### Predilatation of the side branch in patients with true bifurcation lesions ({1,1,1}, {0,1,1}, {101}) during provisional T stenting .

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### **Potential conflicts of interest**

#### Speaker's name: Manuel Pan

#### **☑** I have the following potential conflicts of interest to report:

Minor lectures fees: ABBOTT VASCULAR





### BACKGROUND

- Simple approach or provisional side branch stenting is the current preferred strategy for the PCI of bifurcation lesions.
- The procedure could be no so "simple". After main vessel stent implantation, compromise of the side branch ostium or even complete occlusion of this vessel may occur. Predilatation of the SB could improve the patency and the TIMI flow of this vessel after main vessel stent implantation.
- Based on observational studies, some experts have recommended avoiding side branch pre-dilation.



THERE ARE NOT RANDOMIZED TRIALS to determine the efficacy of side branch balloon predilatation before provisional T stenting.

#### PCR 2013

## **STUDY DESIGN**

372 patients with bifurcation lesions ({1,1,1}, {0,1,1}, {1,0,1}) treated with provisional stenting - DES (Feb2009-Nov2012)

1:1 Randomization after angiography & baseline side branch wiring





AIMS: To assess the efficacy of side branch balloon pre-dilation before provisional T stenting.

#### • Primary end point:

- TIMI flow at side branch after main vessel stent implantation.

#### Secondary end points:

- Need for side branch post-dilation.
- Time of re-wiring.
- Number of used wires.
- % of stenosis at the side branch.
- Levels of marker of damage after the procedure.
- Related cardiac events at 1month and 6 months.



# **INCLUSION CRITERIA**

- Patients with stable angina or acute coronary syndromes or inducible ischemia, who had a lesion located in a major bifurcation point, regardless of morphology and angulation.
- Main vessel ≥ 2.5 mm diameter.
- SB ≥ 2.25 mm diameter.
- Significant stenosis at SB ostium by visual inspection (Medina {1,1,1}, {0,1,1}, {1,0,1}).
- Any stenosis length at main vessel and a stenosis length ≤ 5 mm at the SB.

# **EXCLUSION CRITERIA**

- Patients with contraindications to one-year antiplatelet therapy.
- Cardiogenic shock.
- Coexisting severe comorbidities.
- Impossibility to place a wire at the SB before MV stent implantation.

#### PCR 2013

### **BASELINE DATA**

2013			
	Side- Branch predilation (n=187)	Side-Branch no predilation (n=185)	р
CLINICAL			
Age (years)	65±10	63±11	0.07
Male (%)	144 (77%)	140 (76%)	0.80
Smoking	35 (19%)	46 (25%)	0.17
Cholesterol	127 (68%)	120 (65%)	0.58
Hypertension	126 (67%)	119 (64%)	0.58
Diabetes	71 (38%)	67 (36%)	0.74
ACS	149 (80%)	142 (77%)	0.53
ANGIOGRAPHIC			
- Main vessel			
Size (mm)	3±0.36	3±0.41	0.66
Minimal lumen	$0.65 \pm 0.35$	$0.70 \pm 0.46$	0.21
% stenosis	78±12	76±15	0.27
Lesion length	17.8±10	17.4±8	0.64

	Side- Branch predilation (n=187)	Side-Branch no predilation (n=185)	р
- Side branch			
Size (mm)	$2.4 \pm 0.35$	$2.4 \pm 0.33$	0.58
Minimal lumen	$0.82 \pm 0.43$	$0.81 \pm 0.53$	0.80
% stenosis	65±18	67±17	0.35
Lesion length	8.1±0.3	8.1±0.3	0.80
BIFURCATION LOCATION			0.87
LM	19 (10%)	16 (9%)	
LAD	114 (61%)	114 (62%)	
Сх	32 (17%)	36 (19%)	
RCA	22 (12%)	19 (10%)	
MEDINA CLASSIFICATION			0.19
1,1,1	167 (89%)	155 (84%)	
1,0,1	6 (3%)	13 (7%)	
0,1,1	14 (8%)	17 (9%)	

PCR 2013

## PROCEDURAL DATA

	Side-Branch predilation (n=187)	Side-Branch no predilation (n=185)	р
MAIN VESSEL			
Stent diameter (mm)	3±0.3	3±0.3	0.63
Stent length (mm)	21±8	21±9	0.83
Stent atmospheres	16±1.6	$16 \pm 1.8$	0.32
Everolimus stent	123 (65%)	126 (68%)	0.66
IVUS	46 (25%)	44 (24%)	0.90
SIDE BRANCH	· ·		
Need for balloon post- dilation	127 (68%)	185 (100%)	0.001
Balloon diameter	<b>2.4±0.3</b>	2.4±0.3	0.53
Stenting	7 (4%)	6 (3%)	1
GENERAL ASPECTS	· ·		
Another site PCI	134 (72%)	121 (65%)	0.22
IIa/IIIb inhibitors	10 (5%)	13 (7%)	0.52
Femoral angioseal	182 (99%)	185 (100%)	0.06

### RESULTS (I): Primary end point (TIMI flow at side branch after main vessel stent)





### **RESULTS (II): Secondary end points**

	Side-Branch predilation (n=187)	Side-Branch no predilation (n=185)	р
Impossibility to re-cross (wire/balloon)	2 (1.5%) (n=127)	2 (1%)	0.62
Time of re-wiring (minutes)	2.2±6 (n=127)	3.2±7	0.20
Number of wires used in the re-wiring	1.1±0.4 (n=127)	1.3±0.6	0.023
Final % stenosis at side branch	16±17	15±16	0.59
Troponin post- procedure (IU/L)	2.9±7.2	2.8±6.2	0.87



### **RESULTS (III): Major clinical events**

	Side-Branch predilation (n=187)	Side-Branch no predilation (n=185)	p
1 MONTH			
- NSTEMI	3 (1.6%)	7 (3.7%)	0.23
- Death *	1 (0.5)	0	1
1-6 MONTHS	_		
- AMI	0	1 (0.5%)	1
- TLR	5 (2.7%)	5 (2.7%)	1
- Death *	1 (0.5%)	3 (1.6%)	0.37



### CONCLUSIONS

Predilatation of the side branch in patients with true bifurcation lesions ({1,1,1}, {0,1,1}, {101}) during provisional T stenting is a useful maneuver:

- Improves the TIMI flow in this vessel after main vessel stent implantation.
- Does not penalise the re-wiring of the side branch through the metallic structure of the main vessel stent (in contradiction with previous observational studies).
- In the 33% of the patients a good final result may be obtained without post-dilatation (sequential or kissing) after the implantation of the stent across the bifurcation.

