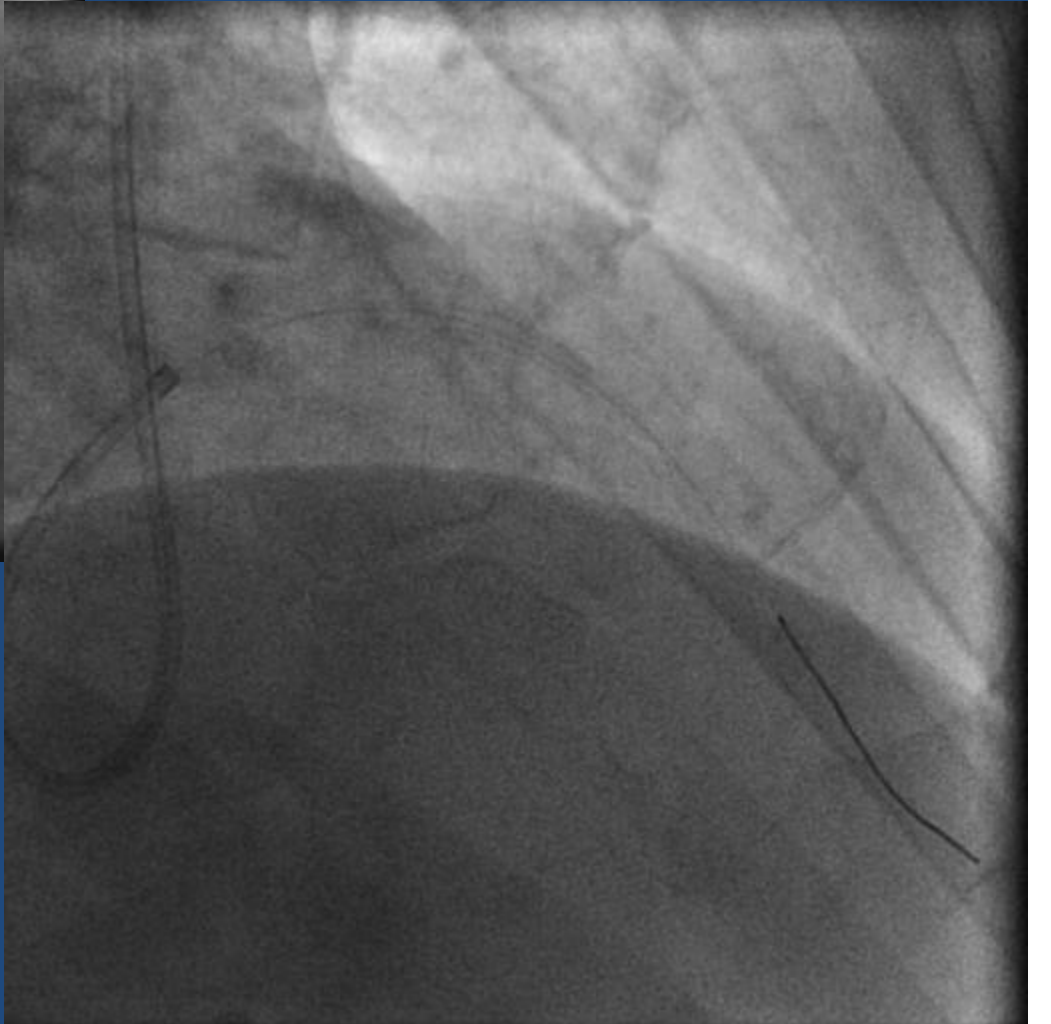
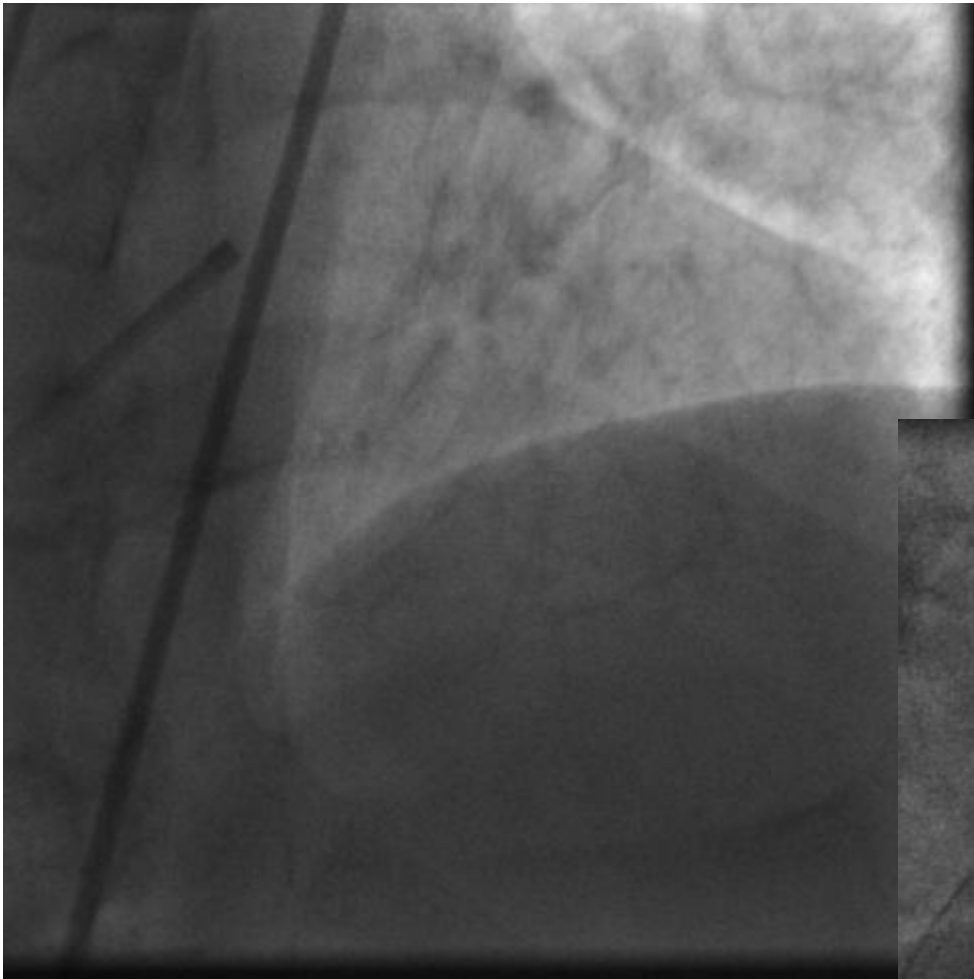


COMPLEX LESION –SMALL & DIFFUSE DISEASE

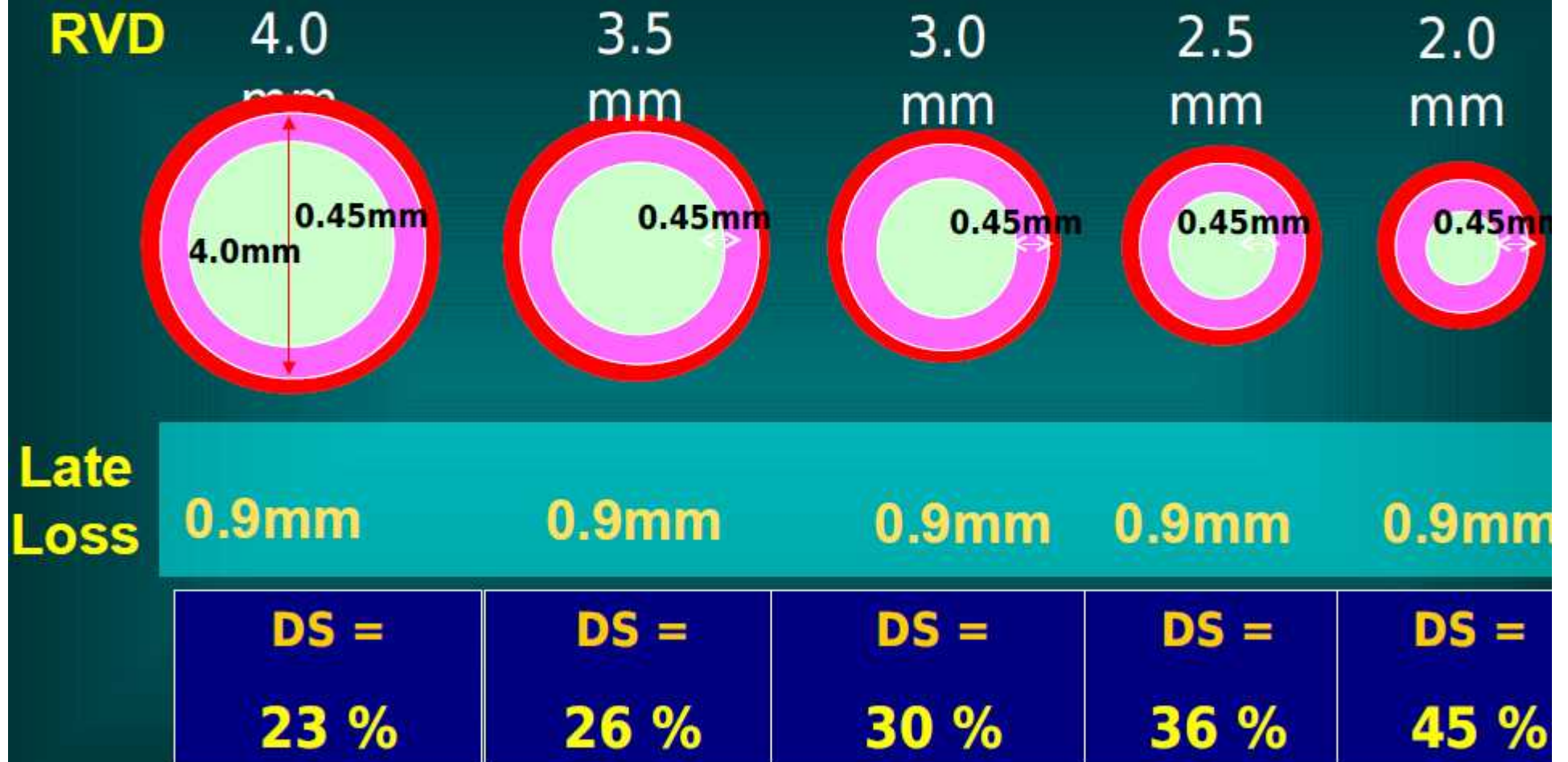
Balbir Singh MD,
Medanta Heart Institute ,
N Delhi (India)



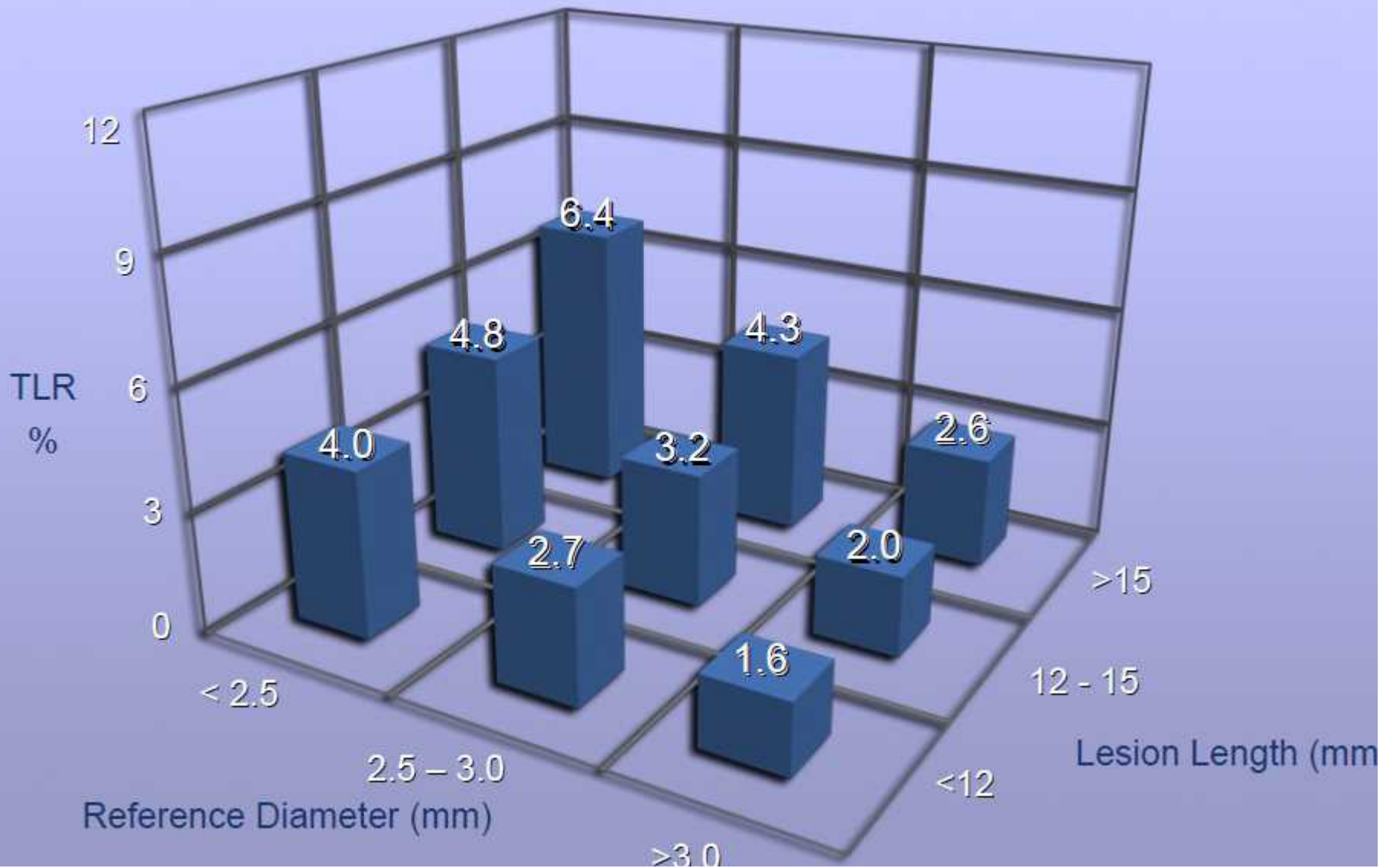
Complex lesion –Small & Diffuse disease

- ▣ Which patients should I do ?
- ▣ PTCA vs Surgery
- ▣ Salvage procedure
- ▣ Which stent , rota or cutting balloon
- ▣ What is long term effect going to be

Late Loss and % Diameter Stenosis by Vessel Size

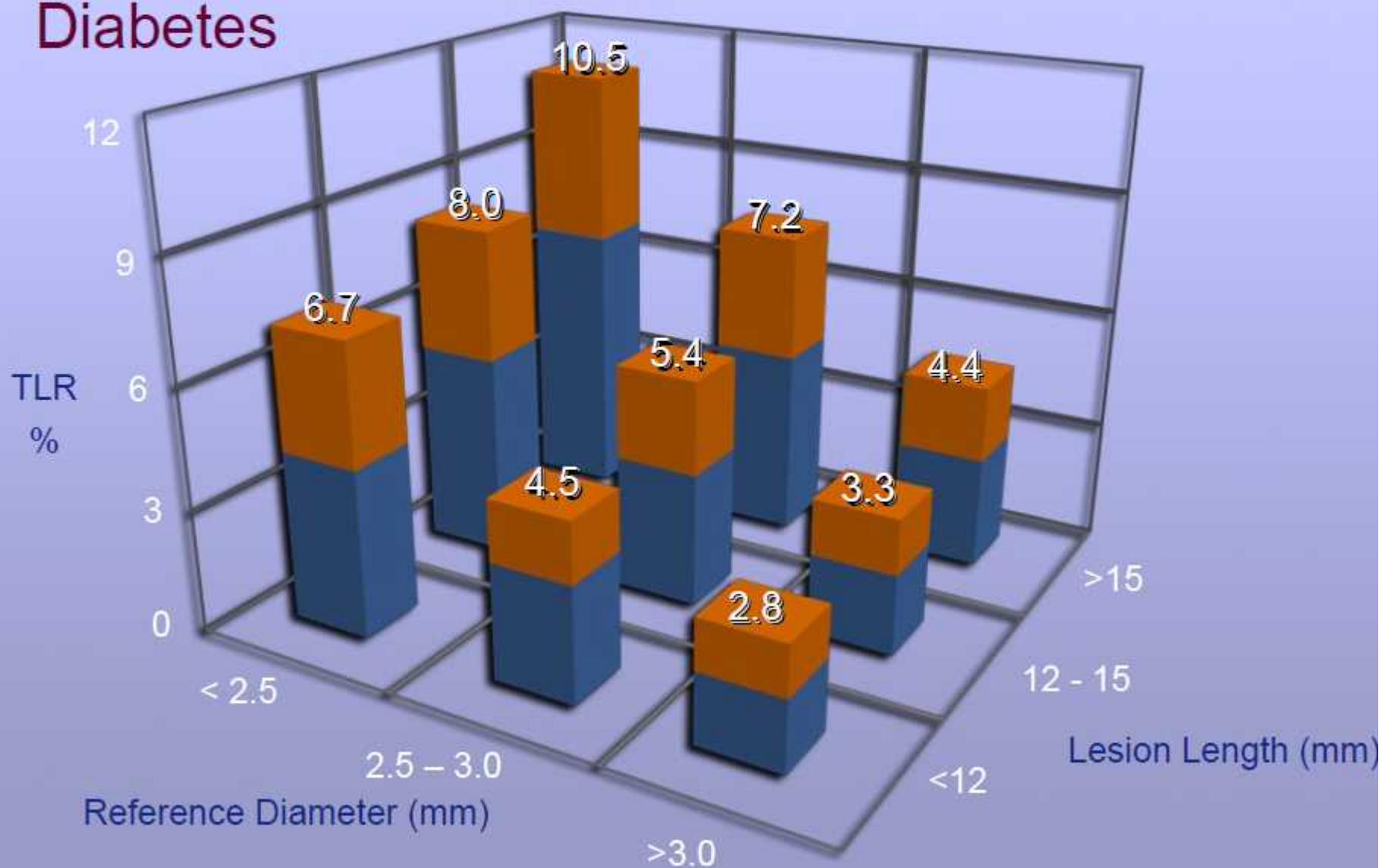


Multivariable Predictors of TLR - DES



Multivariable Predictors of TLR - DES

Diabetes



IVUS vs ANGIOGRAM

- ▣ The maximum discrepancy between IVUS and ANGIO is –
 - a) in diabetics and
 - b) in small vessel disease

Complex lesion –Small & Diffuse disease

- ▣ Reduced procedural success
- ▣ Increase in complication rates
- ▣ Increase in restenosis rates
- ▣ Increased long term MACE

The SES-SMART Study

Study Design

Non ST-elevation ACS
Chronic stable angina
Silent myocardial ischemia
De novo lesion coronary RVD ≤ 2.75 mm
Lesion severity 50-99%
Length fully covered by 33 mm stent

N = 129
Sirolimus-eluting stent
Bx-Velocity

N = 128
Uncoated stent
Bx-Sonic

Ref vessel diameter = 2.2 mm

The SES-SMART Study

Results of Quantitative Coronary Angiography

In-segment zone

Variable	Sirolimus stent group n=123	Uncoated stent group n=113	P value
Binary restenosis (%)	9.8	53.1	< 0.00
Minimal luminal diameter (mm)			
Before procedure	0.73 ± 0.23	0.71 ± 0.23	
After procedure	1.84 ± 0.36	1.79 ± 0.34	
After 8 months	1.7 ± 0.48	1.09 ± 0.6	< 0.00
Stenosis (% luminal diameter)			
Before procedure	66.88 ± 9.52	66.83 ± 10.35	
After procedure	22.39 ± 9.62	22.93 ± 10.32	
After 8 months	29.26 ± 15.84	50.78 ± 25.83	< 0.00

DES and Small Vessels

➤ **Randomized Clinical Trials**

- **SIRIUS (Sirolimus)**
- **TAXUS (Paclitaxel)**
- **FUTURE I and II (Everolimus)**

➤ **International Registries**

- **SVELTE (Sirolimus)**
- **EVOLUTION (Cobalt Chromium)**

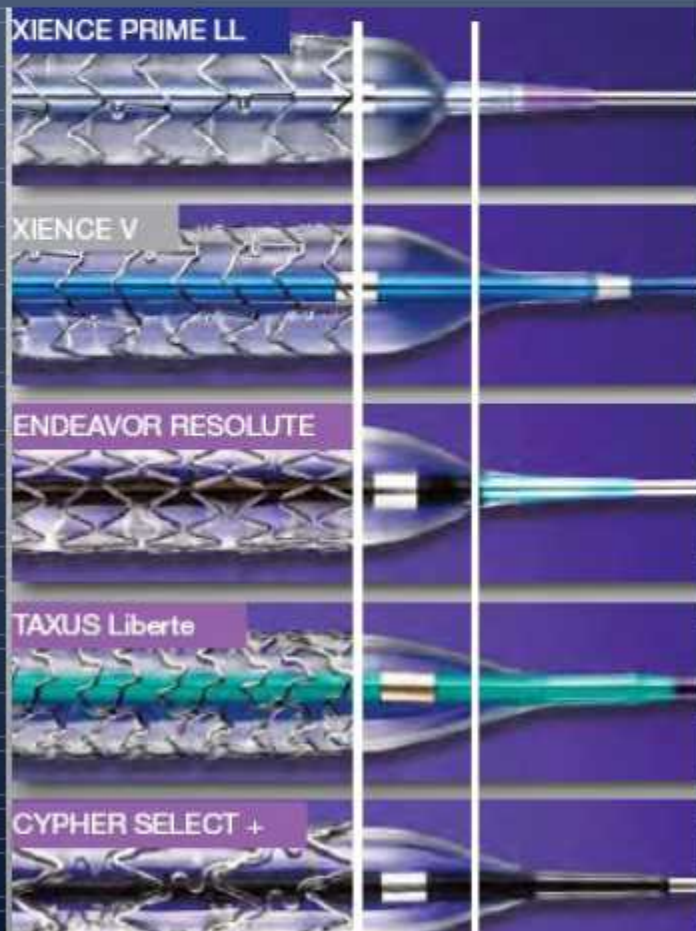
➤ **Integrated Cypher Analysis**

Integrated Analysis of 6 DES Trials: Ravel, Sirius, E-Sirius, C-Sirius, Direct and Svelt

Clinical Results in Small Vessel Lesions

	SES (909)	Control (631)	<i>p</i> -value
Death	1.0%	0.7%	0.6326
MI: Q-wave	0.8%	0.3%	0.2593
	1.9%	2.9%	0.1825
MI: Non-Q-wave			
TVR (non-TLR)	2.8%	3.4%	0.4416
TLR	3.5%	17.1%	<0.0001
MACE	6.4%	19.4%	<0.0001

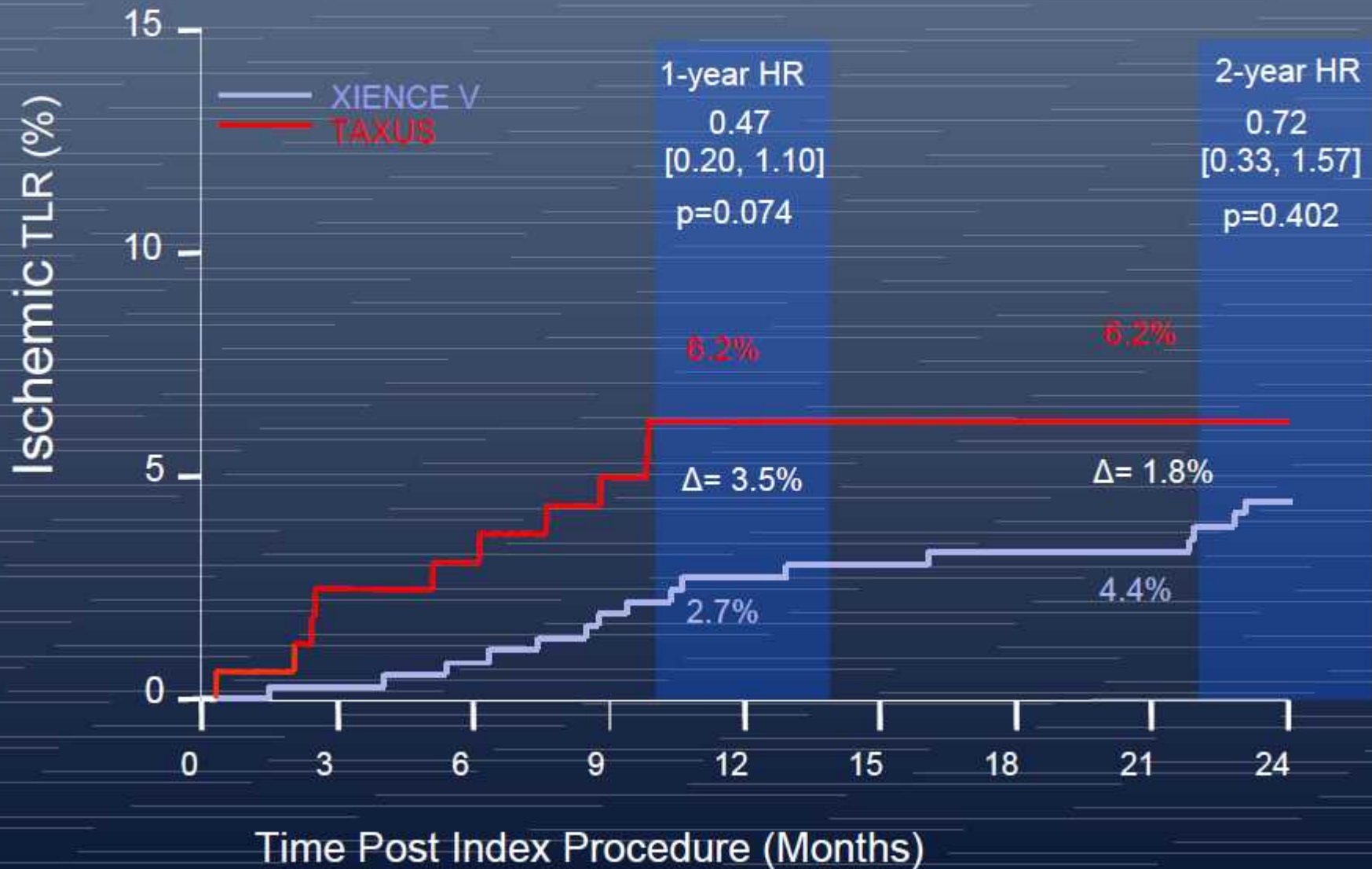
Potential for edge trauma due to Balloon protrusion



Devive	RBP (atm)	Balloon protrusion
Xience Prime LL	18	2.1
Xience V	16	3.4
Endevour resolute	16	3.3
Taxus Liberte	18	4.1
Cypher select	16	3.9

Ischaemic driven TLR through 2 Years

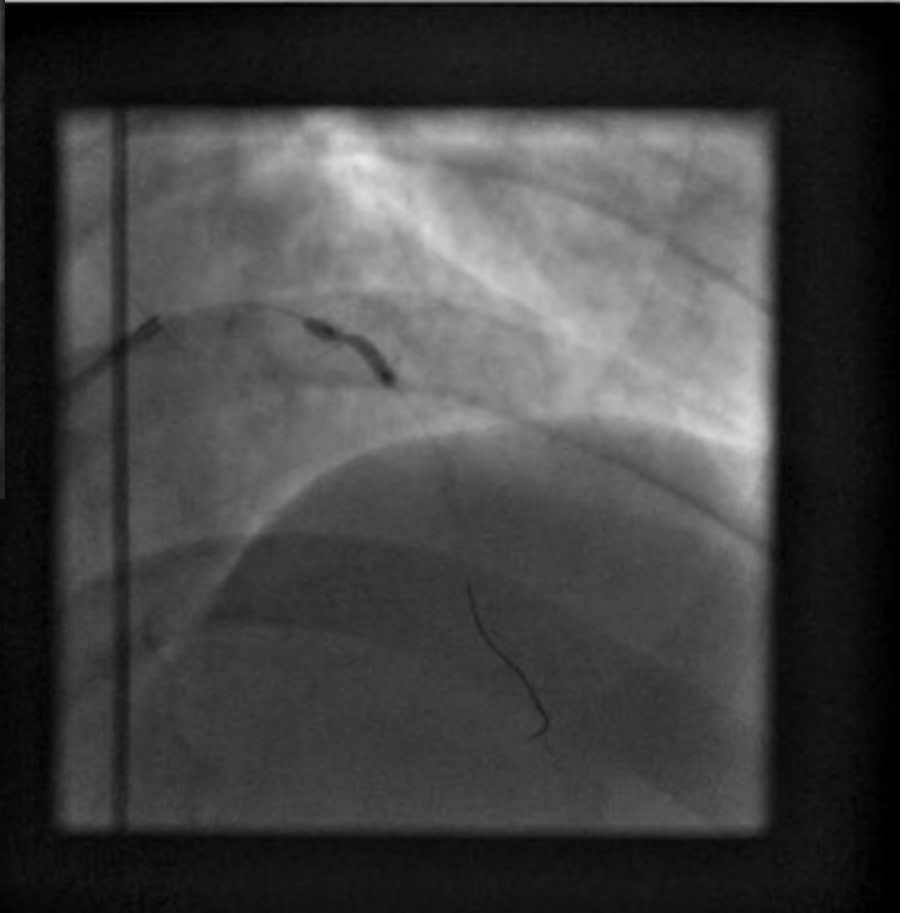
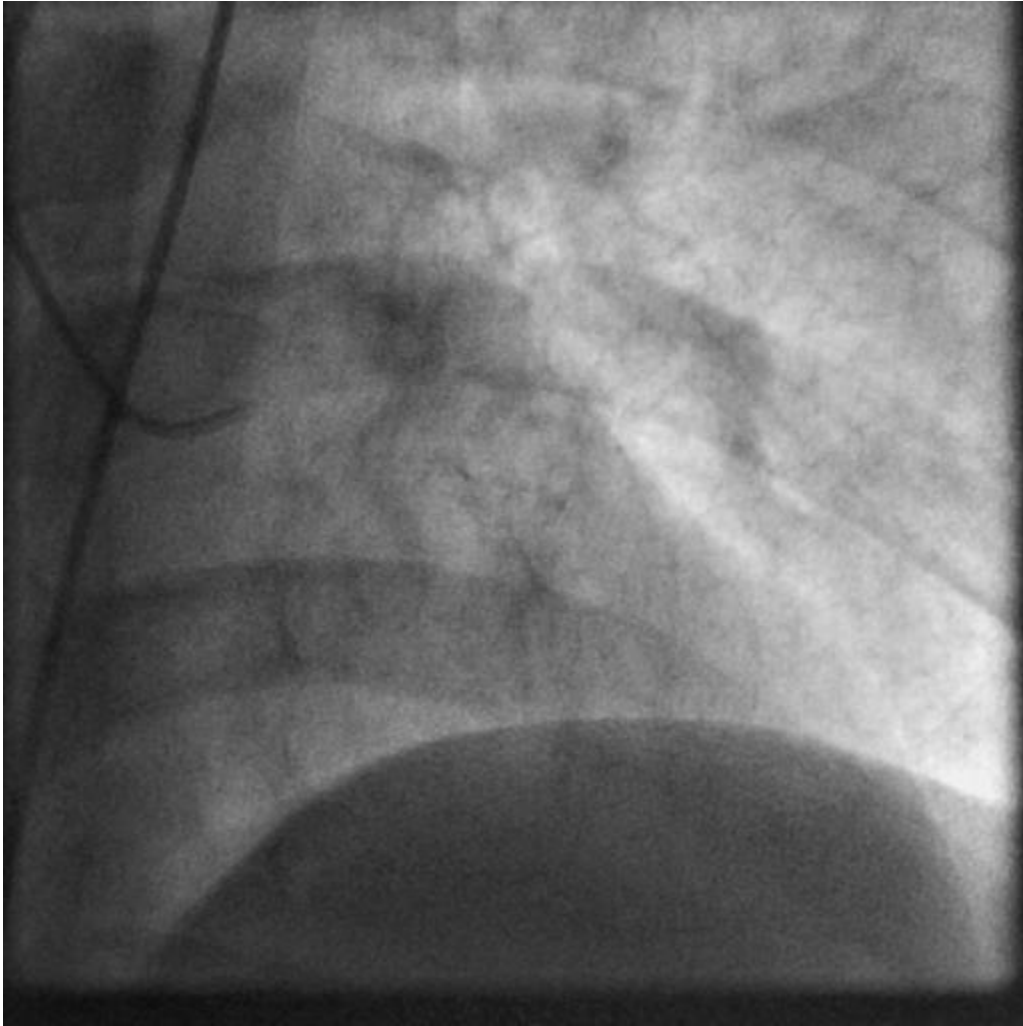
SPIRIT II/III Pooled Meta-Analysis (Lesion RVD < 2.77 mm)

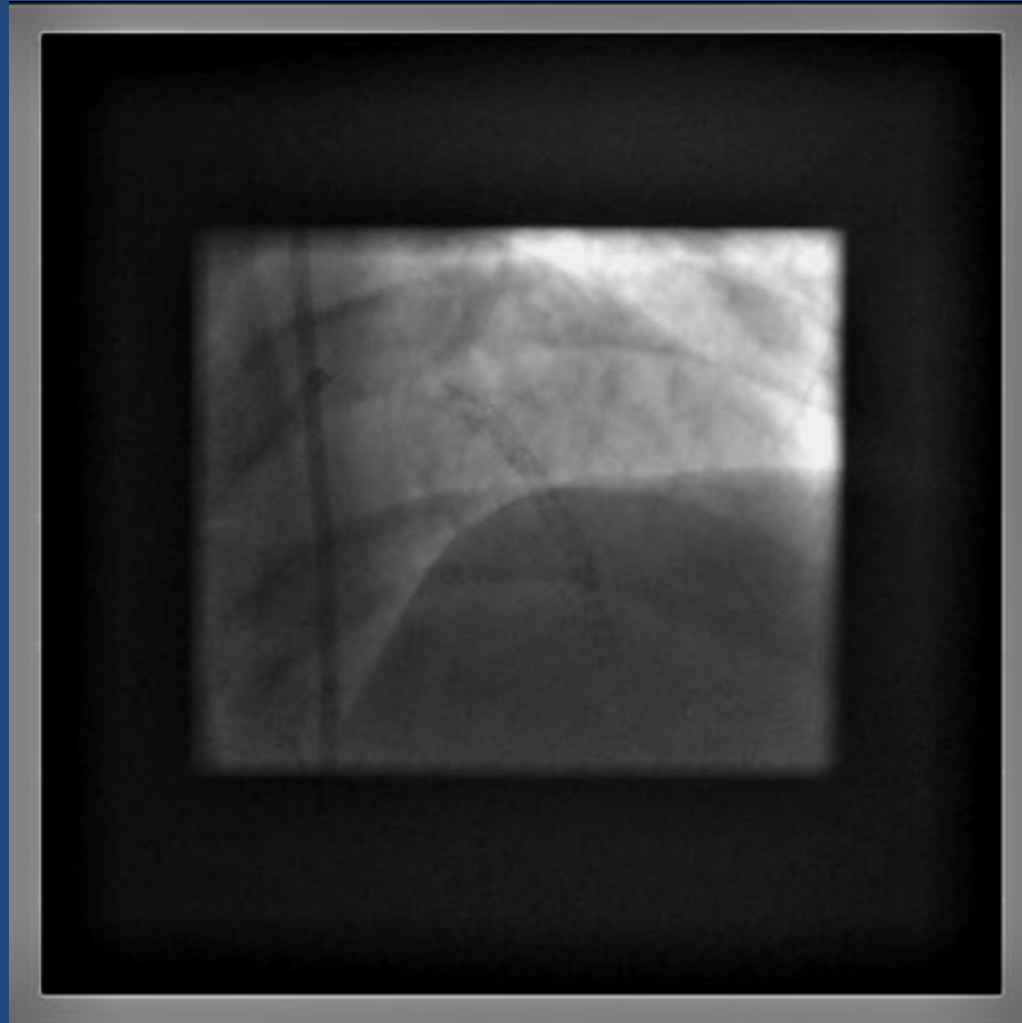


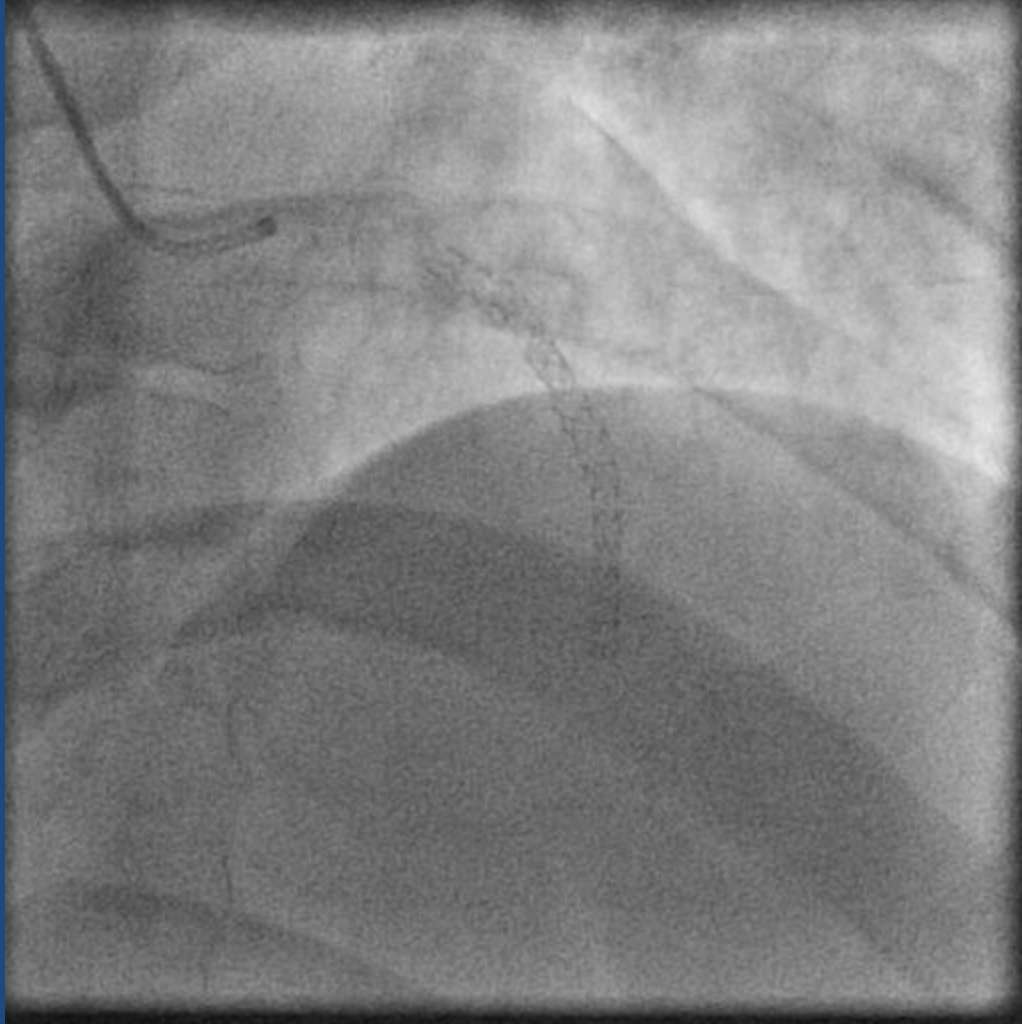
Clinical Outcomes

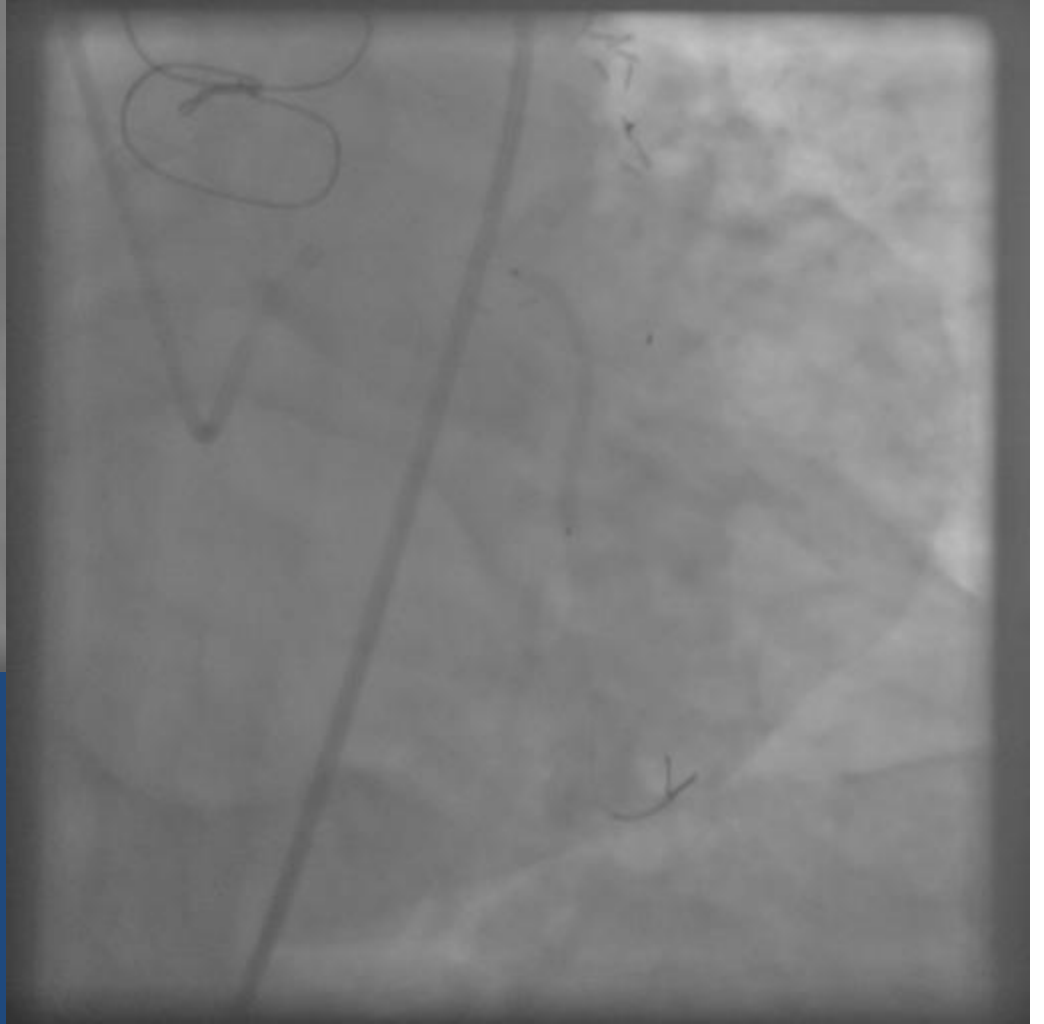
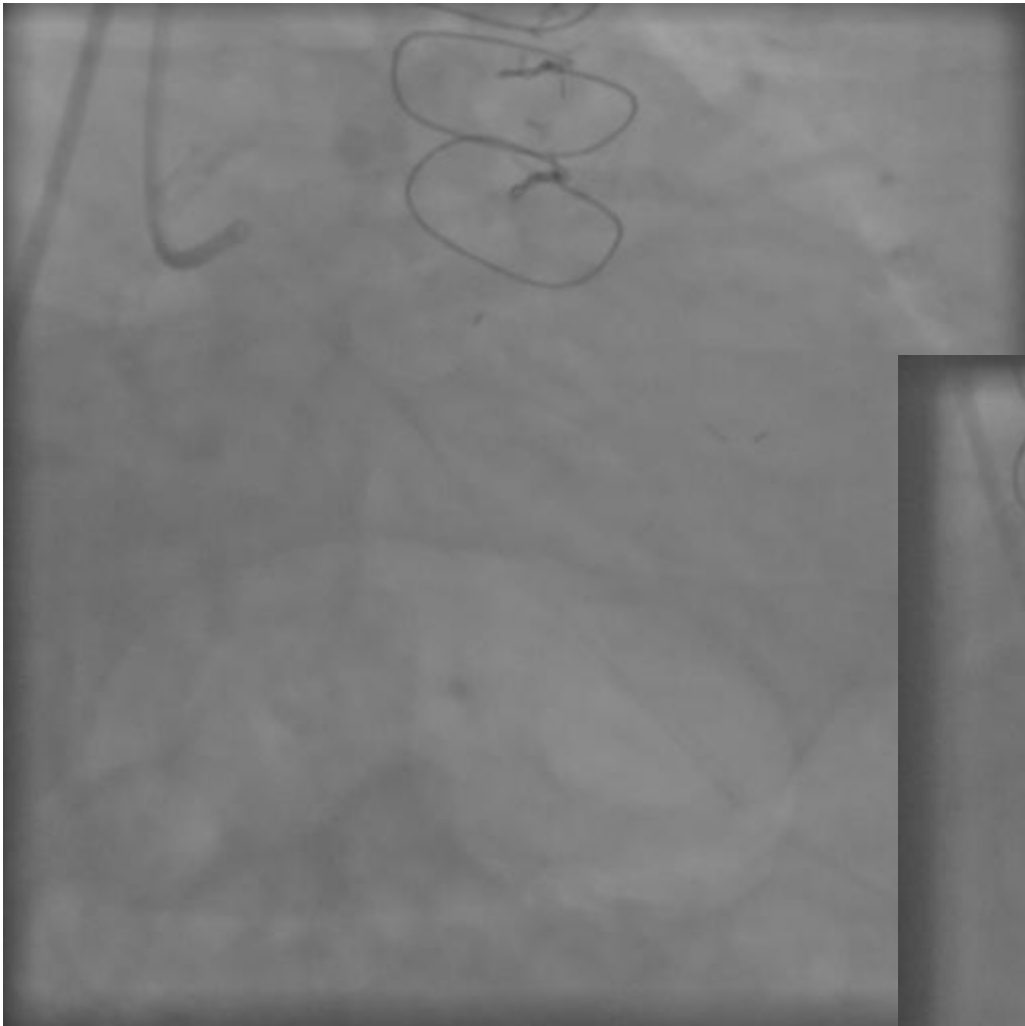


No reports of thrombosis in either arm











Objective

Safety and efficacy of the Sequent Please™ DEB (B.Braun Melsungen AG) coated with paclitaxel (3µg/mm² balloon surface area) in the treatment of significant (≥70%, <100%) stenoses in native coronary arteries (reference Ø: ≥2.25mm to ≤2.8mm, lesion length: ≤22mm) for procedural success and preservation of vessel patency

Study Design

Prospective, non-randomized, multi-center, one-arm phase-II pilot study

Outcome (N=114)

DEB Only (N=82)

DEB & BMS (N=32)

Follow-up clinical [months]	6.7 ± 1.9	6.2 ± 1.3
Follow-up: clinical [N]	82 (100%)	30 (93.75%)
Follow-up: angiographic	73 (89%)	28 (87.5%)
Late lumen loss [mm]	0.18 ± 0.38	0.67 ± 0.67
Binary restenosis in segment	4/73 (5.5%)	11/28 (39.3%)
Binary restenosis in lesion	4/73 (5.5%)	10/28 (35.7%)
Total MACE	5/82 (6.1%)	10/30 (33.3%)
TLR	4/82 (4.9%)	9/30 (30.0%)
Myocardial infarction	1/82 (1.2%)	*1/30 (3.3%)
Death	0/82 (0 %)	0/30 (0 %)

Summary

- Drug-eluting stents, as a class, is the treatment of choice for focal and long lesions in small vessels
- Whether this will prove true as drug-eluting stents are implanted in more diffusely diseased and calcified small vessels is unknown