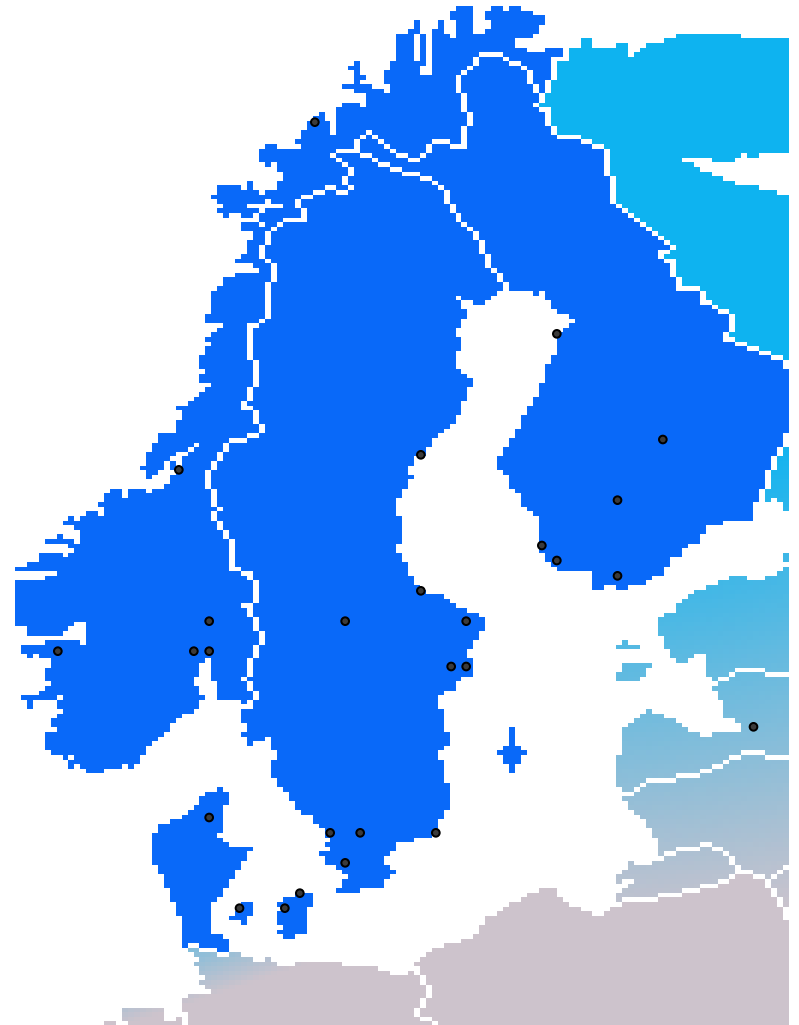
# SB FFR substudy participating centers

**P. Stradins University Hospital,  
Riga, Latvia (50 patients)**

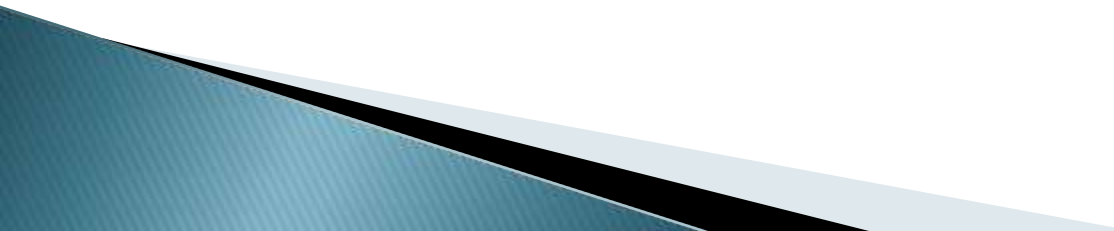
**Oulu University Hospital,  
Finland (12 patients)**

**Aarhus University Hospital,  
Skejby, Danmark (10 patients)**


**Tromsø University Hospital,  
Norway (3 patients)**



# Objectives of SB FFR Substudy

- ▶ To compare FFR and QCA data of the SB after MV stenting
  - ▶ To evaluate the effect of FKBD on SB FFR data
  - ▶ Consistency of SB FFR data at 8-month follow-up
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# Methods

1. Predilatation of stenosed areas of the MV and SB at the discretion of the operator
  2. Stenting of the MV
  3. If TIMI grade 3 flow in SB- randomisation to +/- FKBD
  4. FFR was measured in SB with pullback to MV at the end of the procedure (adenosin 140  $\mu\text{g}/\text{kg}/\text{min}$  in central vein)
  5. Exclusion: severe dissection in SB
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# Clinical and procedural characteristics I

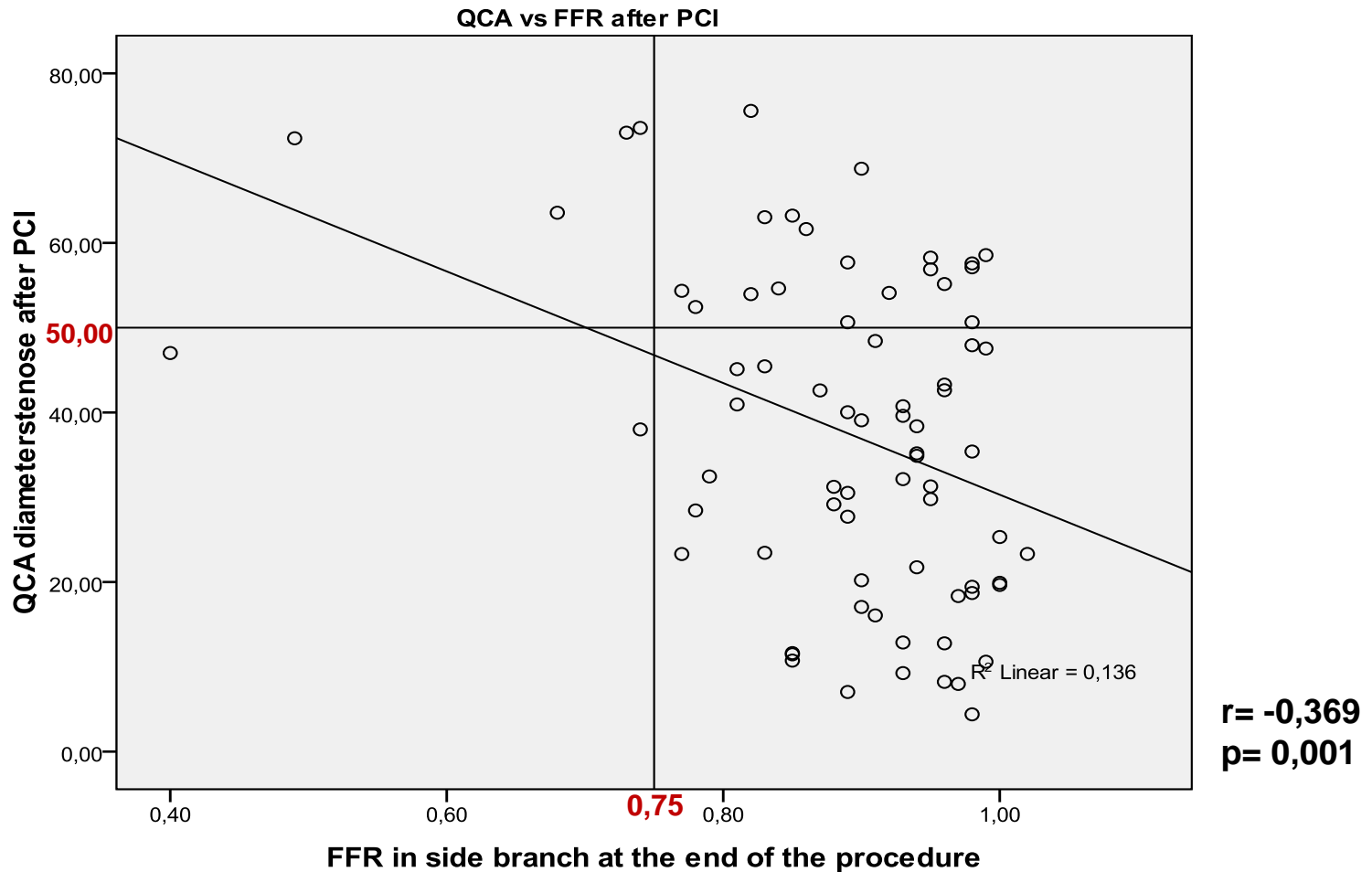
	FKBD (n=42)	No-FKBD (n=33)	p value
Age (years)	61,48(±9,4)	60,67(±10,2)	0,457
Male gender	24(63,2%)	21(63,6%)	1,000
Family history	17(41,5%)	13(39,4%)	0,857
Current smoker	6(14,3%)	11(33,3%)	0,050
Hypercholesterolemia	36(85,7%)	26(78,8%)	0,432
Stable angina pectoris	40(95,2%)	31(93,9%)	0,804
Unstable angina pectoris	2(4,8%)	3(9,1%)	0,456
Diabetes mellitus	8(19%)	6(18,2%)	0,924
Hypertension	31(73,8%)	25(75,8%)	0,847
Prior PCI	10(23,8%)	6(18,2%)	0,555

# Clinical and procedural characteristics II

	<b>FKBD (n=42)</b>	<b>No-FKBD (n=33)</b>	<b>p value</b>
<b>Predilatation in SB</b>	<b>13(31%)</b>	<b>8(24%)</b>	<b>0,521</b>
<b>Final KB</b>	<b>42(100%)</b>	<b>0(0%)</b>	<b>&lt;0,001</b>
<b>True bifurcation</b>	<b>29(69%)</b>	<b>18(55%)</b>	<b>0,489</b>
<b>LAD/D1</b>	<b>36(85,7%)</b>	<b>28(84,8%)</b>	<b>0,916</b>
<b>LCX/OM</b>	<b>4(9,5%)</b>	<b>3(9,1%)</b>	<b>0,949</b>
<b>RCA-RPD/RPL</b>	<b>1(2,4%)</b>	<b>2(6,1%)</b>	<b>0,420</b>
<b>LM-LCX-LAD</b>	<b>1(2,4%)</b>	<b>0(0%)</b>	<b>0,372</b>



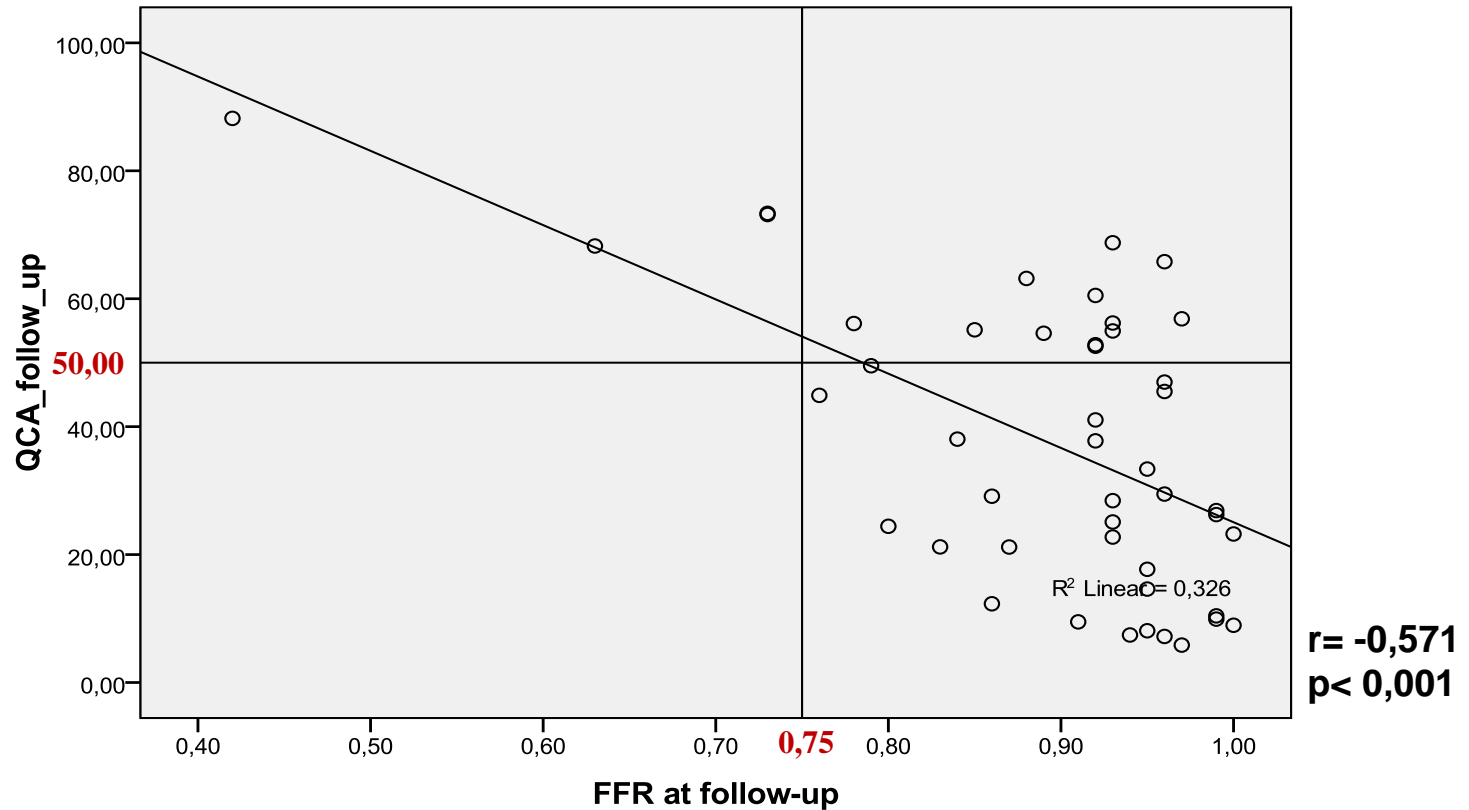
# SB QCA vs. FFR after PCI



All cases with FFR < 0,75 was in the **No-FKBD** group

# SB QCA vs. FFR at follow-up

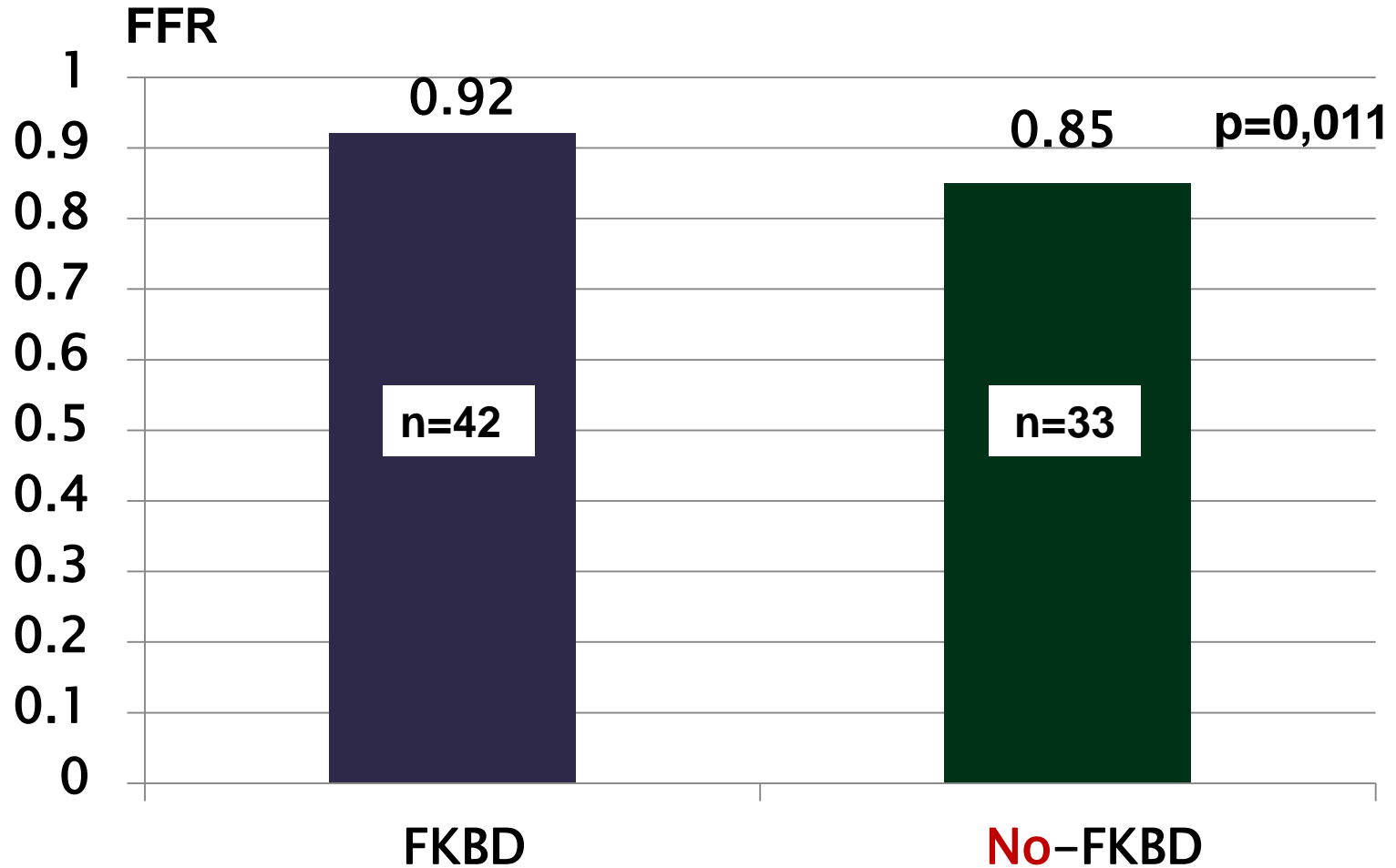
QCA vs FFR at follow-up



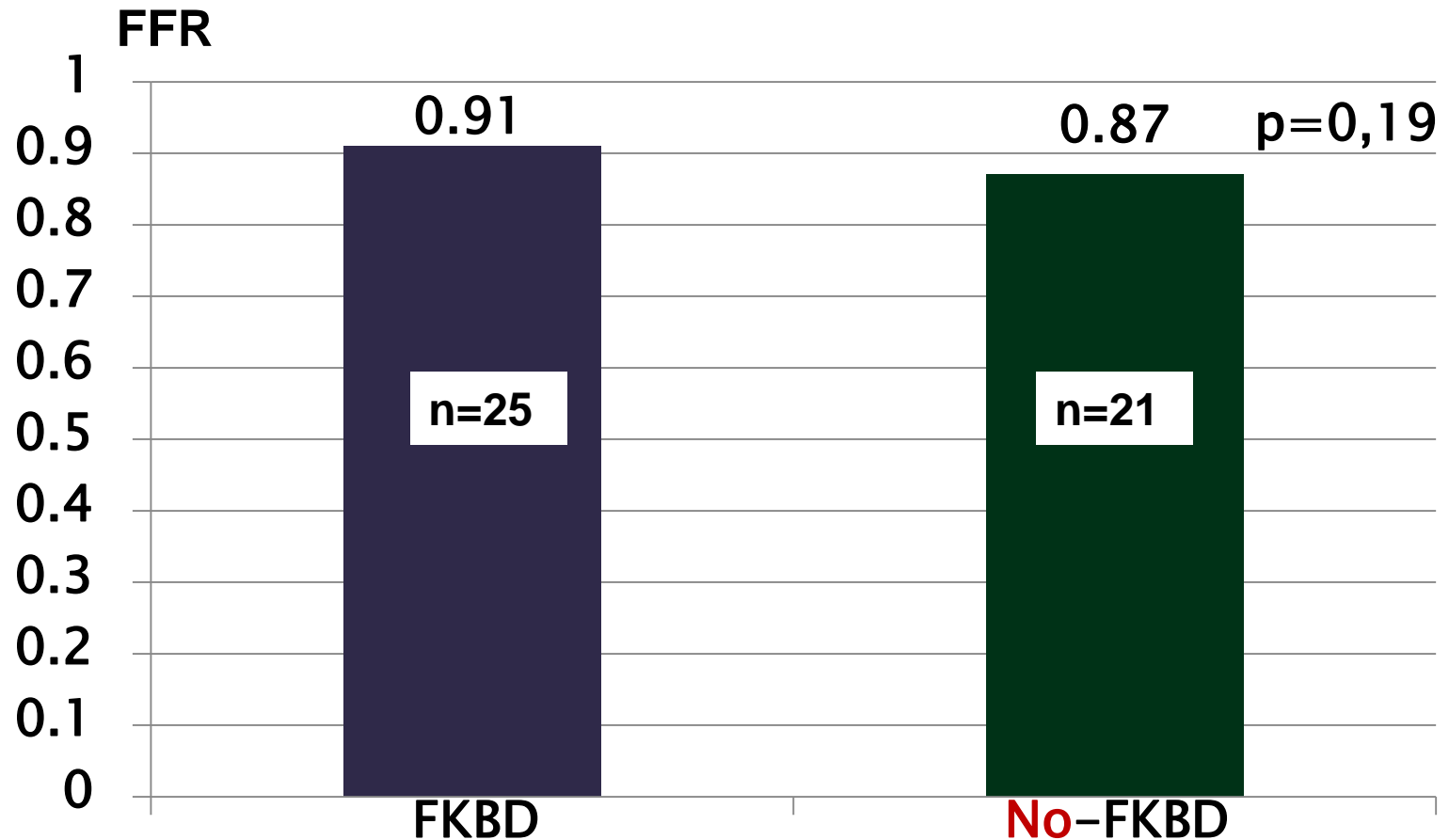
# Angiography overestimated the functional severity of SB lesions after MB stenting

- ▶ In relatively large SB  $\geq 2.5$ mm with  $\geq 75\%$  stenosis in only **38%** of cases lesions had  $\text{FFR} < 0.75$

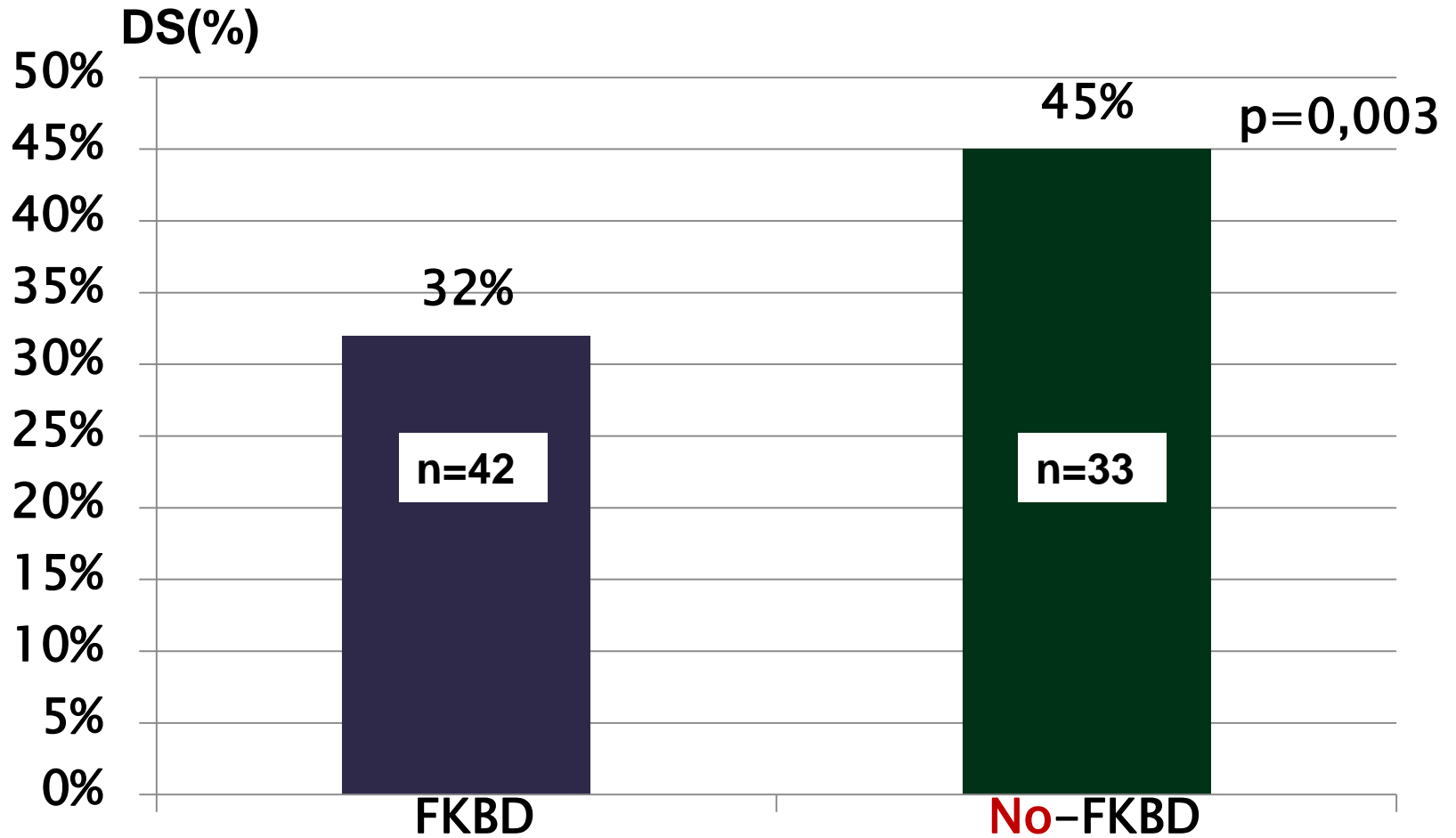
# SB FFR after PCI



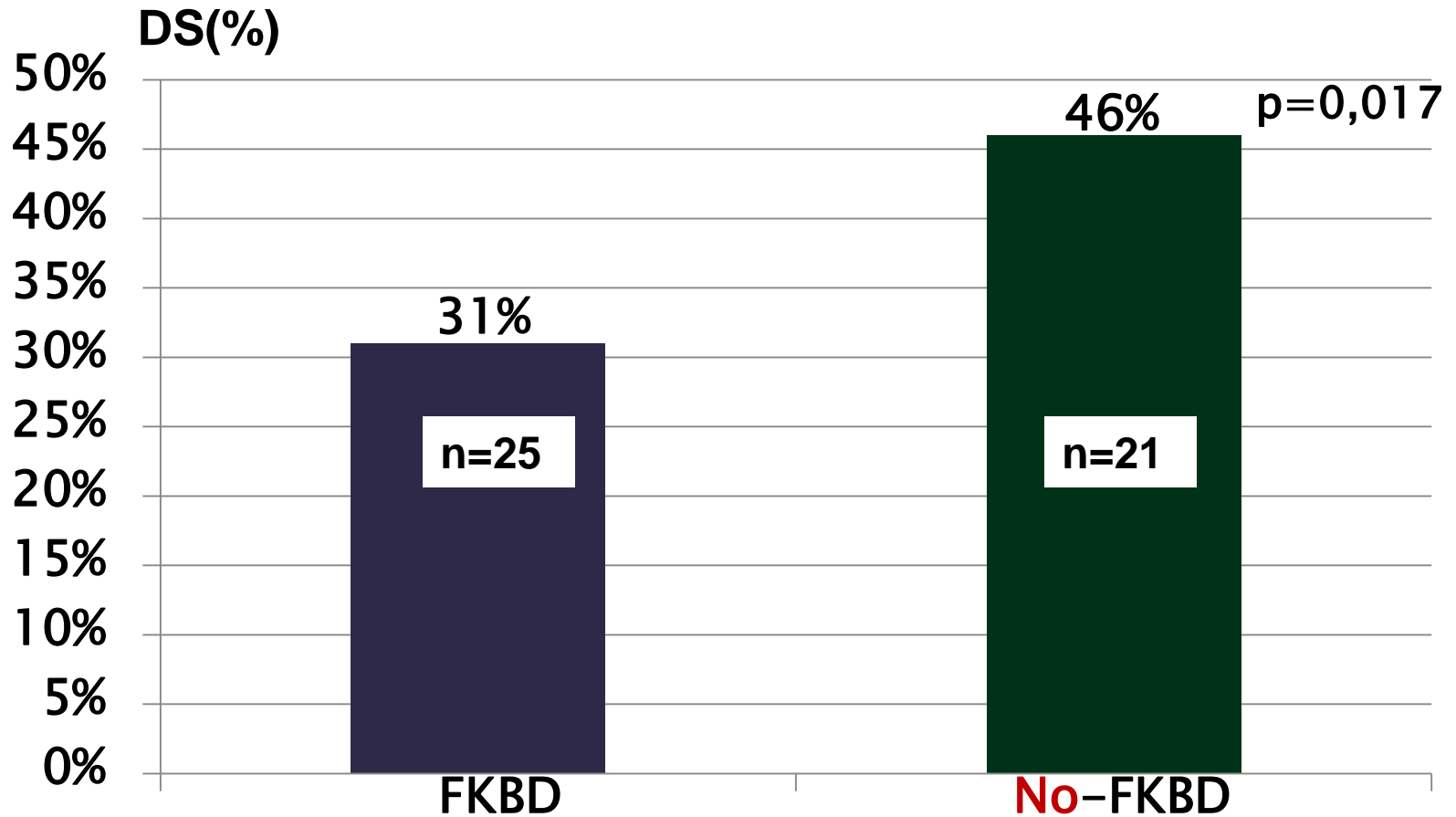
# SB FFR at 8-month follow-up



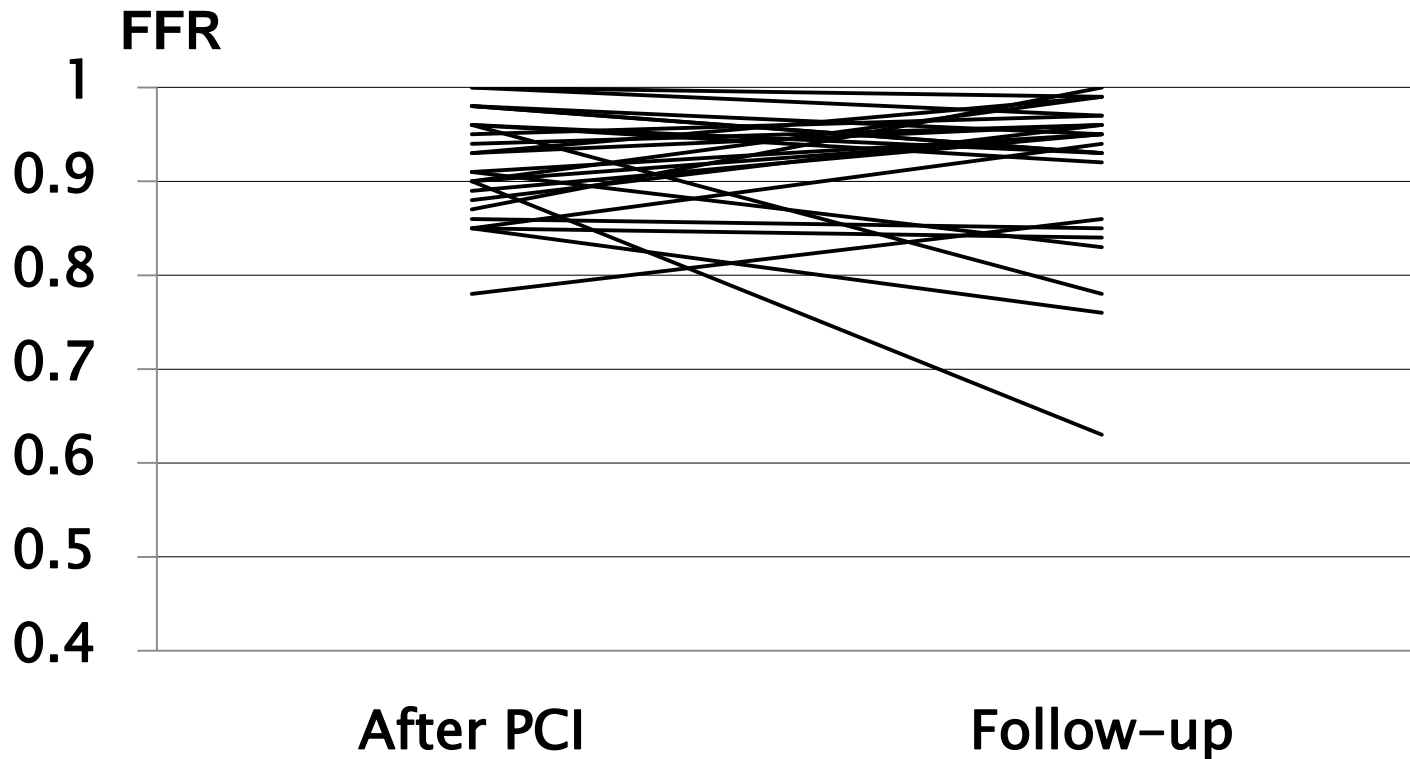
# SB stenosis by QCA after PCI



# SB stenosis by QCA at 8-month follow-up



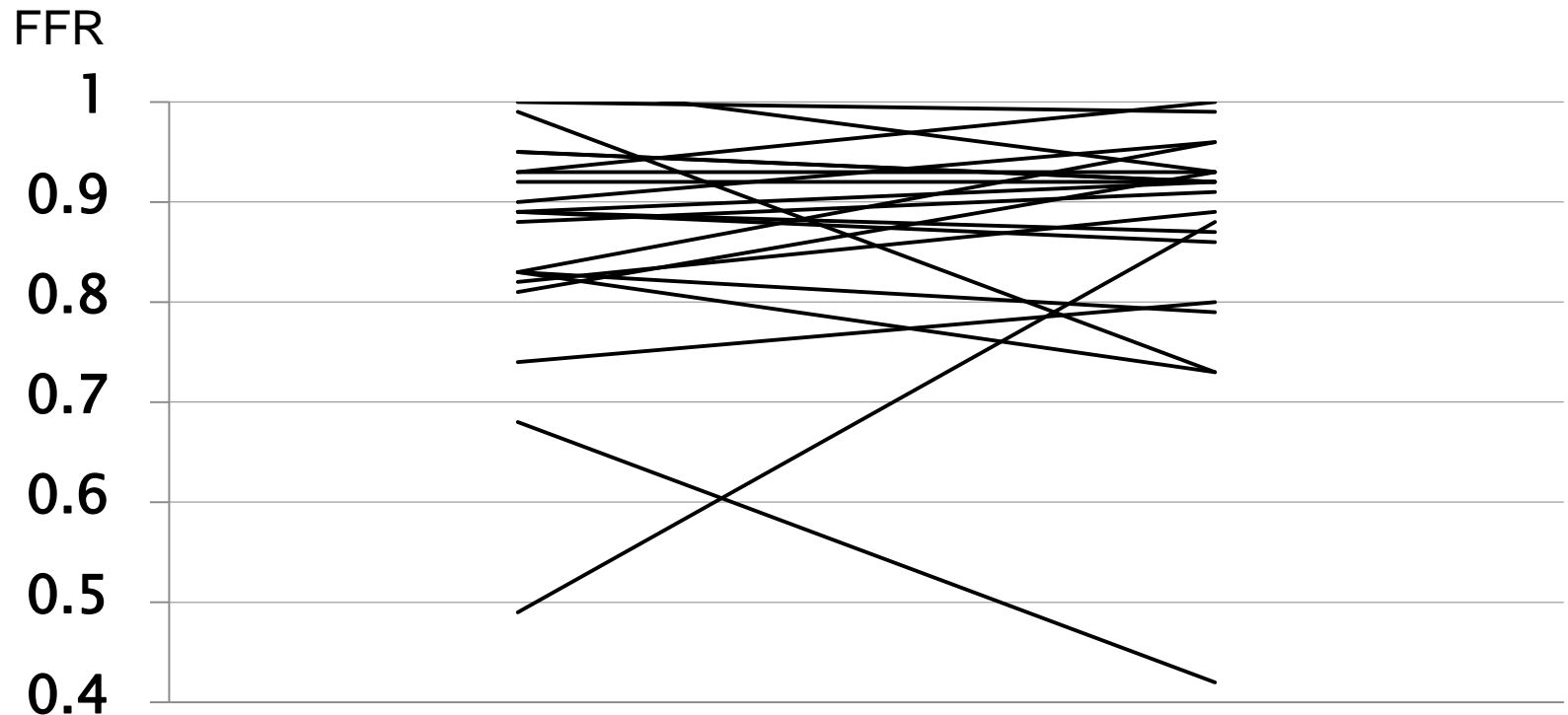
# FFR at index procedure vs. follow-up in the *FKBD* group



		Mean	
After PCI	n=25	0,92	p=0,804
Follow-up	n=25	0,91	



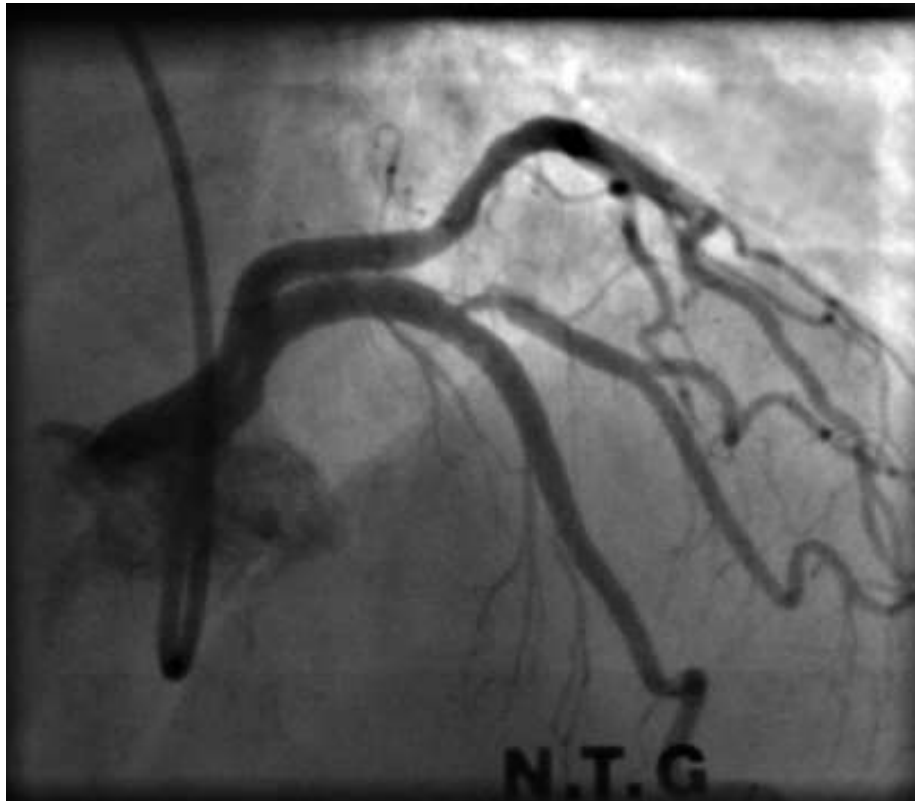
# FFR at index procedure vs. follow-up in the **No-FKBD** group



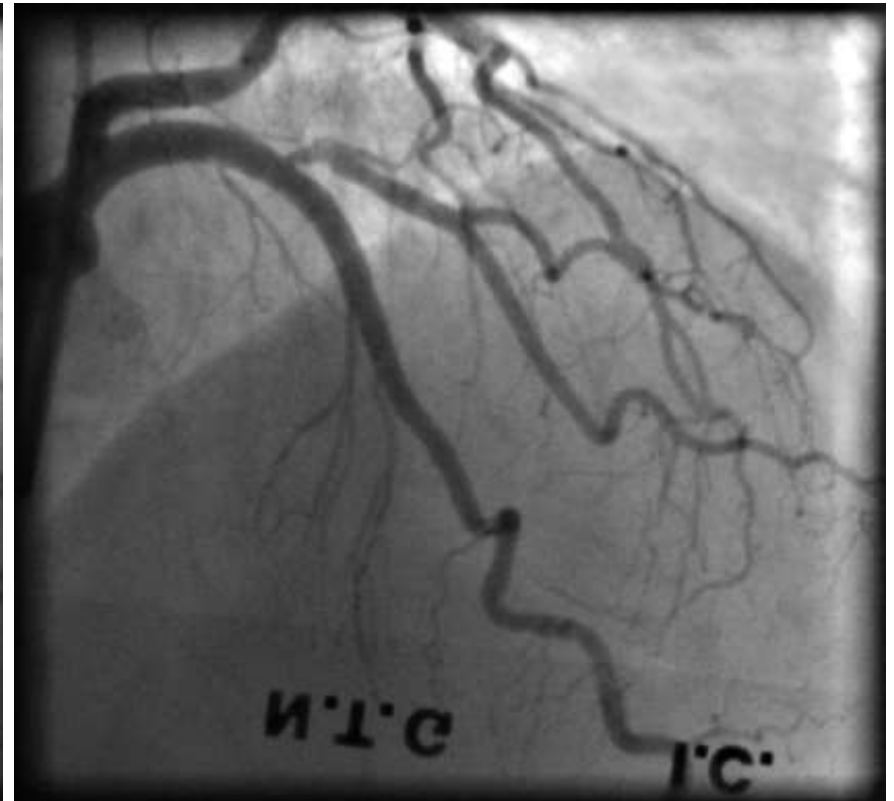
After PCI		Follow-up	
		Mean	
After PCI	n=21	0,87	p=0,911
Follow-up	n=21	0,87	

# After PCI

# Follow-up at 8 months



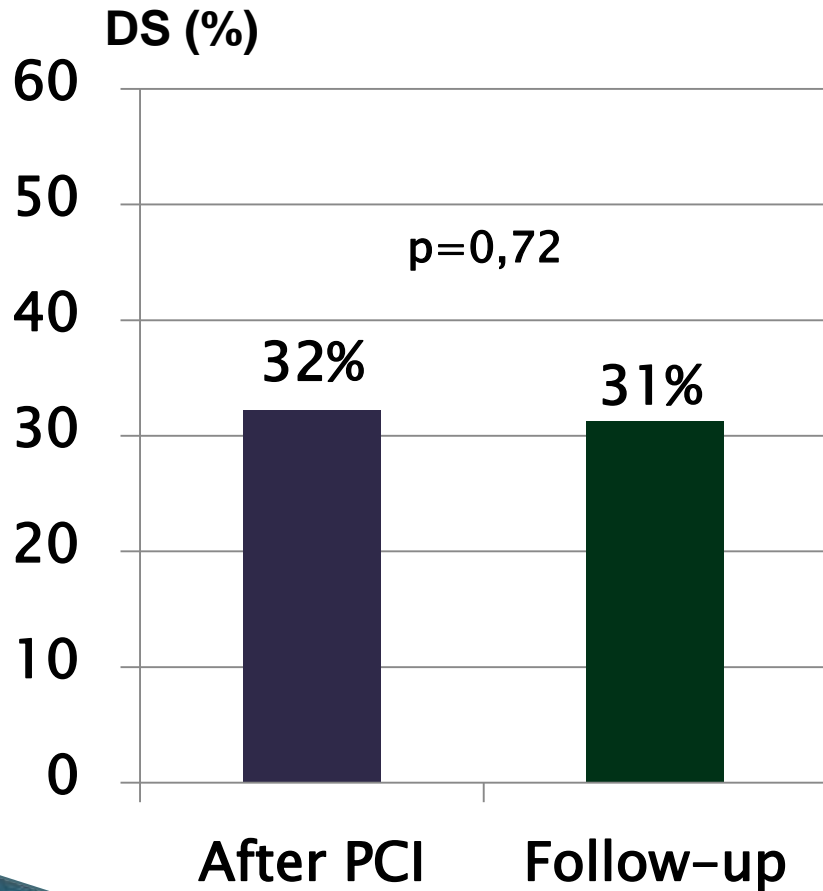
FFR= 0.90



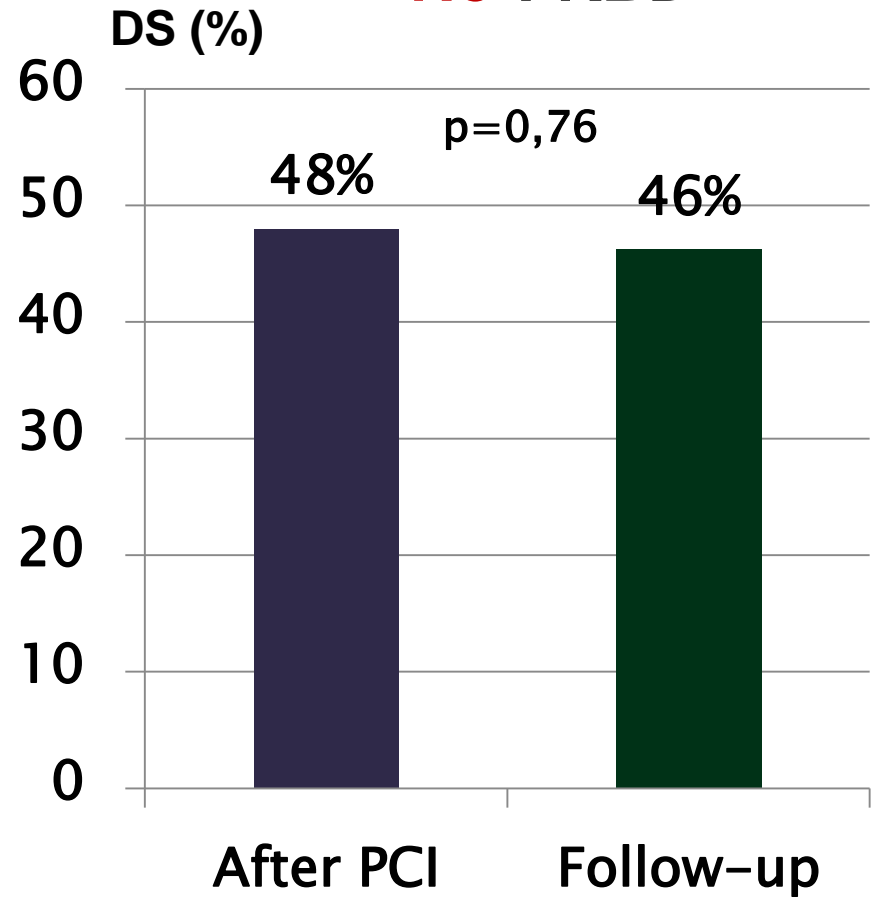
FFR= 0.94

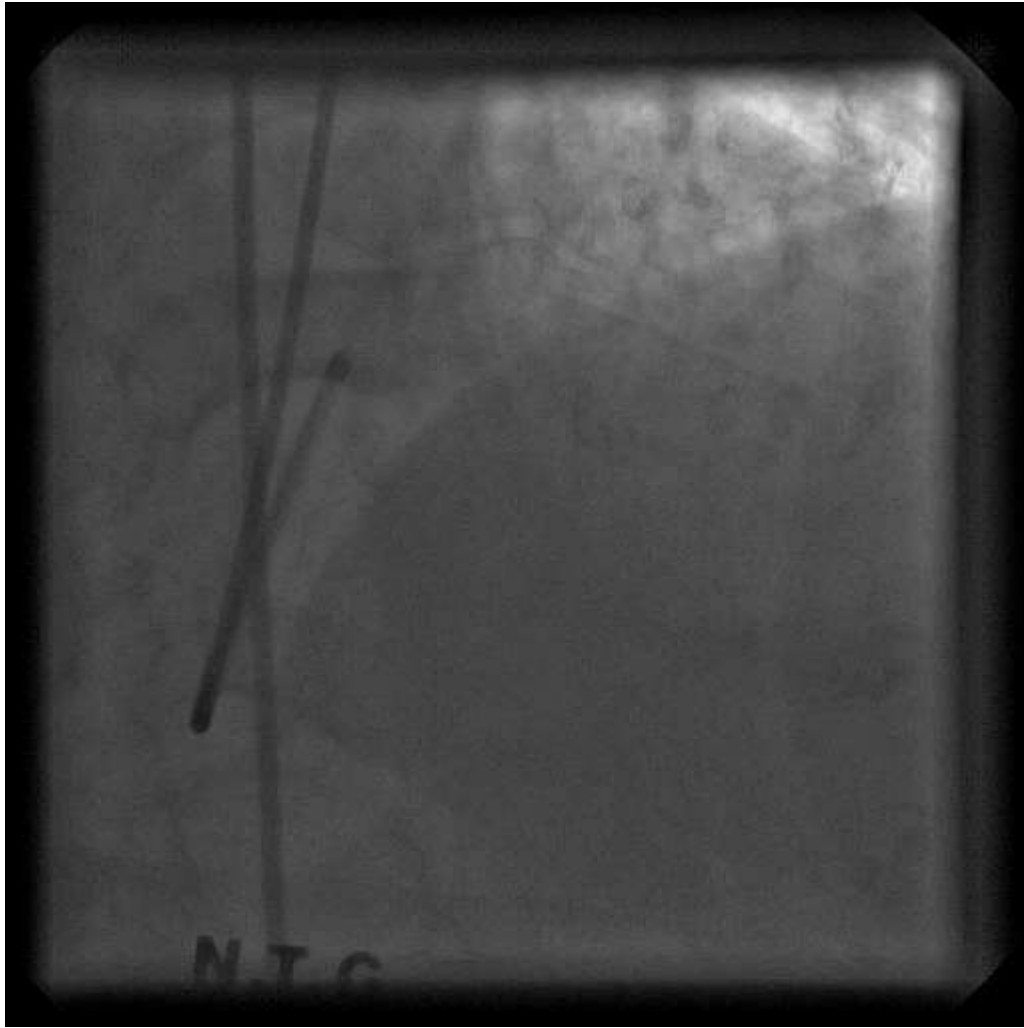
# QCA at index procedure vs. follow-up in both groups

**FKBD**

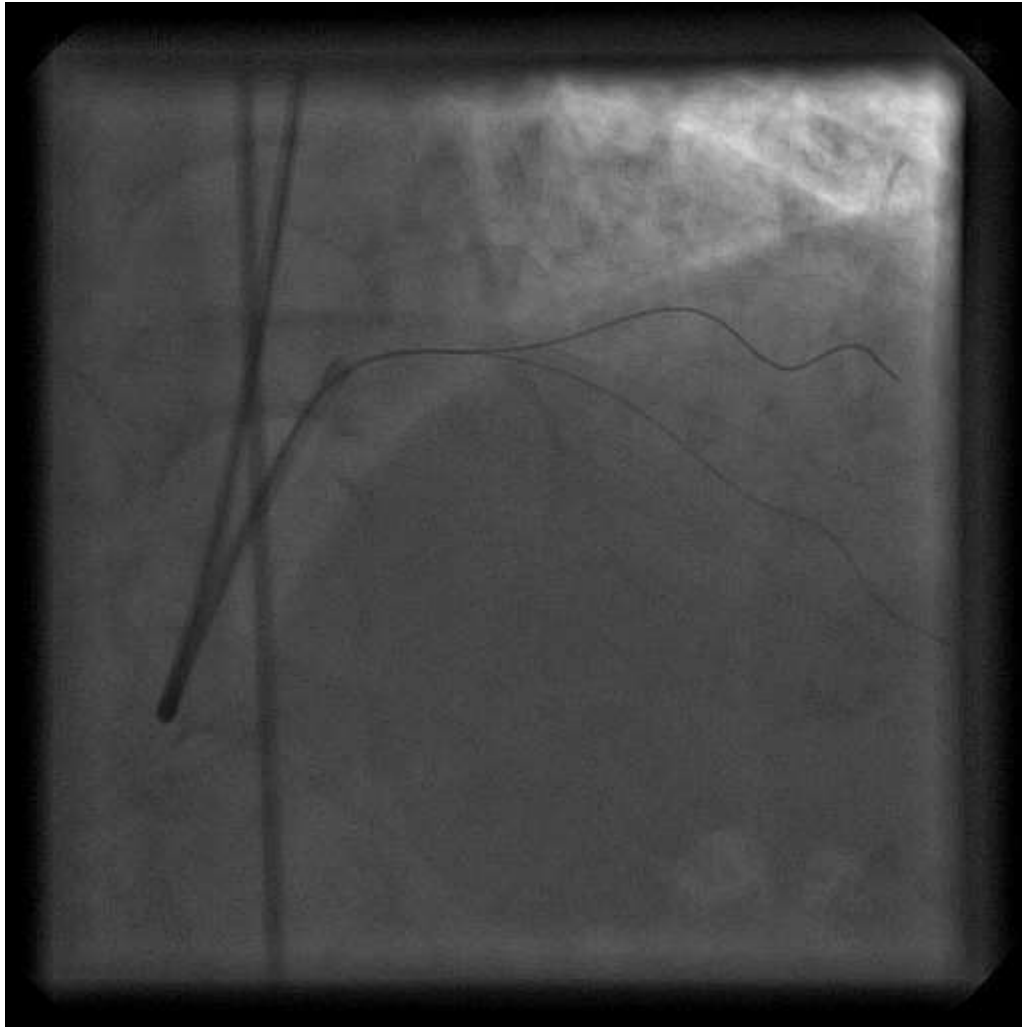


**No-FKBD**

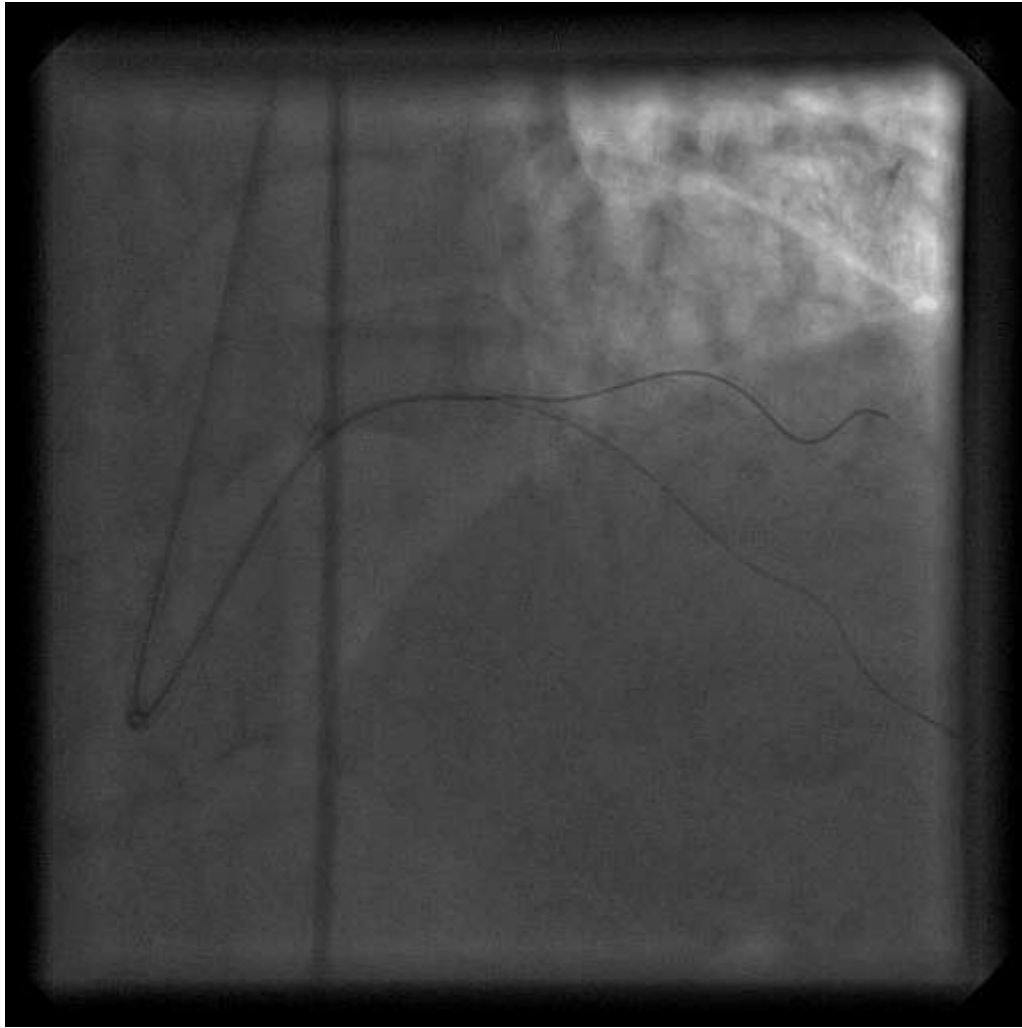




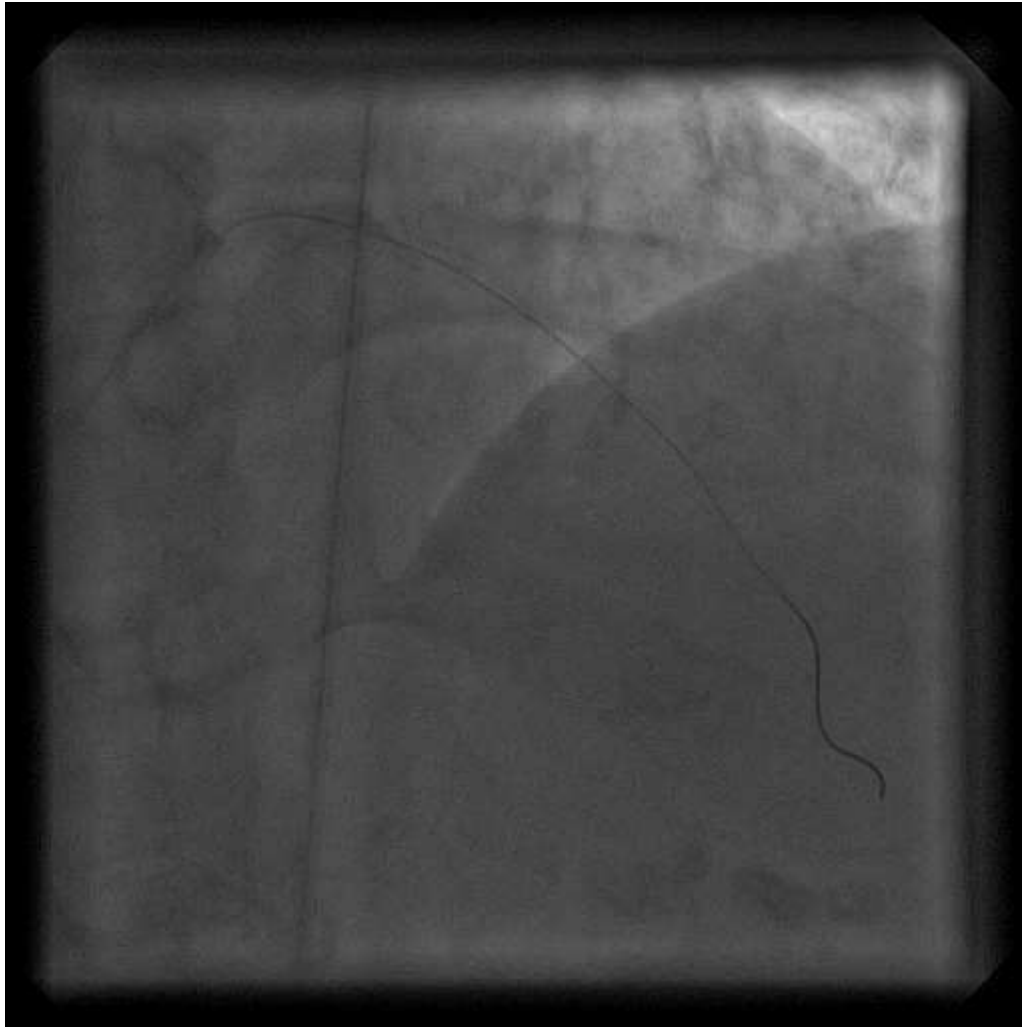
**Medina 1-1-1**



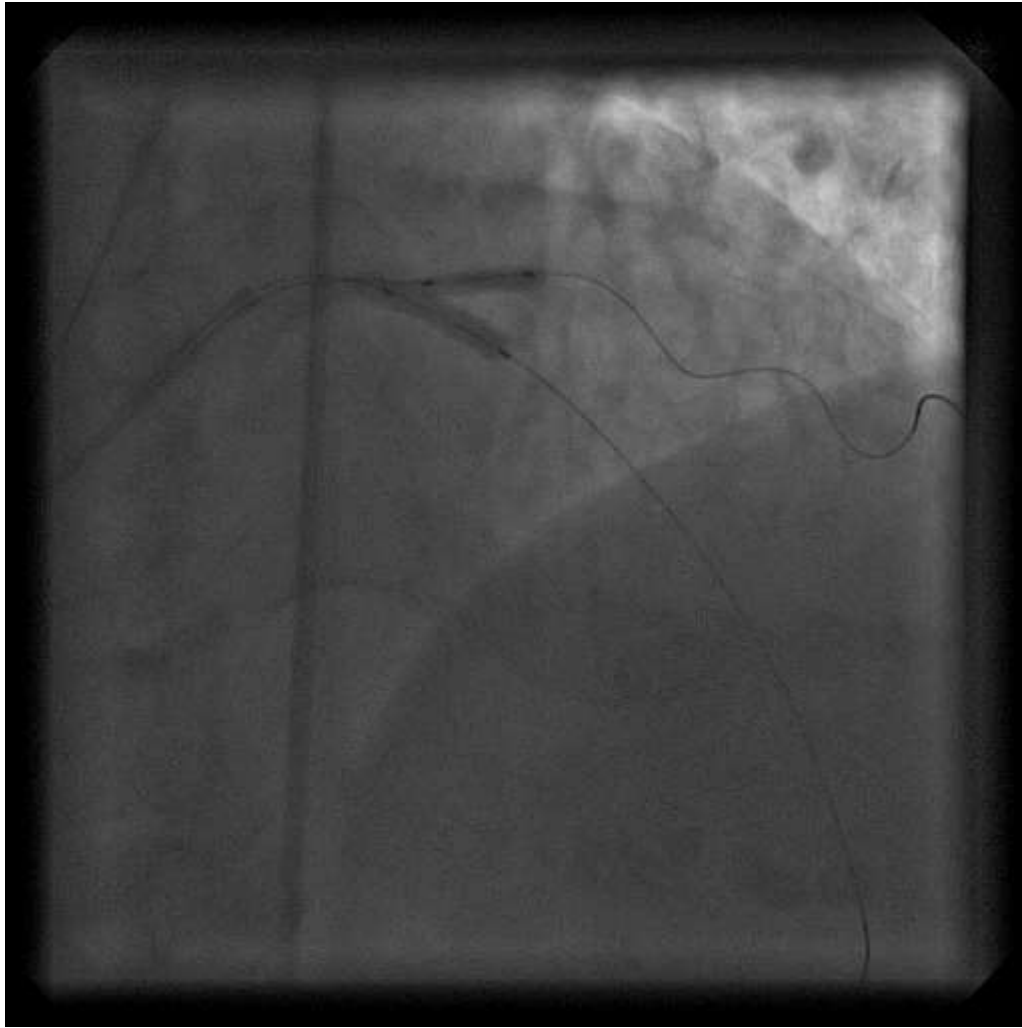
**Predilatation in  
SB and MB with  
cutting balloon  
2,5-10mm**



**Cypher 3.5-18mm  
in MB**

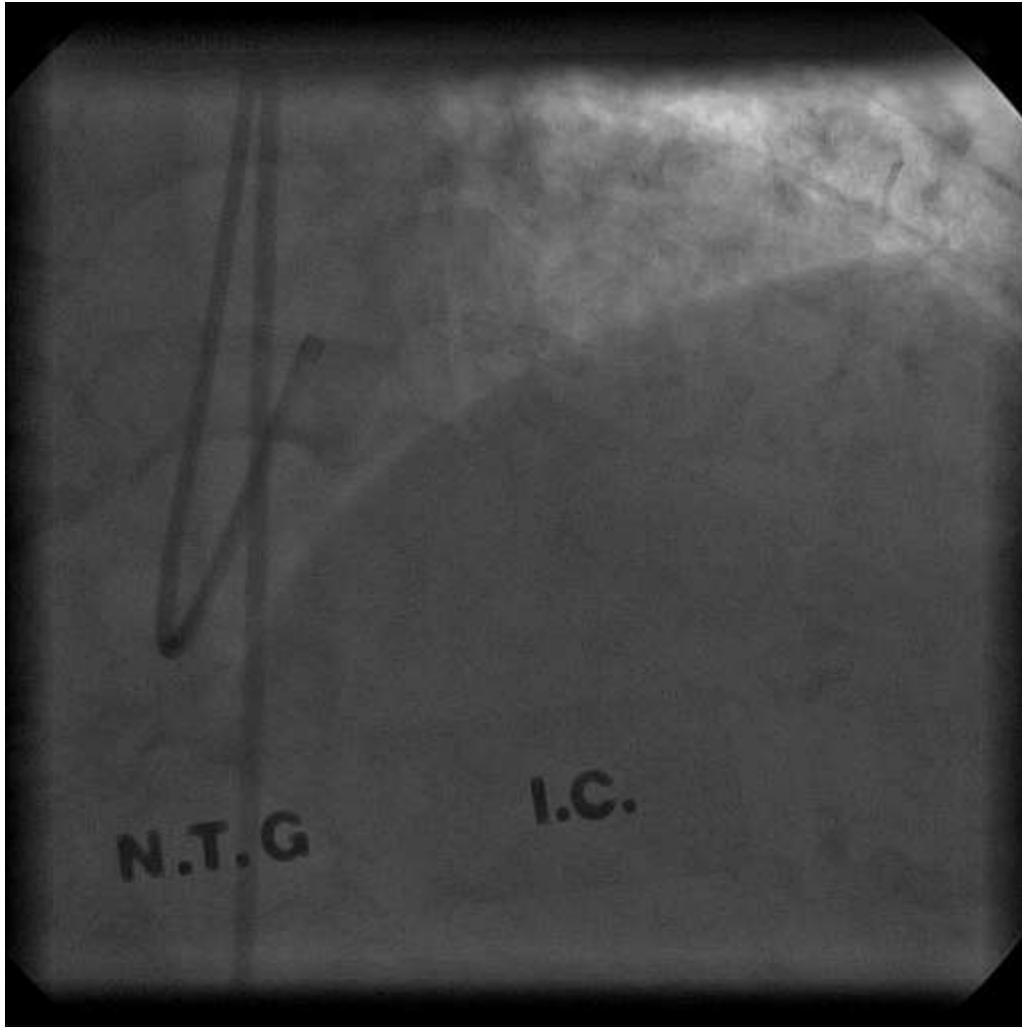


**Dissection in SB  
after FFR wire**



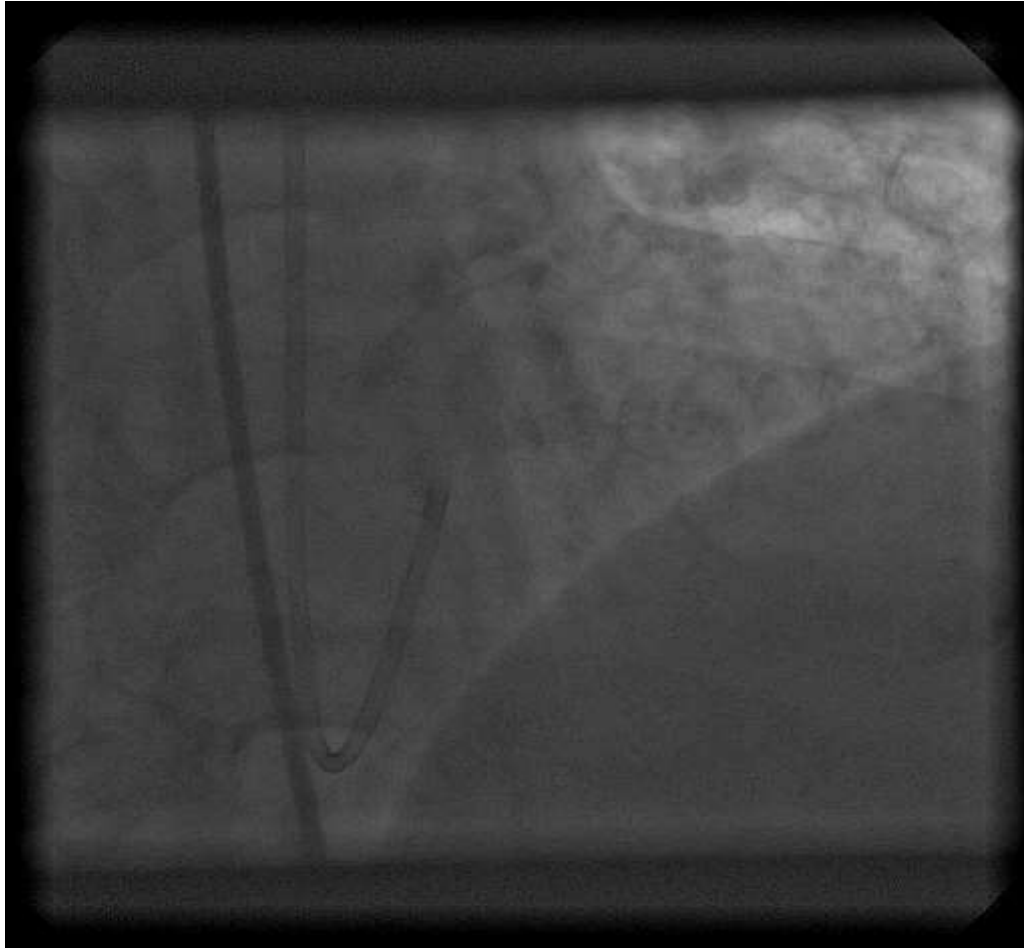
**Kissing balloon  
2.5-12mm in SB  
and  
3.5-15mm in MB**





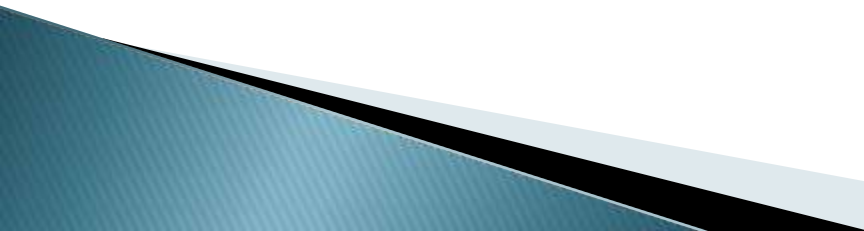
**FFR – 0,96  
(FFR wire through  
micro catheter)**

# CAG 8 months follow - up



FFR – 0,92

# Conclusions

- ▶ In the FKBD group, the SB FFR post PCI was significantly increased as compared to the no-FKBD group. No difference was detectable at follow-up
  - ▶ No significant changes in mean SB FFR during follow-up in both treatment groups
  - ▶ Angiography overestimated the functional severity of SB lesions after MB stenting
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# Take home message

- ▶ There are potential risks of usage FFR wire in SB after main vessel stenting. Specially in cases with predilatation in SB
- ▶ FFR can be helpful tool to identify those SB lesions which really need (re)intervention