

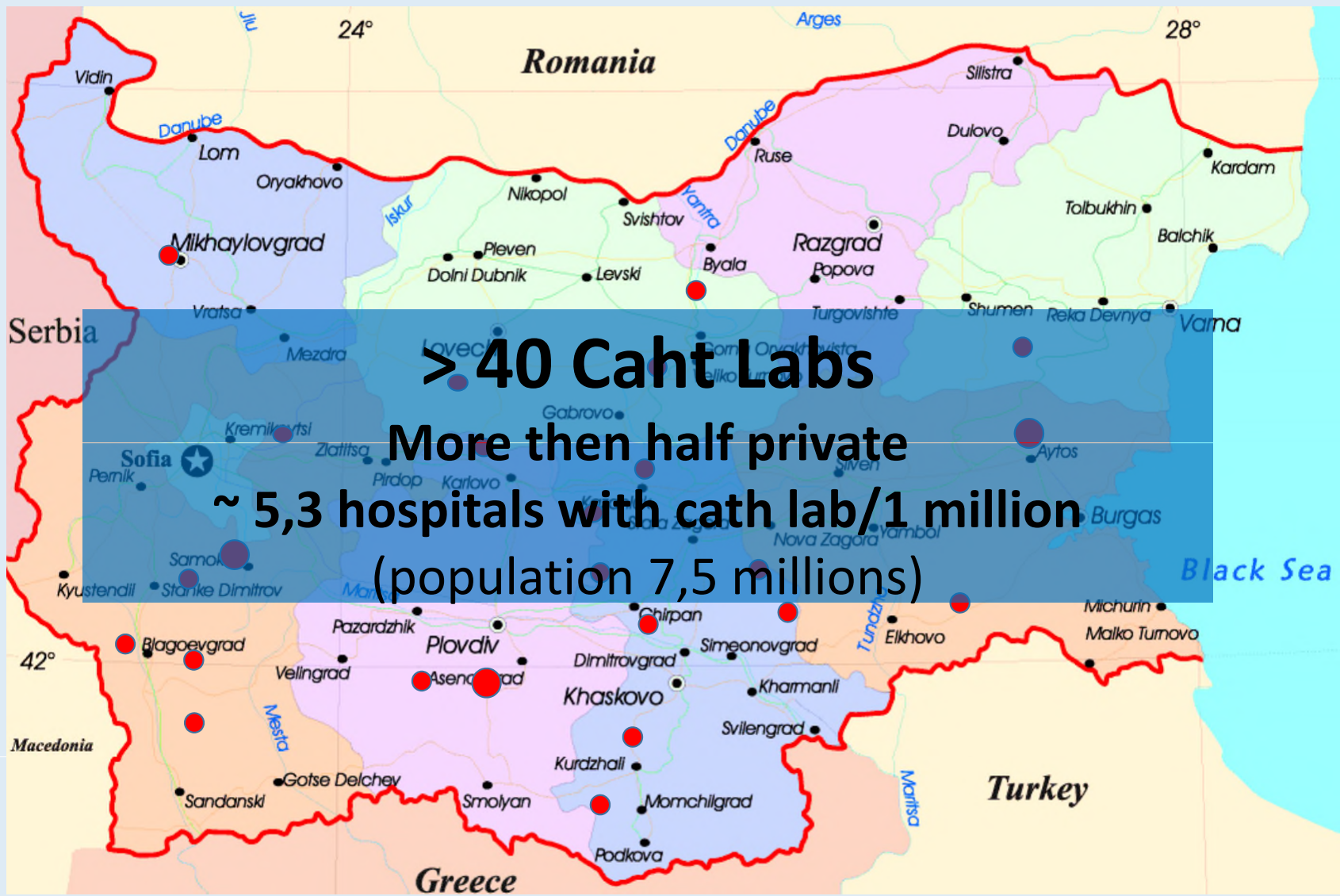
PATIENT ORIENTED APPROACH FOR LEFT MAIN PCI

Valeri Gelev

No conflict of interest regarding this presentation.

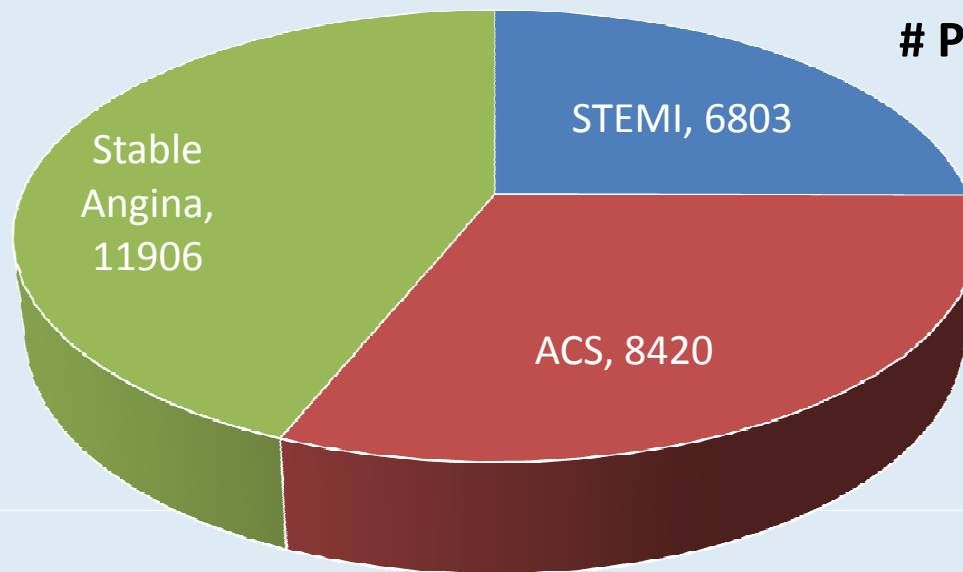






PCI Procedures in Bulgaria 2014

Dg 37 000
PCIs 27 129*



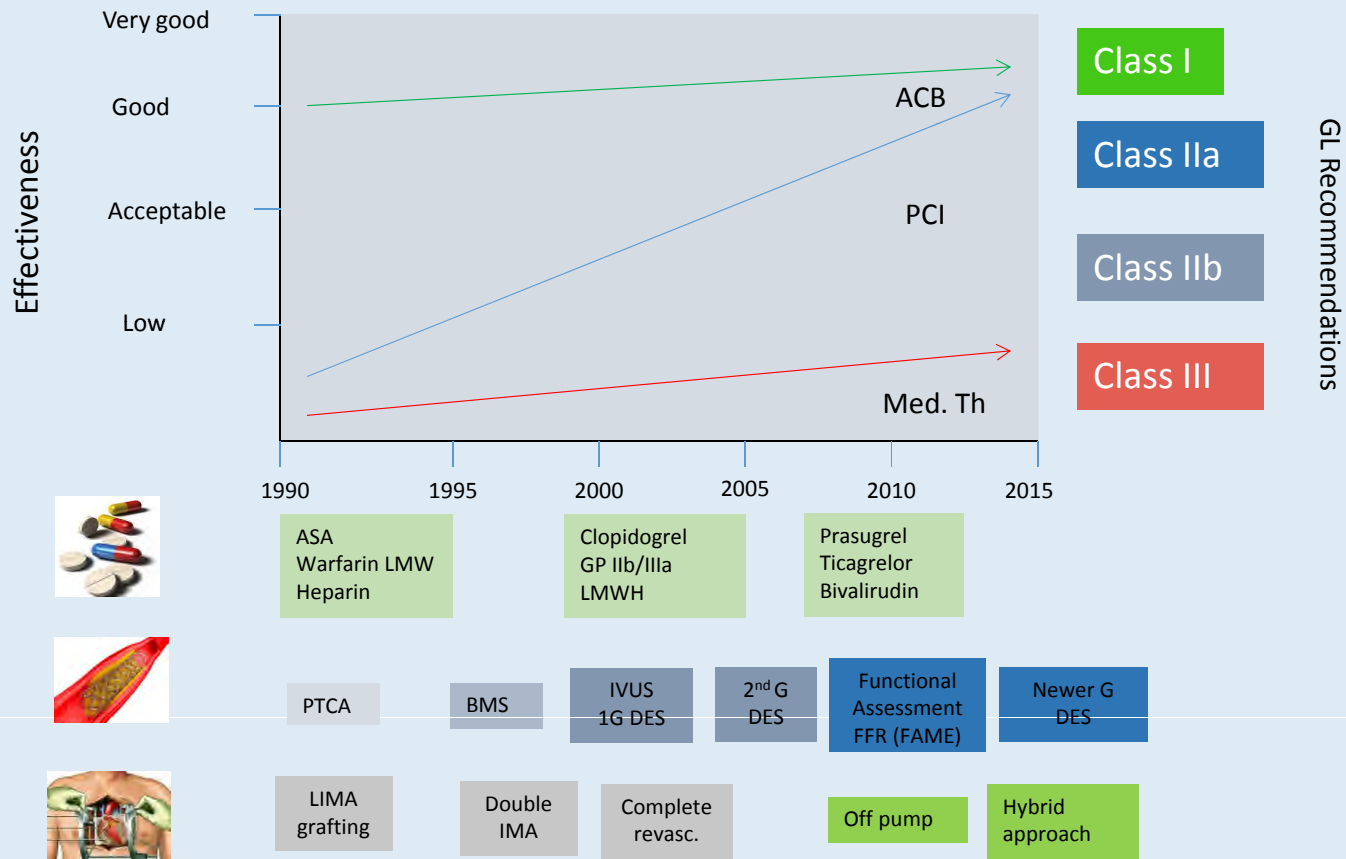
* Including Endovascular Peripheral Procedures

Left Main Disease and Ischemia

- 4.8% of patients undergoing coronary angiogram
- Male gender and Age are the only independent predictors
- Associated with 3-VD in approx. 50% of the cases
- Isolated LMCA stenosis in 5% (more frequent in women)
- Bifurcation involvement 74% vs. shaft /ostium 24%
- Flow limiting stenosis of LM compromises flow to at least 75% of the left ventricle myocardium.

**Conley MJ, Ely RL, Kisslo J, et al. The prognostic spectrum of left main stenosis. Circulation. 1978;57:947-952.*

The Development of the Therapeutic Approach for LM Disease



Between March 2013 - September 2016

133 consecutive pts with LM Disease were
threated with PCI



ACIBADEM
CITYCLINIC
TOKUDA HOSPITAL

Indications

- LM stenosis >70%
- LM stenosis 50-70% plus
 - Non invasive evidences of LM Ischemia
 - Or LM MLA < 6 mm²
 - Or LM FFR < 0.8

Follow up of patients:

- MACE - Death, Ischemia driven TLR, Stroke
- Angiographic FU between 4-8 months
- Clinical FU is done every 6 months.

Decision Making Process for LM Revascularization

PATIENT CHARACTERISTICS

LV Function
Clinical Syndrome
Aortic calcification
Comorbidity
DAPT compliance



RISK CALCULATORS

EUROSCORE

ANGIOGRAPHIC CHARACTERISTICS

Extent of disease
Quality of targets
Likelihood of successful PCI
Operators experience
Completeness of revascularization



SYNTAX SCORE

Heart Team Discussion
Discussion with Patient/Family for Patient Preference

PCI after signed informed consent

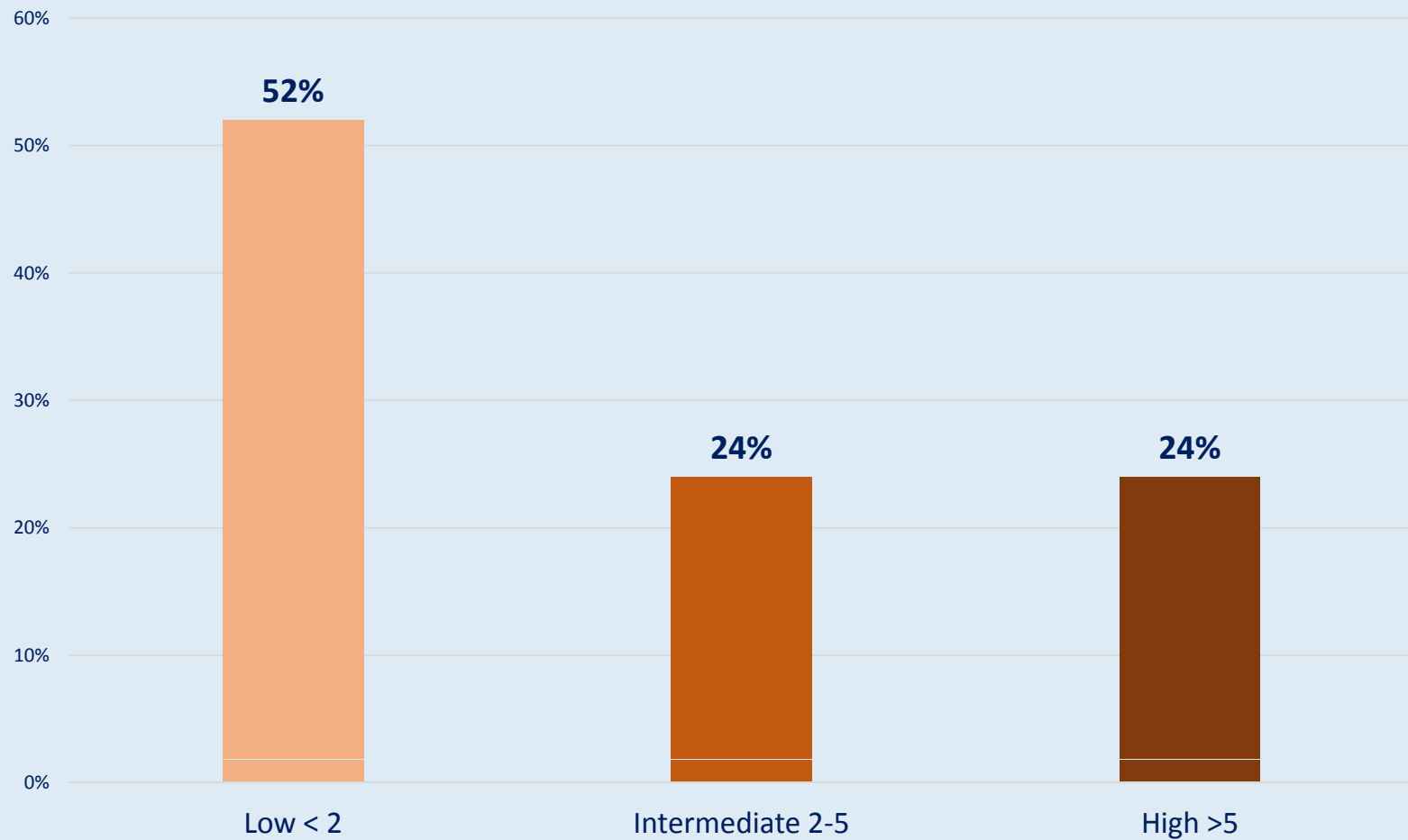
Baseline Data - 1

Age (years) mean	66.34 ± 11,64	
Male	93	69,9%
Female	40	30,1%
Diabetes	52	39,09%
- Insulin-treated	21	15,78%
Hypertension, medically treated	114	85,7%
Hyperlipidemia, medically treated	108	81,2%
Current smoker	15	11,7%
CKF	15	11,2%
PAD	20	15,03%
Prior stroke or TIA	8	6,01%

Baseline Data - 2

	n	
Clinical presentation		
- STEMI	12	9,1 %
- STEMI shock	7	5,2 %
- ACS w/o ST elevation	54	36,8 %
- Stable angina	67	54.1%
Prior revascularization	70	52,63 %
- PCI	45	33,83%
- CABG	32	24,06%
Left ventricular ejection fraction (%)	54,52 % ± 11,32	

Distribution According to Logistic EuroSCORE

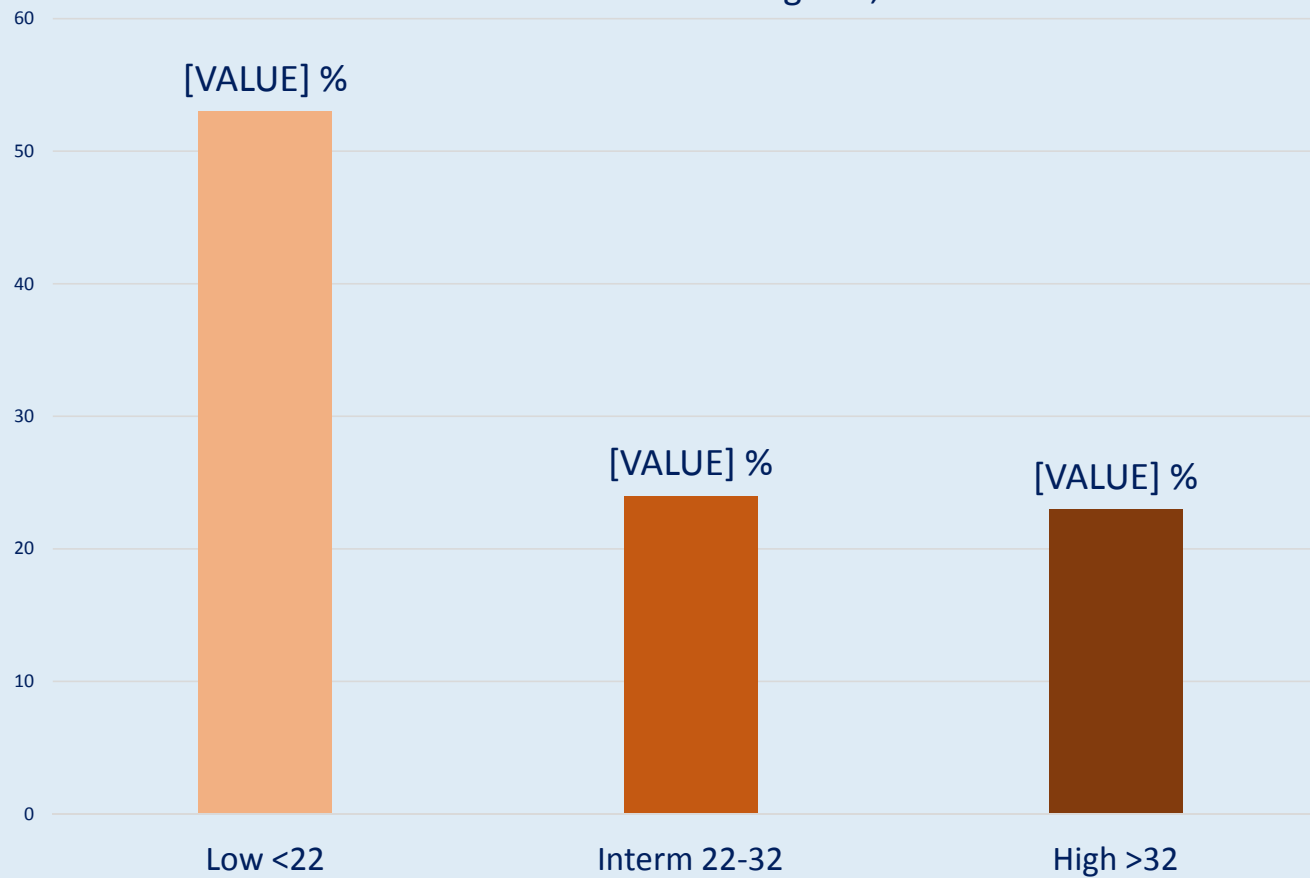


Cath Lab Data

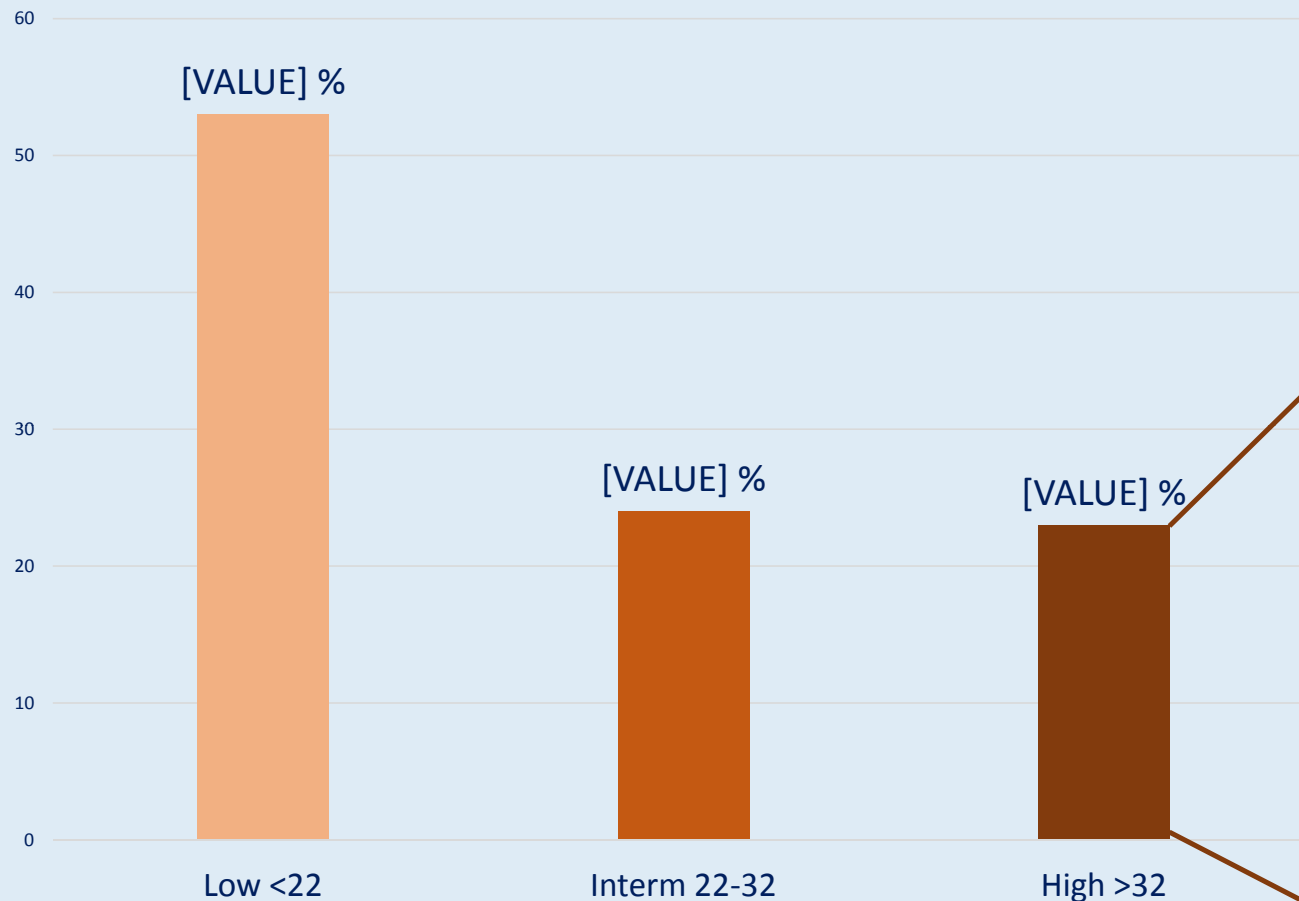
Qualifying LM lesion		
- ostial and shaft LM coronary segment	15	11,27 %
- distal LM bifurcation/ trifurcation	118	88,72 %
Diseased non-LM coronary arteries		
- 0	31	23.30 %
- 1	55	41.77 %
- 2	31	23,31 %
- 3	16	12,03 %

Distribution According to (r)Syntax SCORE

Average 24,2



Distribution According to (r)Syntax SCORE

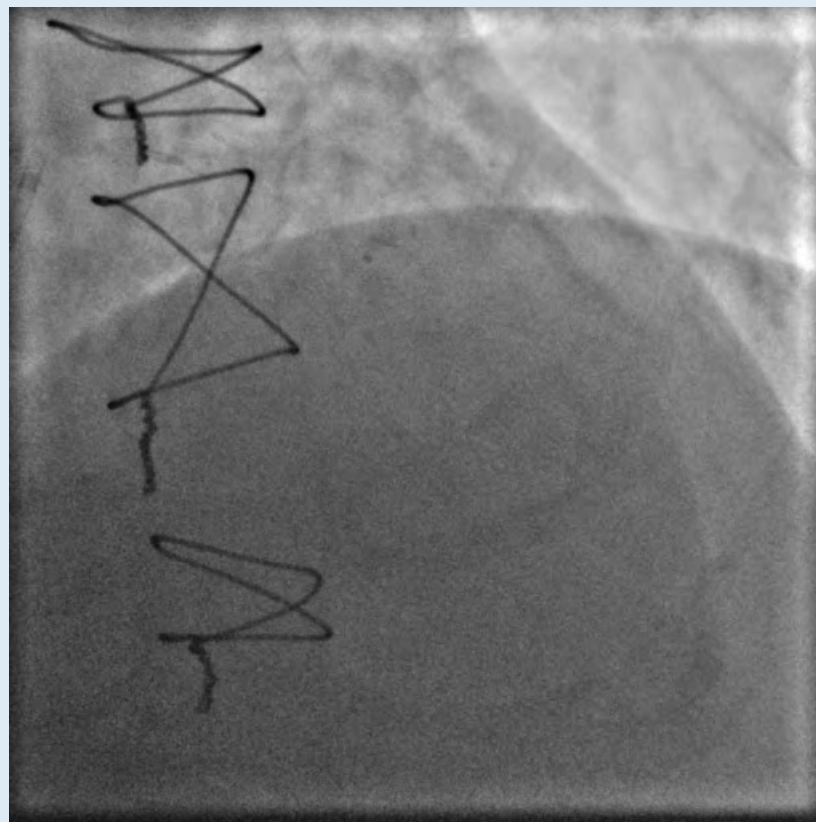
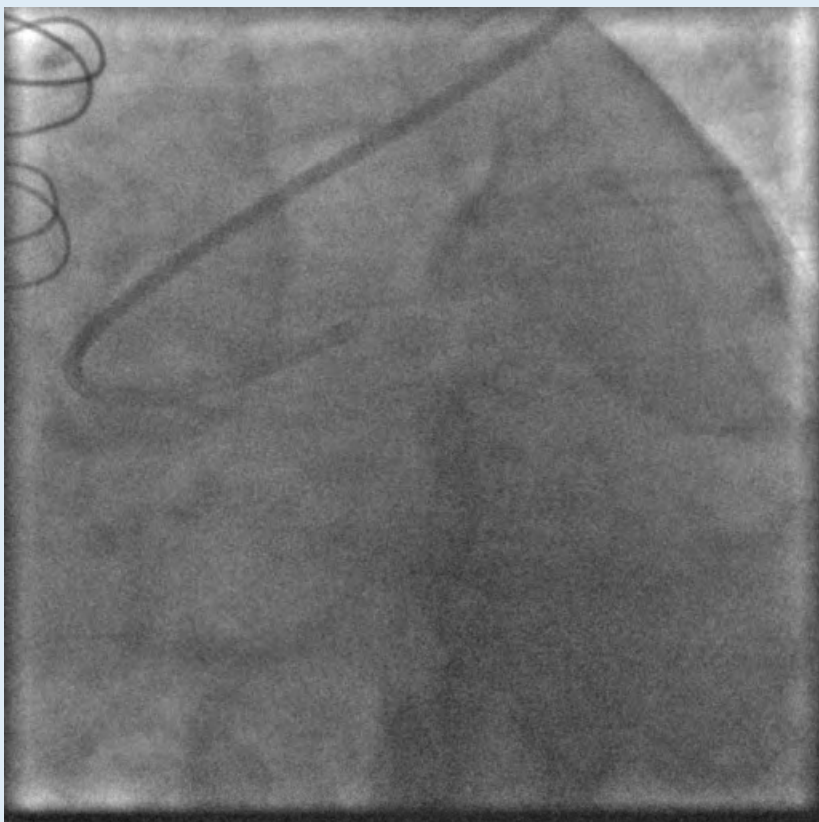


Average 39,8
¼ were with Euro Score > 6
(assumed as poor candidates for surgery)

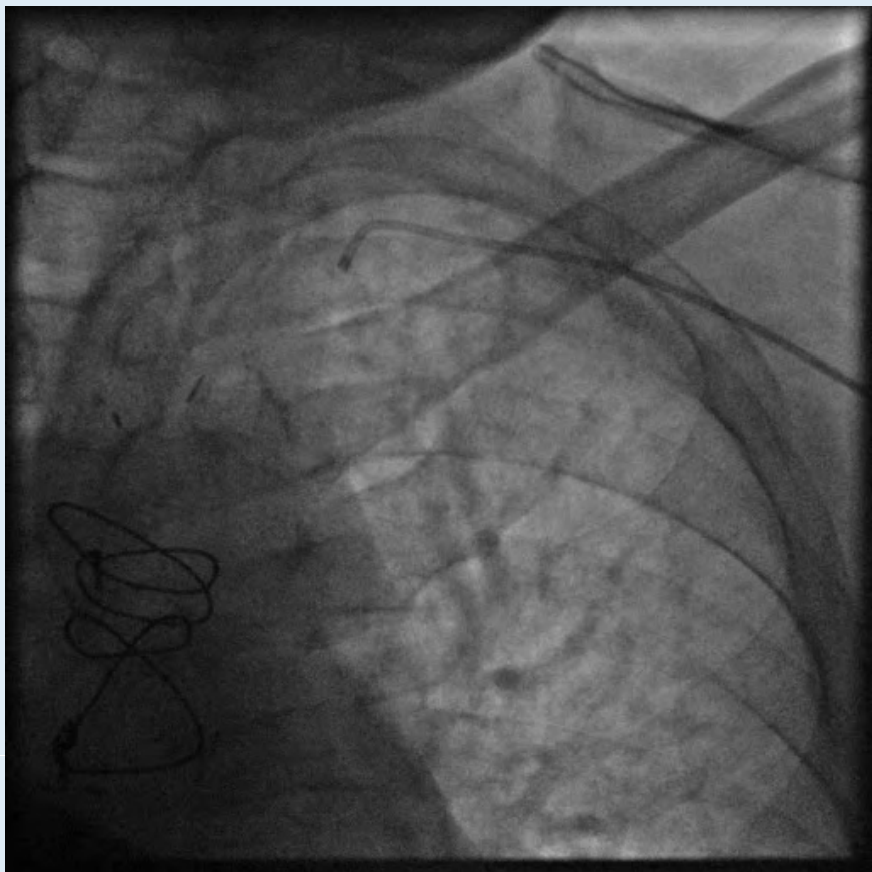
¾ indisputably refused surgery, despite profound discussion about immediate and long term risks of PCI.

The majority of these pts aged below 60 or above 80.

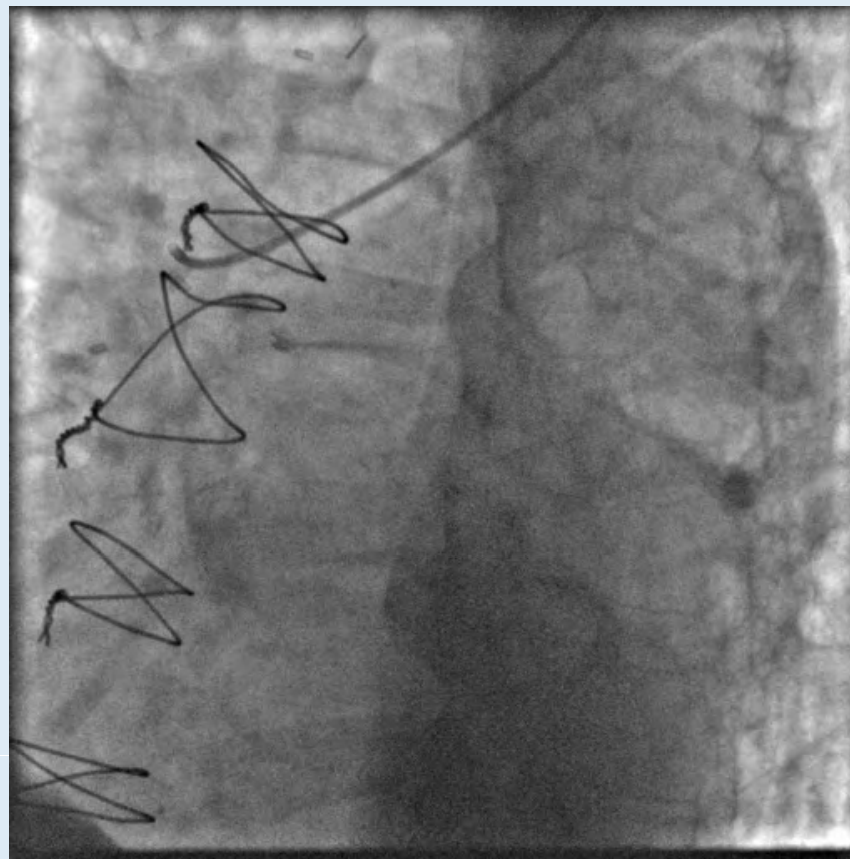
Left coronary artery



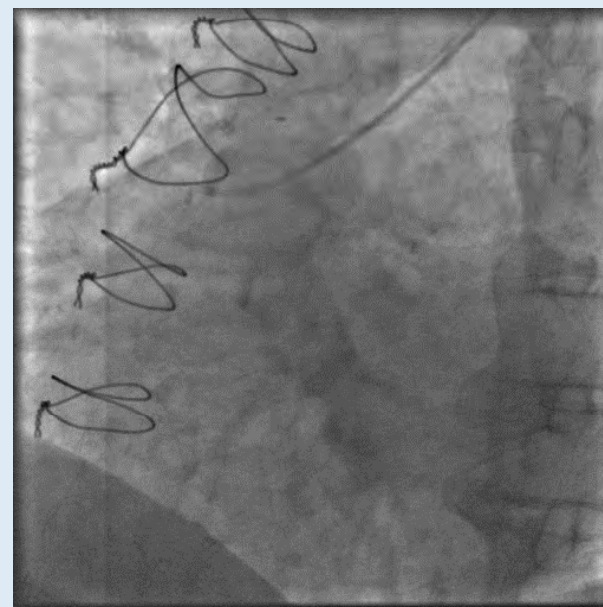
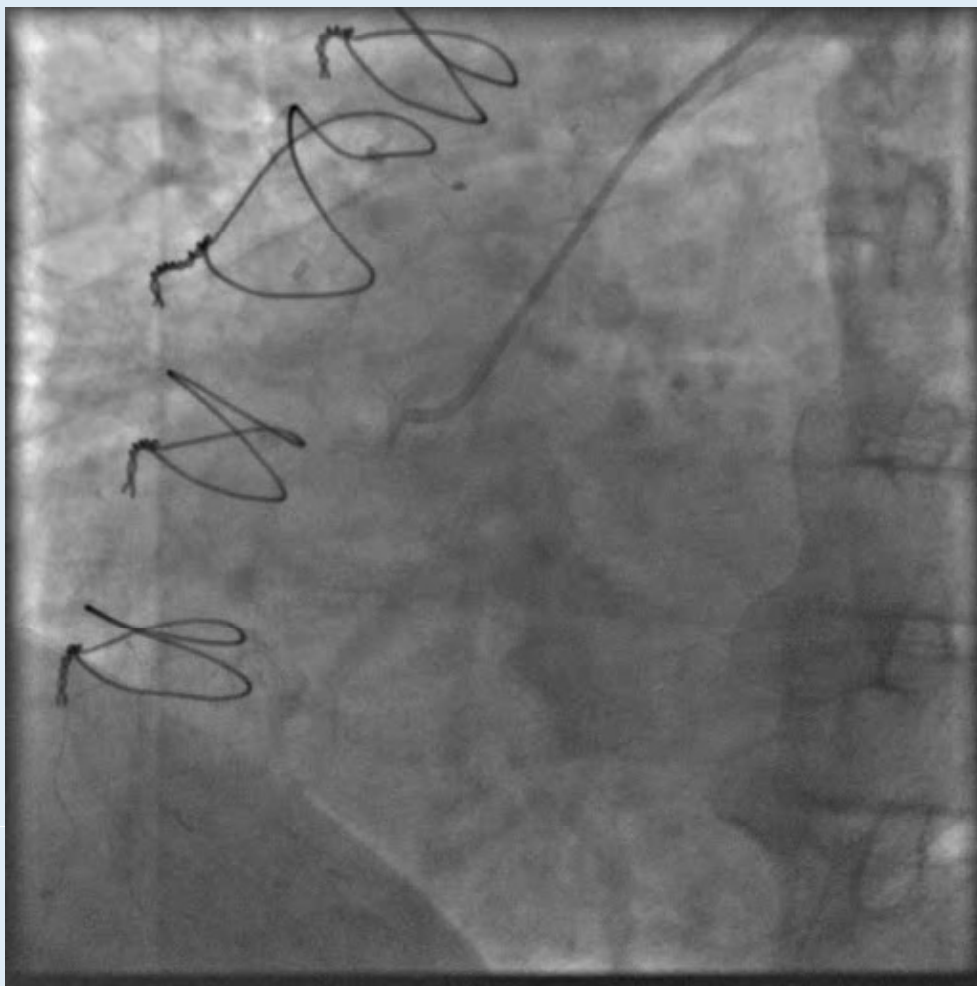
LIMA to LAD



SVG to OM1



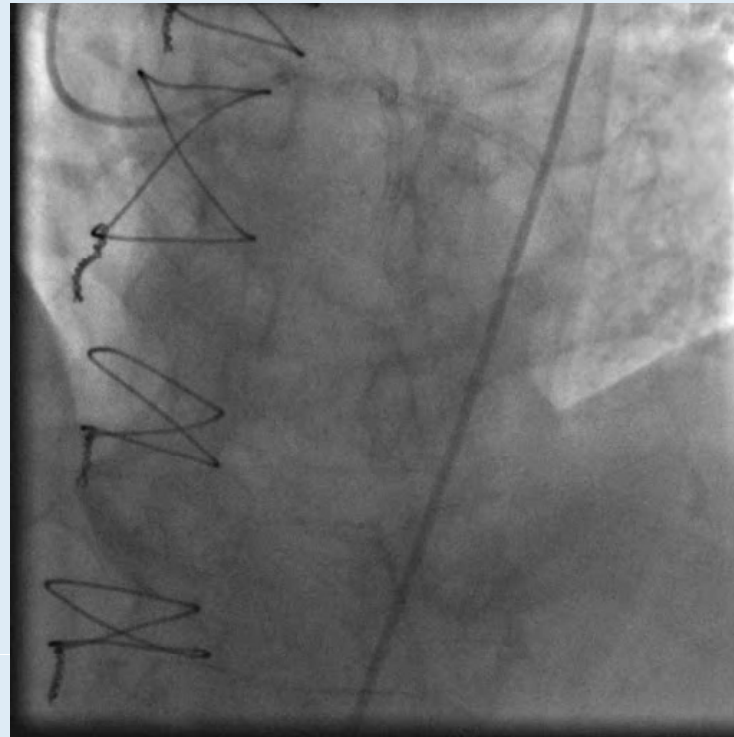
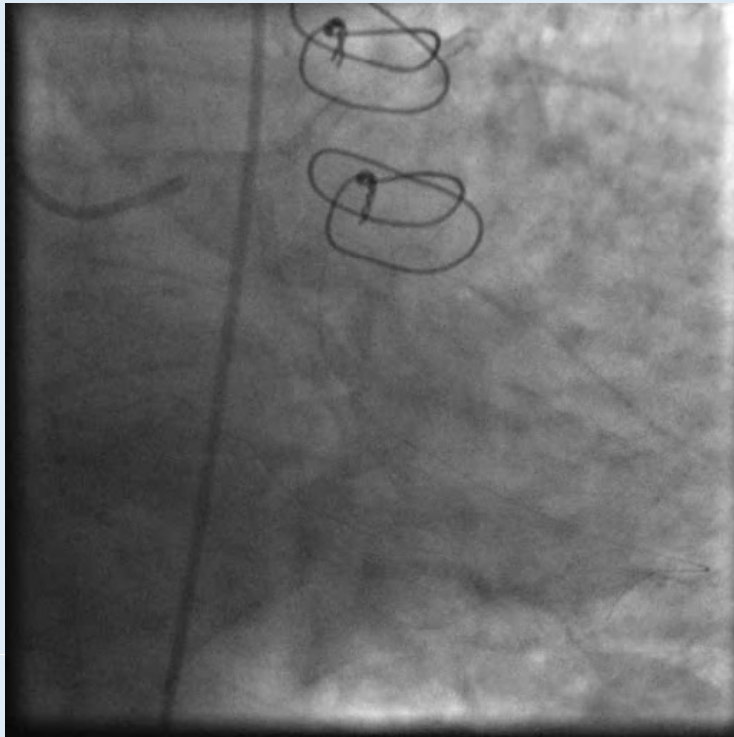
Native Right coronary artery and SVG to RCA



- rSyntax score 54 ?;
- Prior CABG surgery;
- Patient refuses reoperation.

Final result after PCI of LCA

- Recanalization of LAD
- Rotablation of LAD and LM
- LCX stenting
- LM stenting





Result after recanalization of RCA
3 months later, because of large
territory of inducible ischemia on
non-invasive testing.

Technical Approach

- Provisional stenting – the preferred approach.
 - Planned 2-stent technique in cases with:
 - significant ostial lesion of LCx and calcification.
 - severely angulated vessel or difficult access to SB.
 - significant disease requiring treatment.
- Proximal Optimization Technique(POT) in almost all cases.
- Kissing balloons technique
 - in angiographically compromised ostium of LCx, in part of the cases verified by functional assesment; followed by POT.
- In all cases vigorous postdilation in all stented parts with NC balloons.
- IVUS guidance was highly recommended for all cases.

PCI Procedure

133 patients, 295 stents

Arterial access site	
- Femoral	57,89 %
- Radial	42,10 %
IVUS guidance	54,14 %
FFR assessment	2,25 %
Hemodynamic support device*	3,0 %
Contrast use (ml)	292 ± 106
Fluoroscopy time (min)	29 ± 18

Vessels treated per pt	1.7 ± 0.8
- LM	100.0%
- LAD	50,4 %
- LCX	39,1 %
- RIM	3,00 %
- RCA	18,4 %
Lesions treated per pt	2,1 ± 1.1
Stents implanted per pt	2,2 ± 1.4
- Total stent length (mm)	32,19 ± 18.21
Type of stents implanted	
- DES	99.25 %
- BMS	0,75 %

PCI Procedure

133 patients, 295 stents

Stent technique		
- 1 stent technique (provisional)	115	86.47 %
- 2 stent technique	18	13.53 %
POT	121	90,98 %
Kissing balloons inflation	51	38,34 %

Peri-procedural Medications

	PCI (n=133)
Aspirin pre-procedure	100.0 %
P2Y12 receptor inhibitor pre-procedure	99.3 %
- Clopidogrel	59.9 %
- Prasugrel or Ticagrelor	40.1%
Heparin anticoagulation	100 %
Glycoprotein IIb/IIIa inhibitor use	3,01 %

Outcomes

	N=133	
Procedural success	128	96,2%
At 30 Days		
MACE (Death, stroke, TLR)	5	3,7%
- Death	5 (4)	3,7%
- Stroke	0	0
- TLR	0	0
Mean FU 23.8 months (6 – 45 months)		
MACE (Death, stroke,TLR)	20	15,03 %
- Death	12	9,02 %
- Cardiovascular	9	6,77 %
- Definite non-cardiovascular	3	2,26 %
- Stroke	1	0,75 %
- TLR	7	5,26 %

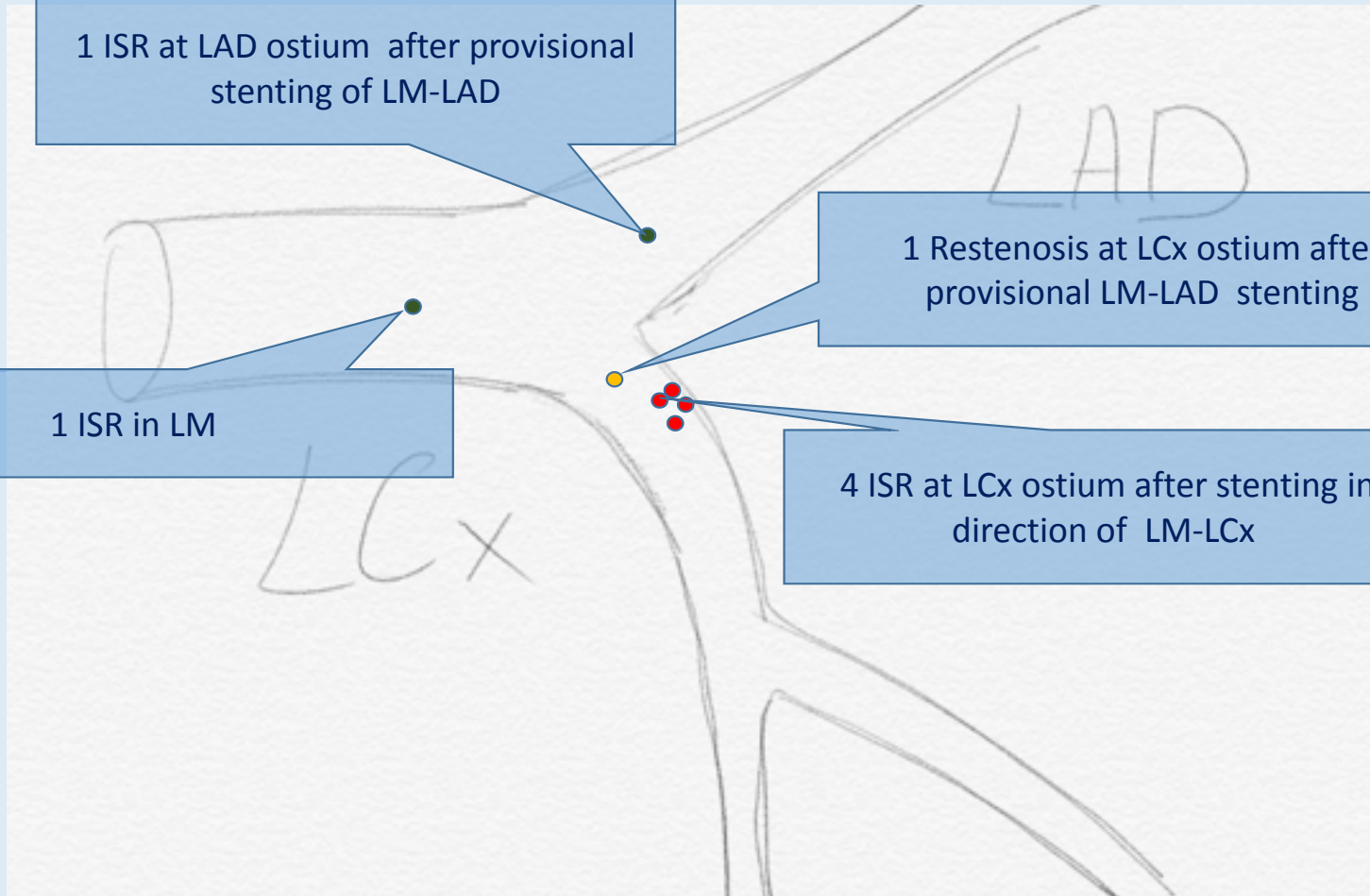
Localization of Restenosis

1 ISR at LAD ostium after provisional stenting of LM-LAD

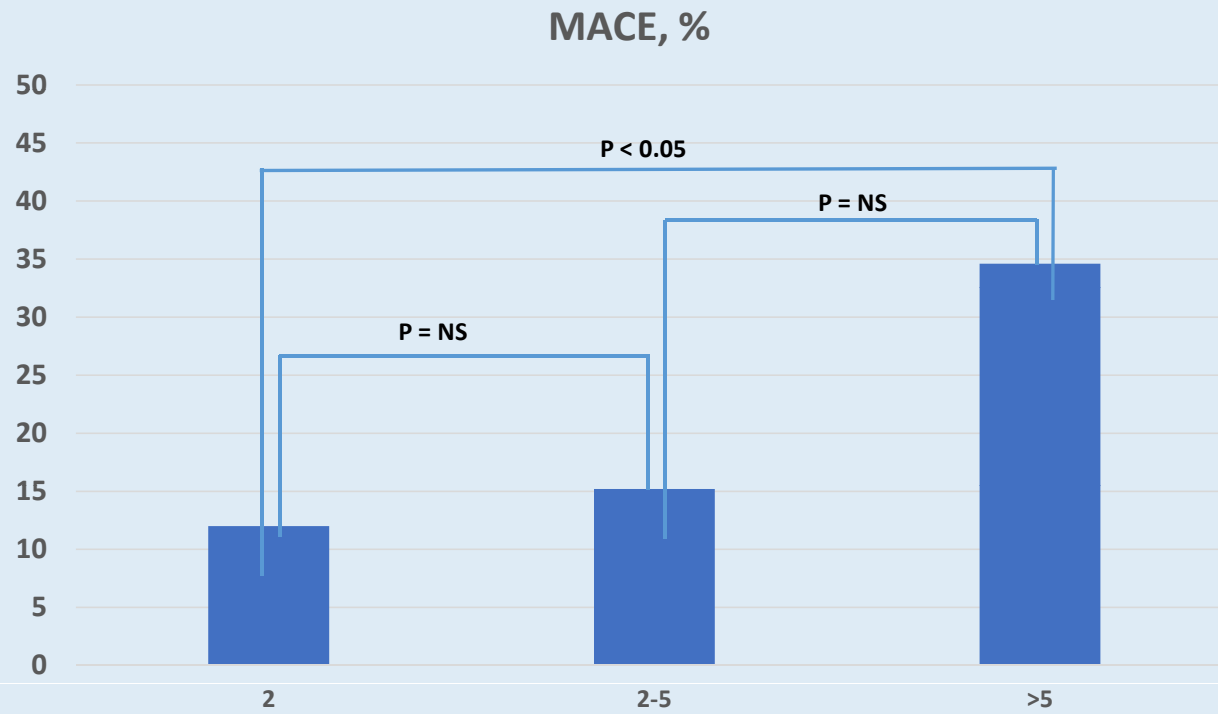
1 ISR in LM

1 Restenosis at LCx ostium after provisional LM-LAD stenting

4 ISR at LCx ostium after stenting in direction of LM-LCx

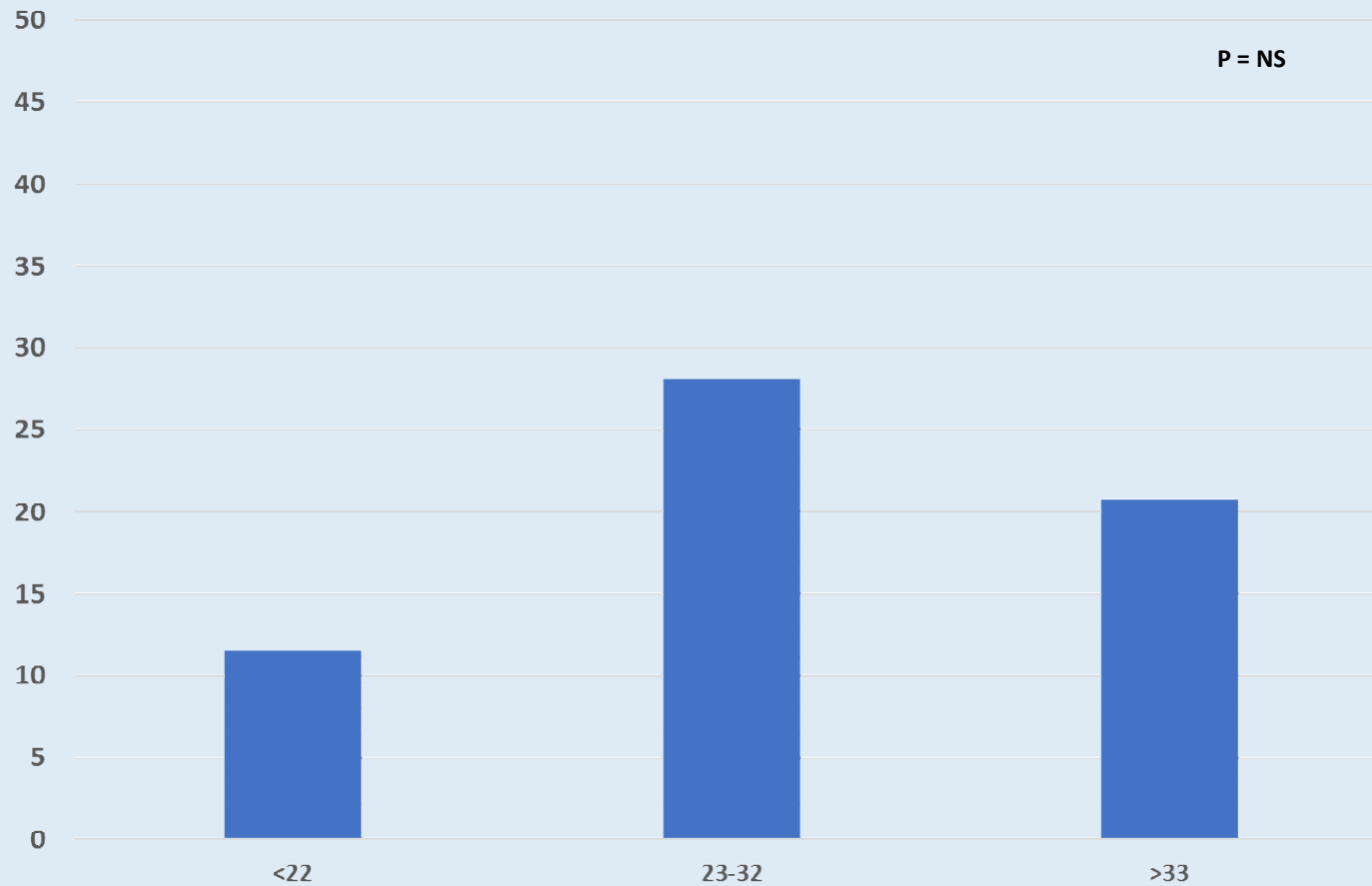


MACE Distribution According to EuroScore



MACE Distribution According to Syntax Score

MACE, %



No statistically significant difference in MACE according to the Syntax score

Conclusions

In this real life, all-comers registry the spectrum of patients differ from what we see in RT.

Pts present with advanced disease and more complex anatomy and the majority of them prefer interventional treatment against surgical revascularization.

PCI of LM is technically feasible, with high success rates even in complex anatomy and acceptable long term results.

