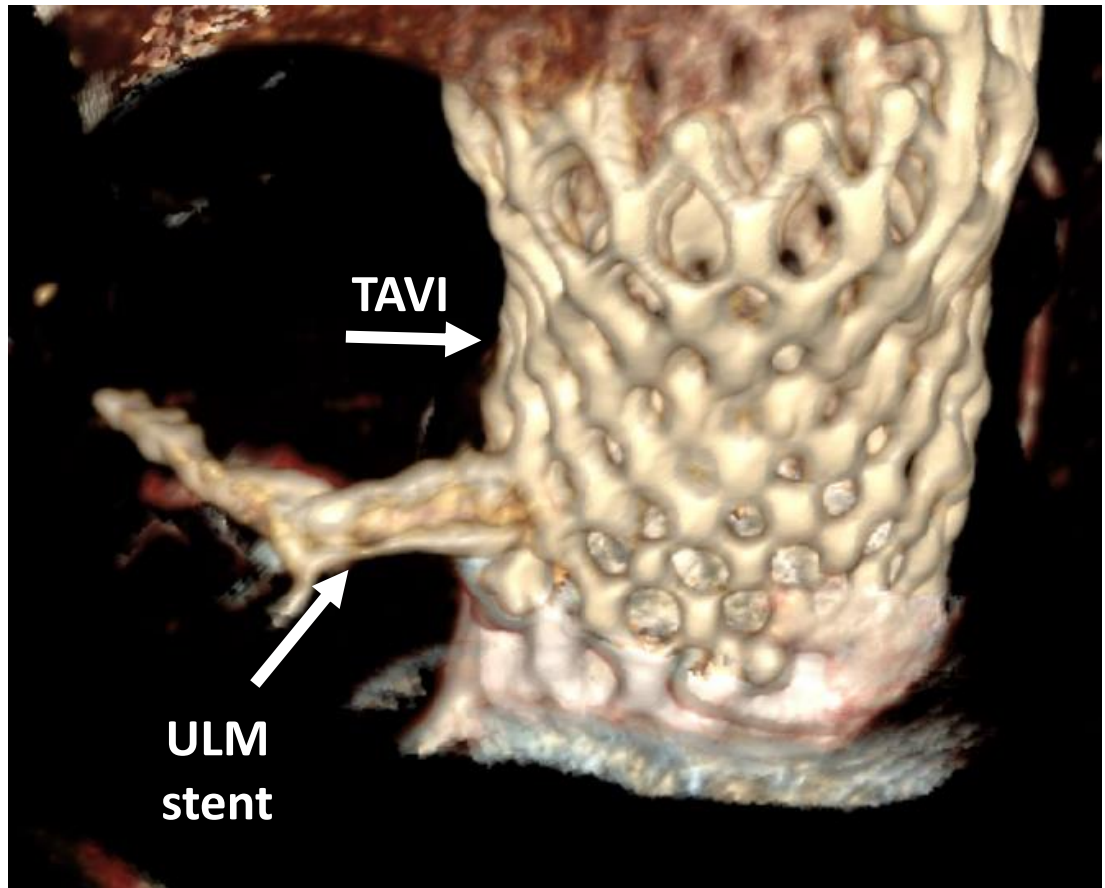


# TAVI IN MEDICOR-SLOVENIA

**Marko Noc  
on behalf of  
Medicor  
TAVI team**

**Medicor symposium  
December 16, 2022  
Portoroz (SLO)**

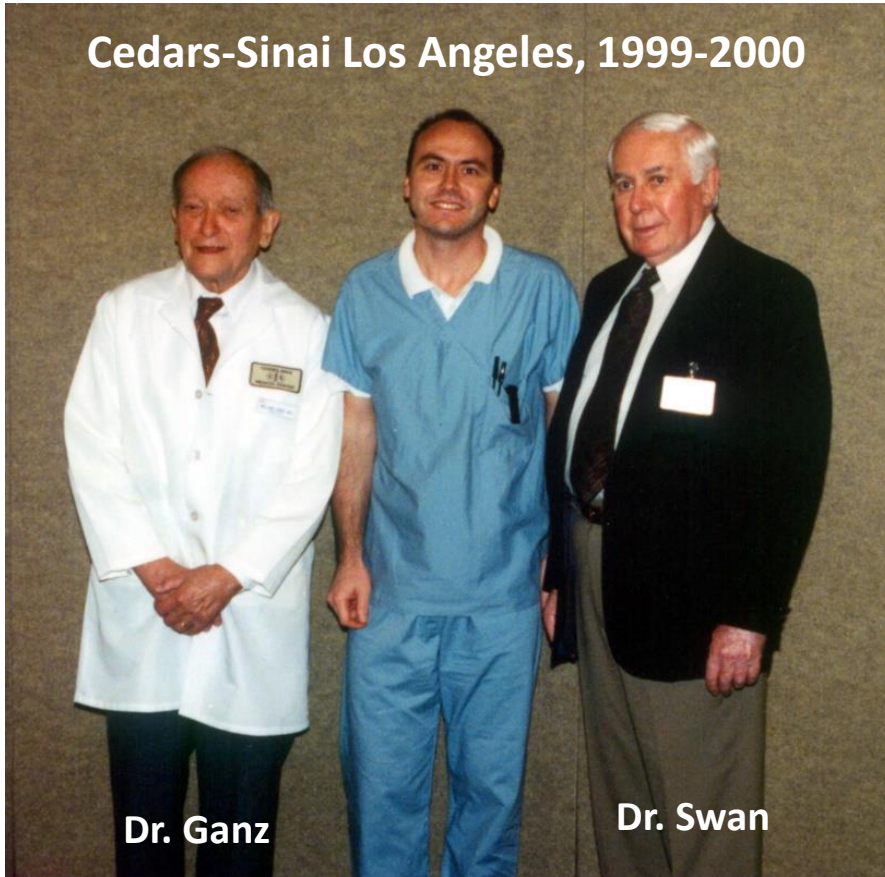
**No conflict of interest**



**CTA post ULM PCI /TAVI (B. Cveticanin, MD)**

# THE STORY OF STRUCTURAL PROGRAM IN MEDICOR...

Cedars-Sinai Los Angeles, 1999-2000



Dr. Ganz

Dr. Swan

When I did my first aortic balloon valvuloplasty, my mentor Franck Litvack mentioned Alain Cribier...

Cribier A, Savin T, Saoudi N, Rocha P, Berland J, Letac B. Percutaneous transluminal valvuloplasty of acquired aortic stenosis in elderly patients: an alternative to valve replacement? Lancet 1986;1(8472):63-7.

# ...AND BECAME A FRIEND WITH SAIBAL...

**October 27, 2006**



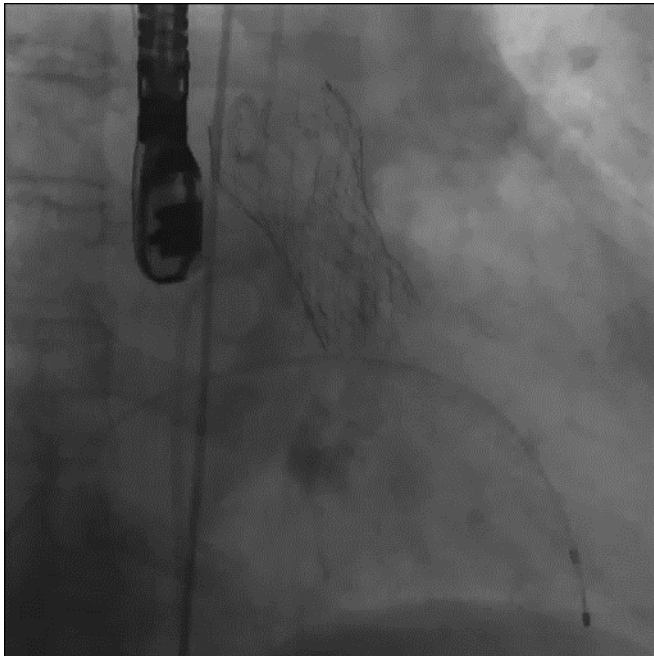
**Saibal arrived with Starflex  
device...and start teaching us  
PFO closure**

<b>PFO closure</b>	<b>330</b>
<b>ASD closure</b>	<b>45</b>
<b>VSD closure</b>	<b>1</b>
<b>LAA closure</b>	<b>33</b>
<b>Ablation/HOCMP</b>	<b>12</b>
<b>Paravalvular leak</b>	<b>1</b>
<b>TAVI</b>	<b>389</b>
-----	
<b>Together</b>	<b>811</b>

# FIRST TAVI IN MEDICOR (December 16, 2016)

Lady, 78 years  
Normal coronaries  
ES II 1.51/STS 2.27

General anesthesia/Intubation/TEE  
BAV 18 mm, Evolut R29, no post BAV



## Echo before TAVI

- Mean gradient 56
- EF 70%

## Echo at discharge:

- Mean gradient 13
- Mild AR
- EF 70%

## Echo after 5 years:

- Mean gradient 14
- No AR
- EF 60%

Doing very well  
also after 6 years

Operators: Oscar Mendiz, Saibal Kar, Marko Noc

# MC MEDICOR “TAVI TEAM”

- **Interventional cardiologists** (A. Pleskovič, M. Noc)
- **Echocardiographers** (N. Černič, D. Petrovič, R. Stopar)
- **TAVI CTA radiologist** (B. Cvetičanin)
- **Cardiac anesthesiology team** (N. Danojevič, V. Tomič)
- **Cardiac surgery** (M. Đorđević, M. Špan, S. Sušak)
- **Scrub nurse/X-ray** (A. Čerpnjak, T. Godeša, R. Brečko)
- **Cardiologists/Nurses in the department**
- **Registry: M. Rojko**

**Prof. dr. Metka Zorc - The “Alpha and Omega” of Medicor**

**Oscar Mendiz, Buenos Aires**



**+**

**Flavio Ribichini, Verona**



**ALWAYS READY TO HELP US...**



SAVR  
+  
TAVI

99

124

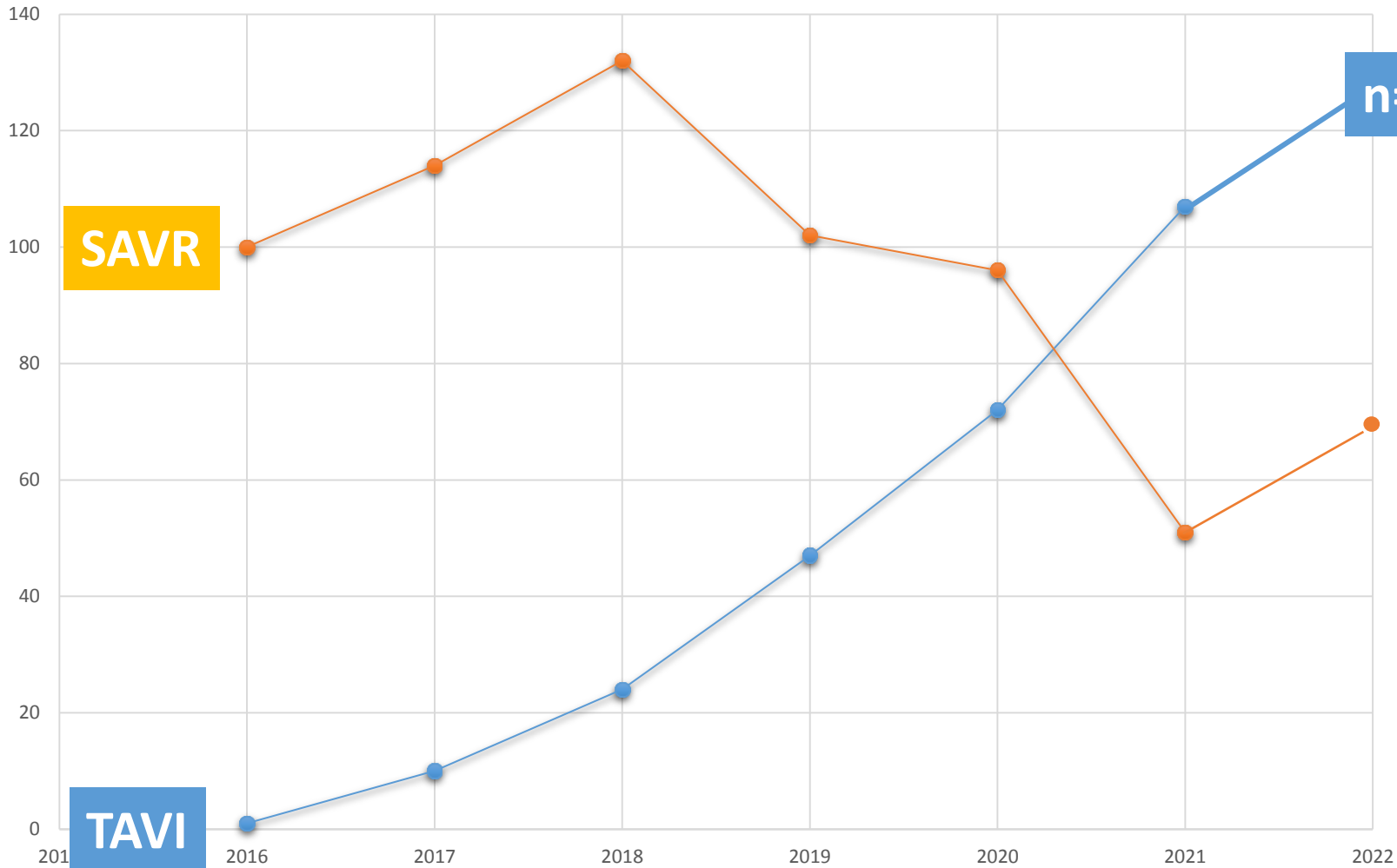
154

149

166

169

194



SAVR

TAVI

n=389

MC Medicor-unpublished

# TAVI PATIENTS IN MEDICOR (n=374)

Age, years	80 <sub>±</sub> 6 (60-95)
Men, n (%)	183 (49%)
LVEF, %	57 <sub>±</sub> 11 (22-80)
PAP, mm Hg (if increased)	37 <sub>±</sub> 12 (17-70)
Post PCI/CABG	119 (32%)

Logistic Euroscore	17.2 <sub>±</sub> 13.2 (1.7-80.4)
Euroscore II	4.1 <sub>±</sub> 4.2 (0.7-50.1)
STS score	2.9 <sub>±</sub> 2.1 (0.4-16.0)

Max gradient, mm Hg	75 <sub>±</sub> 17 (33-128)
Mean gradient, mm Hg	47 <sub>±</sub> 12 (18-84)
AVA, cm <sup>2</sup>	0.8 <sub>±</sub> 0.2 (0.4-1.2)
Bicuspid valve	14 (3.7%)
Surgical bioprosthesis	14 (3.7%)



## PROCEDURAL FEATURES

<b>Conscious sedation</b>	<b>332 (89%)</b>
<b>Femoral-percutaneous</b>	<b>371 (99.2%)</b>
<b>Subclavian cut down</b>	<b>2 (0.5%)</b>
<b>Femoral cut down</b>	<b>1 (0.3%)</b>
<b>Predilatation</b>	<b>167 (45%)</b>
<b>Valve implantation</b>	<b>371 (99.5%)</b>
<b>Evolut /Sapien 3</b>	<b>327 (88%)/45 (12%)</b>
<b>Postdilatation</b>	<b>69 (18%)</b>

<b>Mitroflow or Trifecta</b>	<b>8/14 (57.1%)</b>
<b>Coronary protection/stenting</b>	<b>8/14 (57.1%)</b>
<b>ViV BVF</b>	<b>4/14 (28.6%)</b>
<b>ViV BVR</b>	<b>4/14 (28.6%)</b>

# TAVI IN MEDICOR (n=374)

## Results

Post TAVI mean gradient	10 <sub>±</sub> 4 (3-24)
AR moderate/severe	32 (8.7%)/2 (0.5%)
New permanent pace maker	55 (15%)
TIA/CVI	2 (0.5%)/3 (0.8%)
30-day mortality	6 (1.6%)

## Major complications

LV perforation/tamponade	2 (0.5%)
RV perforation (PM wire)	3 (0.8%)
Annular/aortic rupture/tamponade	2 (0.5%)
Aortic dissection type A	1 (0.3%)
Infrarenal aortic dissection	1 (0.3%)
Iliac artery rupture	1 (0.3%)
Retroperitoneal hematoma	1 (0.3%)
Acute LM obstruction	1 (0.3%)
Anaphylactic shock (Protamin)	1 (0.3%)

## Emergency interventions

Cardiac surgery	3 (0.8%)
Vascular surgery	3 (0.8%)
Pericardiocentesis	3 (2.2%)
ULM stenting	1 (0.3%)

Mortality

30-day  
1.6%

1-year  
8.0%

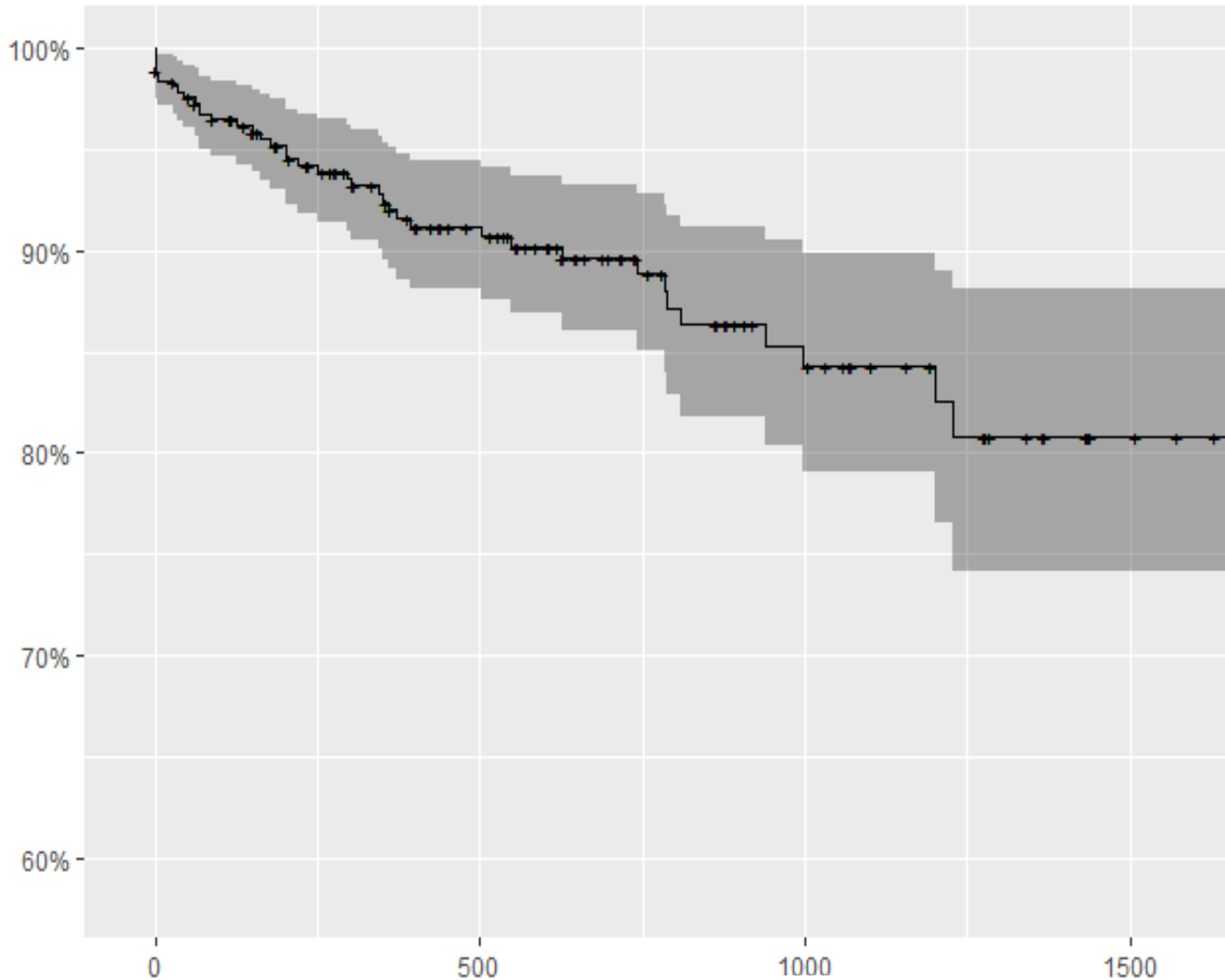
2-year  
10.4%

3-year  
15.8%

4-year  
19.2%

5-year  
27.3%

Survival probability



Days after TAVI

MC Medicor-  
unpublished

# SAVR/TAVI 30-DAY MORTALITY IN MC MEDICOR

Pre TAVI era (2011-2016)	SAVR/Mortality	TAVI/Mortality	All/Mortality
N (%)	435 (2.3%)	-	435 (2.3%)
Mean age, years	71	-	-
Mean Log Euroscore	9.2	-	-

TAVI era (2017-2022)	SAVR/Mortality	TAVI/Mortality	All/Mortality
N (%)	568 (2.1%)	374 (1.6%)	942 (1.9%)
Age, years	71	80 <sub>+6</sub>	
Mean Log Euroscore	7.5	17.2	

- TAVI increased number of treated patients due to by inclusion of older/sicker patients who were previously rejected for SAVR
- This did not increase 30-day mortality at Medicor

# PERMENENT PACE MAKER IMPLANTATION AFTER TAVI IN MEDICOR

Year	TAVR (n)	Alerady on PM	New PPI
2016-17	11	0 (0%)	4 (36.4%)
2018	24	2 (8.3%)	8 (36.4%)
2019	47	3 (6.4%)	8 (18.2%)
2020	71	5 (7.0%)	10 (15.2%)
2021	112	9 (8.0%)	17 (16.5%)
2022	109	8 (7.3%)	9 (8.9%)
All	374	27 (7.2%)	56 (14.9%)

Cusp overlap  
for Evolut  
December 11, 2019

Target 1-2 mm  
instead of 3-5 on  
non-coronary cusp  
in 2022

Increased experience and optimal  
utilization of cusp overlap decreased  
PPI<10% despite 88% use of Evolut

# PERCUTANEOUS FEMORAL CLOSURE

CTA analysis for puncture site

Routine contralateral 0.018 wire

Flouro-guided puncture



Sheathless Evolut valve implantation

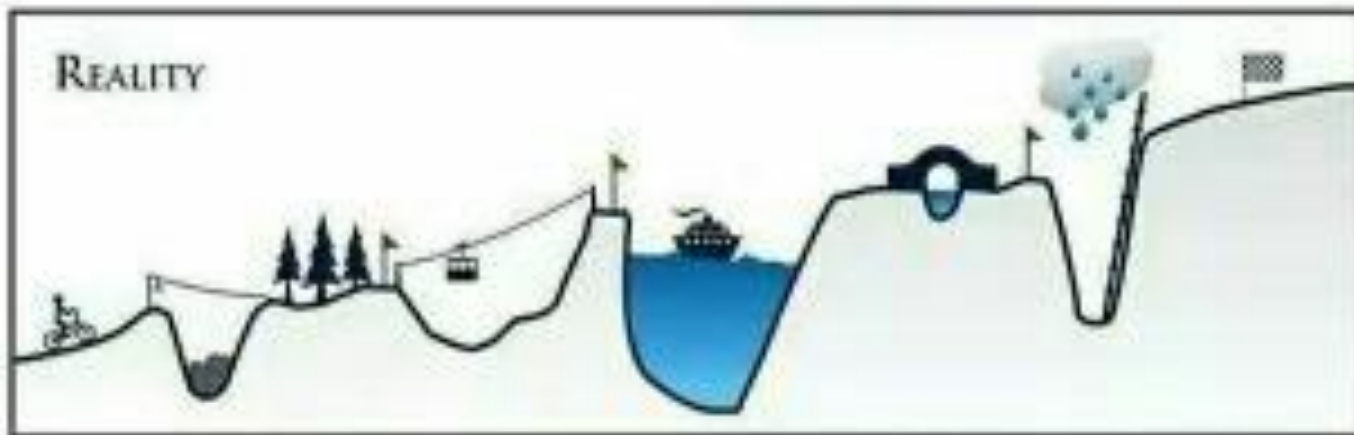
Closure attempt with Prostar (11)  
or two Proglides (359)  
n=366/374 (97.9%)

+ Proglide	11 (3.0%)
+ Angioseal	30 (8.2%)
+ Balloon	22 (6.0%)
+ Stent	4 (1.1%)

Failed-  
emergency  
vascular surgery  
(n=3)

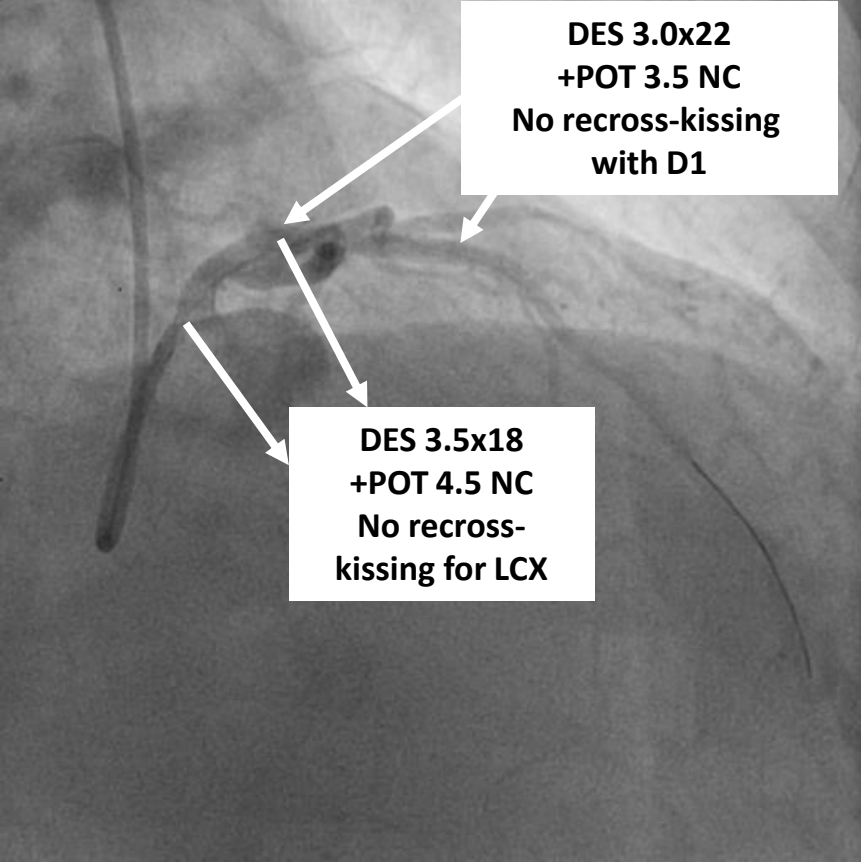
Successful closure  
No bleeding/stenosis  
n=363 (99.2%)

# PLAN AND REALITY IN INTERVENTIONAL CARDIOLOGY...



**A 81-year old man with significant ULM-LAD stenosis and aortic stenosis presenting in 2017...**

## 1. PCI ULM-LAD

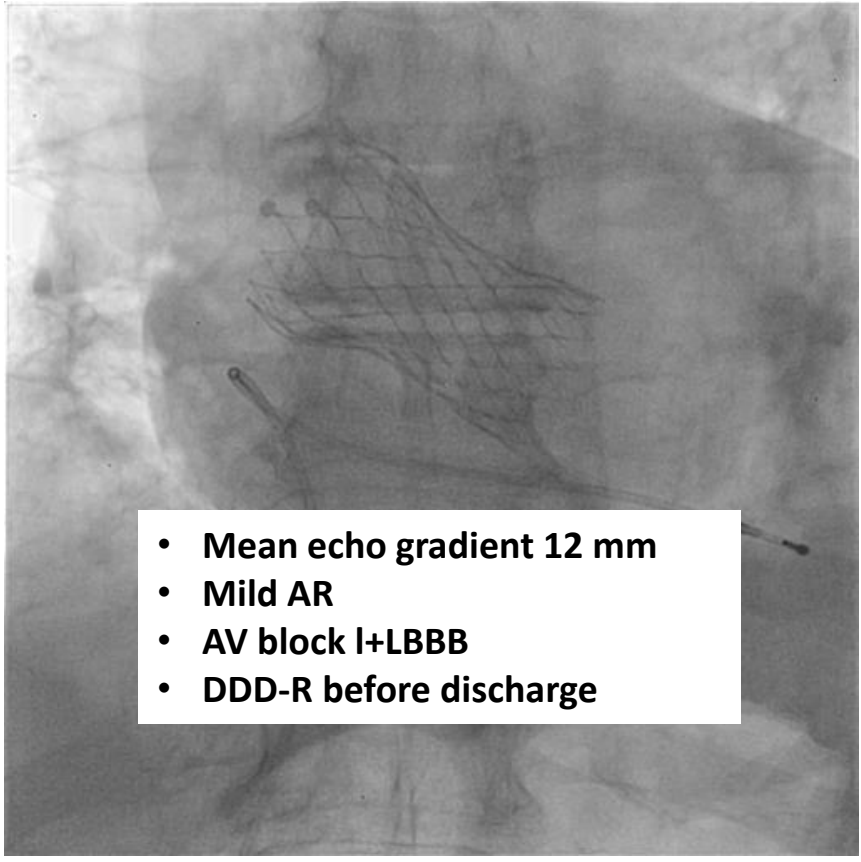


DES 3.0x22  
+POT 3.5 NC  
No recross-kissing  
with D1

DES 3.5x18  
+POT 4.5 NC  
No recross-  
kissing for LCX



## 2. TAVI (Evolut R 29)

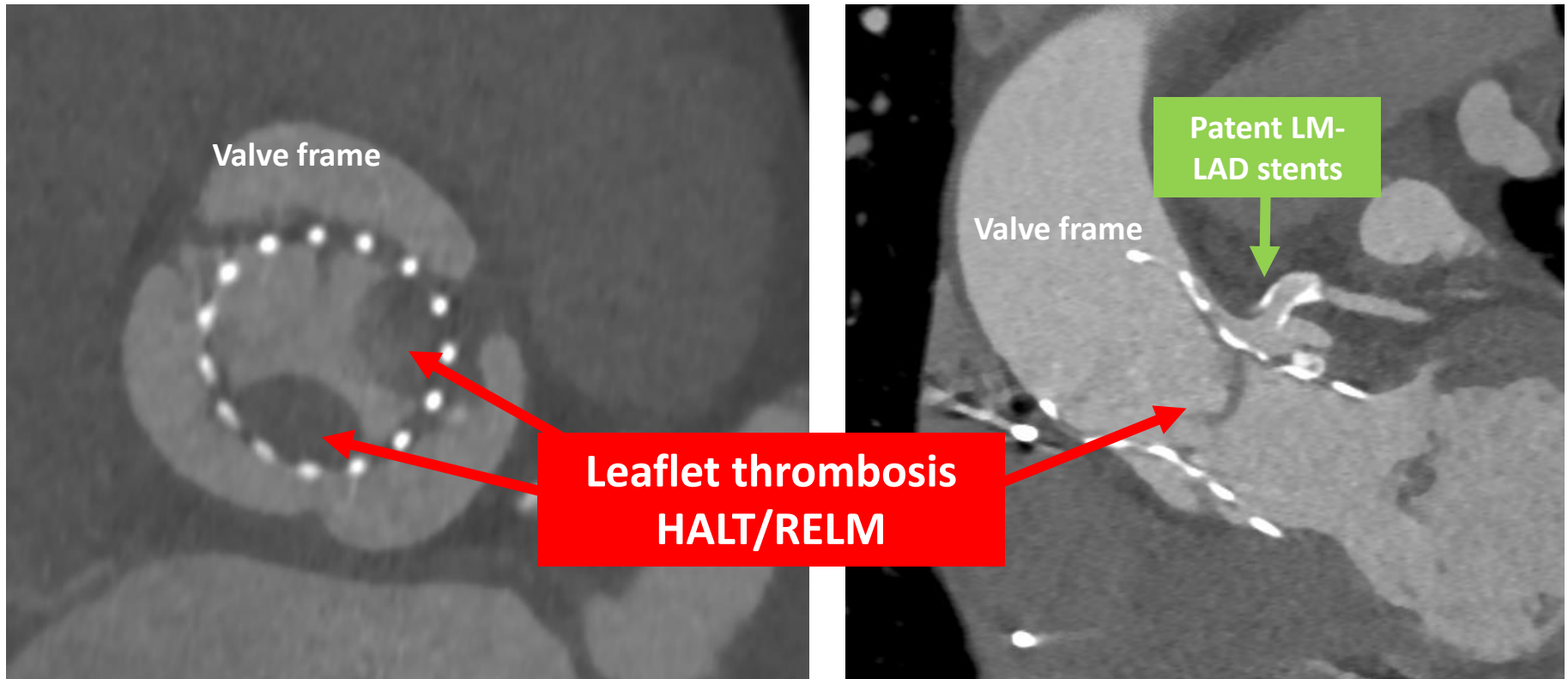
- 
- Mean echo gradient 12 mm
  - Mild AR
  - AV block I+LBBB
  - DDD-R before discharge

**ASA and Clopidogrel  
according to PCI (6months)**



## AFTER 4 MONTHS...

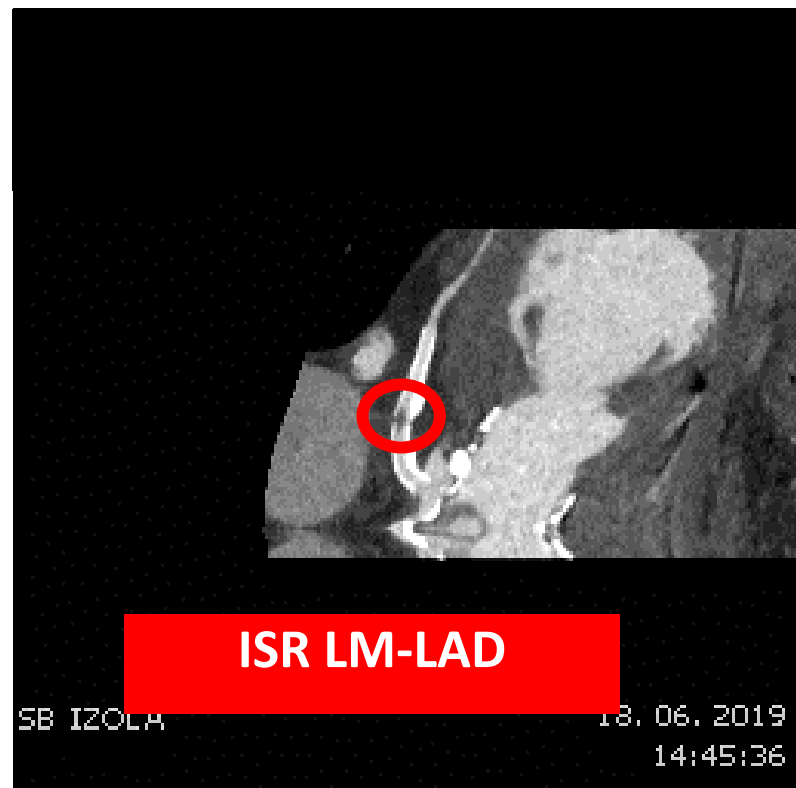
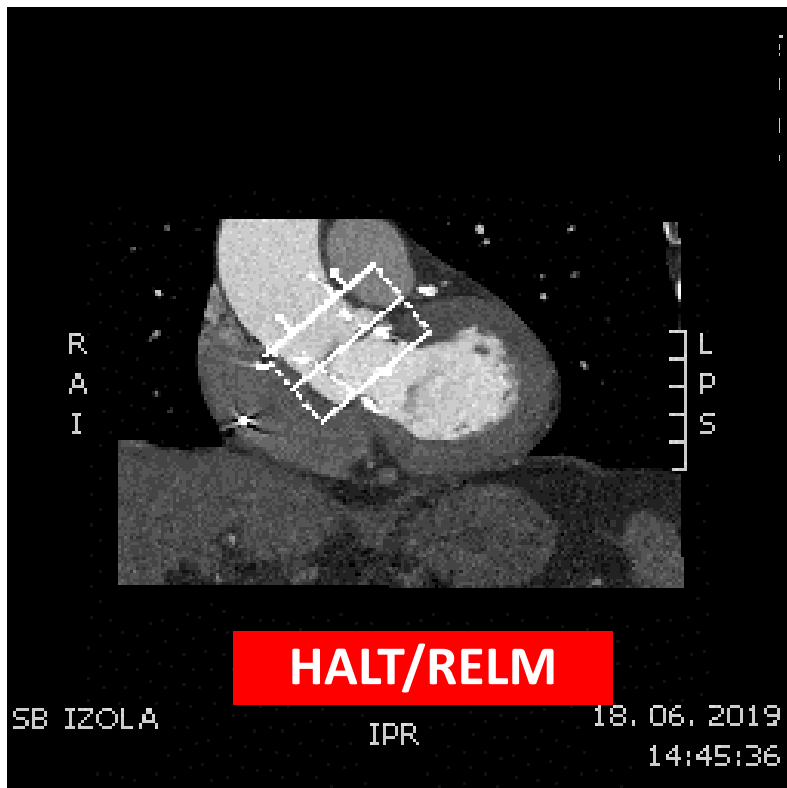
- Partial recurrence of symptoms (still on ASA/Clopidogrel)
- Mean echo gradient increased from 12 to 23 mm Hg



- Clopidogrel maintained, ASA replaced with cumadine (INR 2-3), PPI

# WHAT HAPPENED?

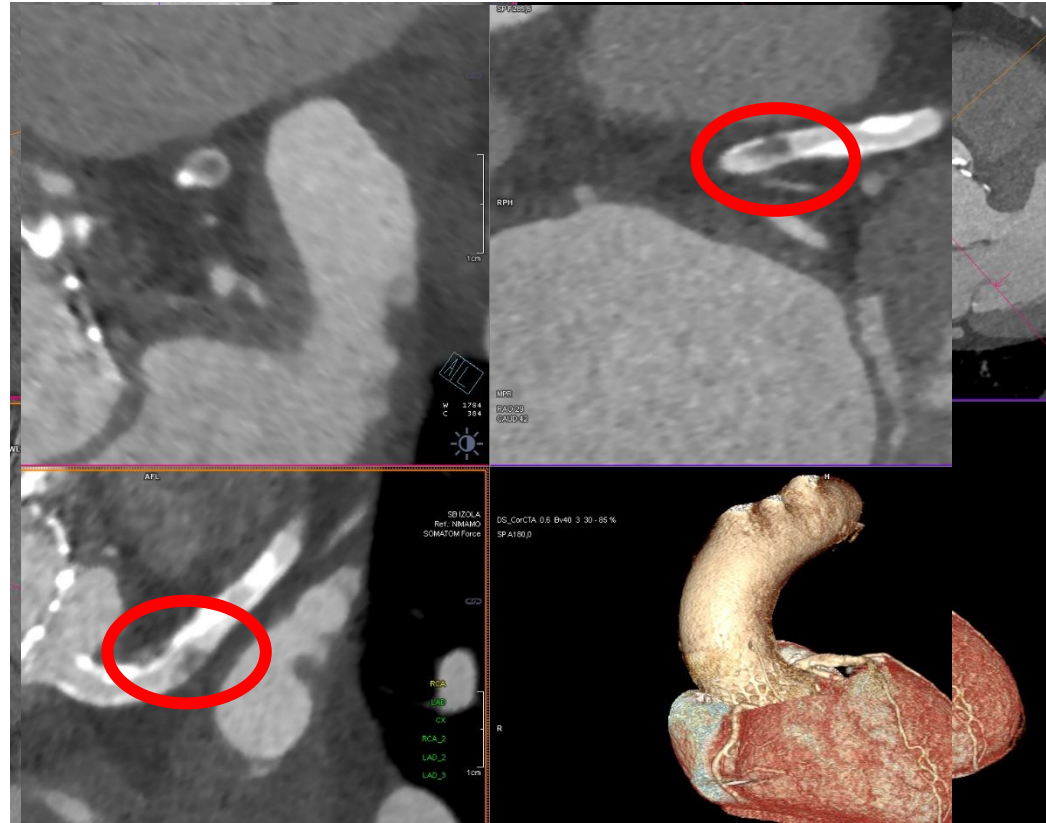
- Symptoms gradually resolved
- Mean echo gradient down to 9 mm after 3 months and to 12 mm after 7 months
- Cumadine replaced with ASA at 7 months-again on ASA/Clopidogrel
- **After 7 months, dispnoea and exertional angina, gradient 20 mm Hg....**



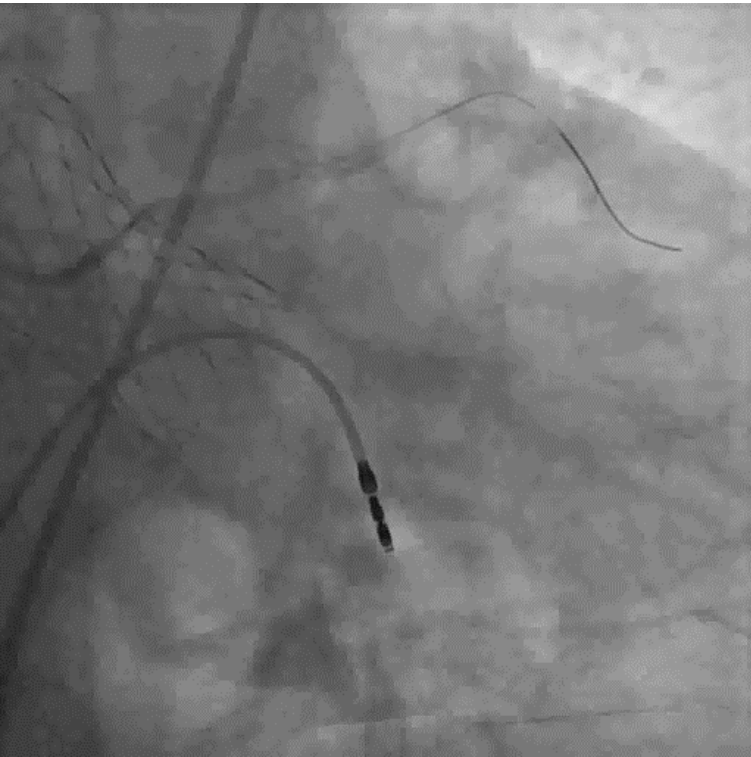
## TREATMENT PLAN:

Resolve HALT/RELM before PCI to avoid thrombus dislodgment/embolization by guide manipulation

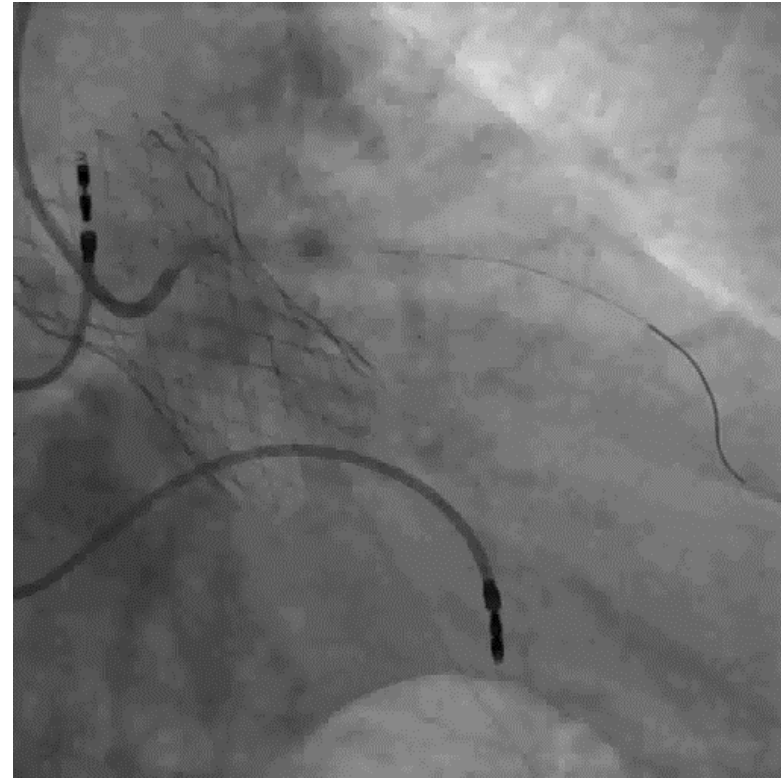
- ASA replaced with cumadine  
clopidogrel kept (again)
- Mean echo gradient again  
decreased to 10 mm Hg after 3  
months
- CT confirmed HALT/RELM  
resolution
- Progress of LM-LAD ISR



# CORONARY ANGIOGRAPHY AND PCI ...



**DES 3.5x14**  
**Postdilatation**  
**3.5 NC (24atm)**



- **ASA, Clopidogrel and cumadine for 1 month with PPI protection**
- **Clopidogrel and cumadine lifelong with PPI protection**

**HOW IS HE DOING NOW?**