

Small Vessel Stenting

Controversy Between DES and BMS

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Small Vessel Stenting

- ♥ It is estimated that about 30% of all PCIs are performed in vessels with a reference diameter ≤ 2.5 mm
- ♥ However, the best interventional approach for patients with lesions located in small vessels has yet to be determined

POBA Vs Stenting

	Stent	Balloon
ISAR-SMART	171	163
SEOUL Study	55	56
SISA	145	144
BESMART	197	198
COAST (HC)	197	195
SISCA	72	69
Total	837	825
Restenosis	233 (27.8%)	289 (35.0%)*

***P<=0.002**

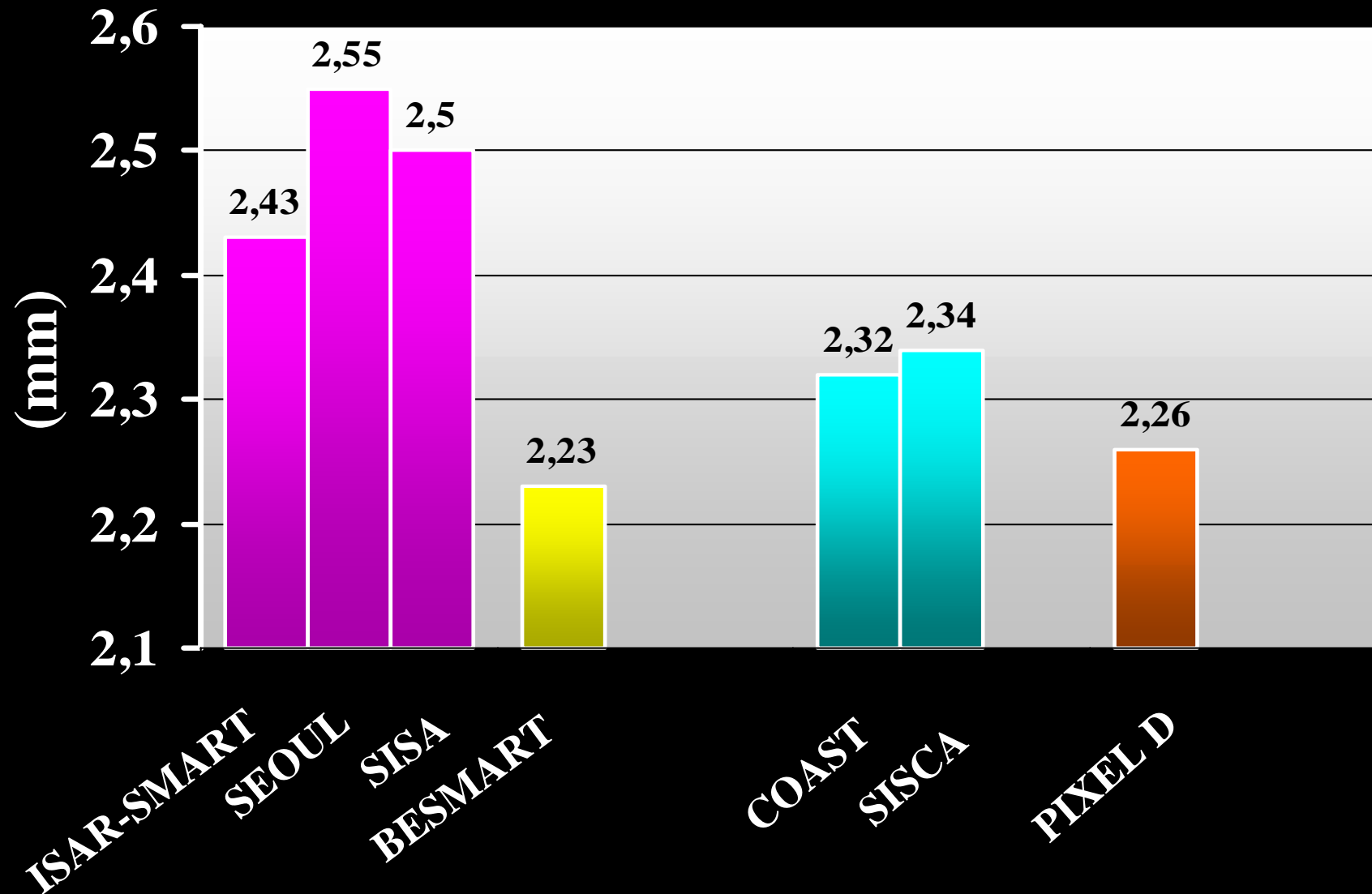
Small Vessels

POBA Vs Stenting: *Confounding factors*

- ♥ Different definitions of small vessel
- ♥ Small number of patients
- ♥ Prior to modern antiplatelet therapy
- ♥ High rate of cross-over
- ♥ Stent pre-mounted and hand-crimped
- ♥ Bare metal stents or coated stents
- ♥ Not dedicated stent available

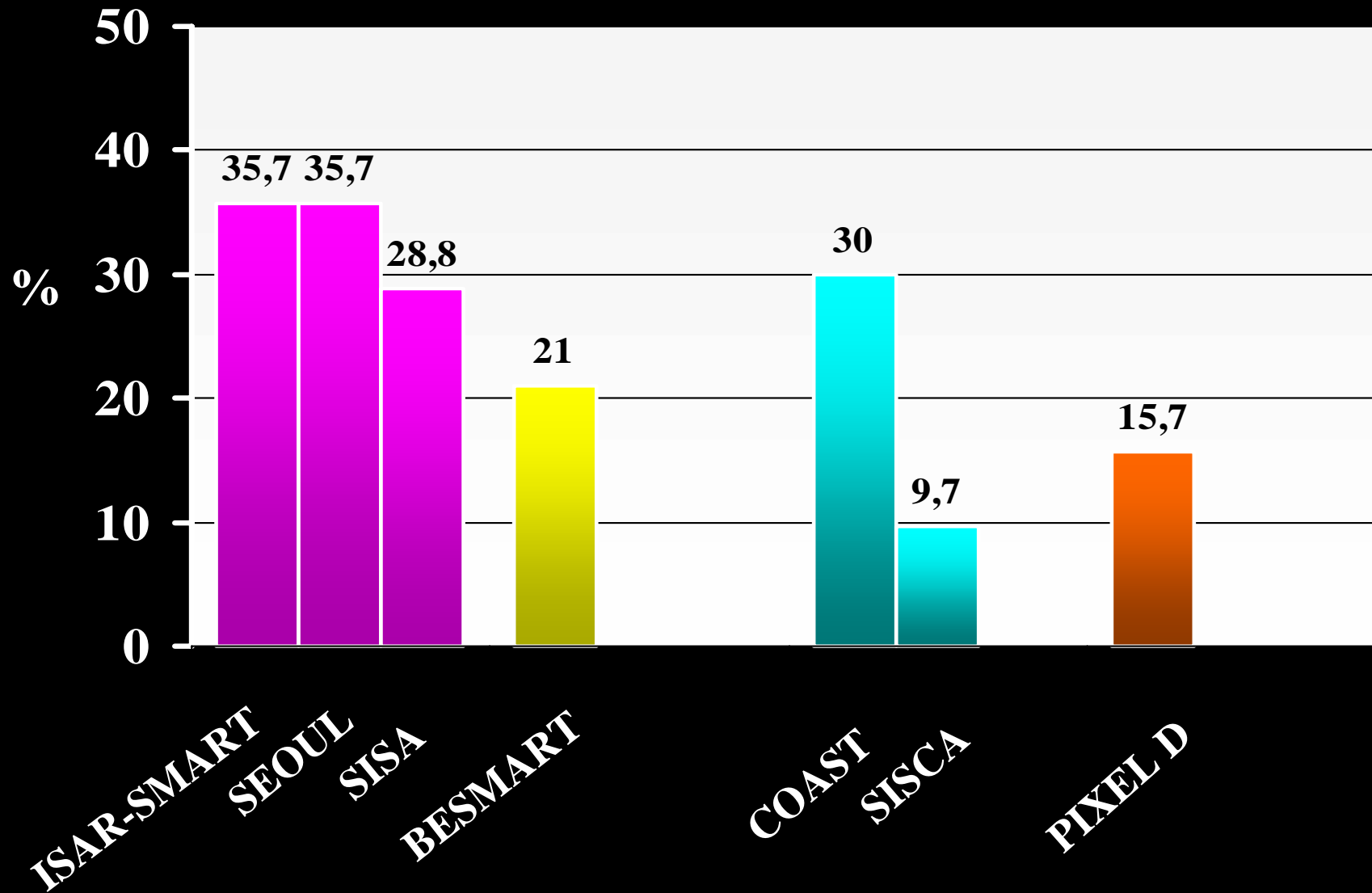
Small Vessel Stenting

Reference Vessel Diameter



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Incidence of Restenosis



Small Vessel Stenting

**Small vessels require customised
small vessel stents**

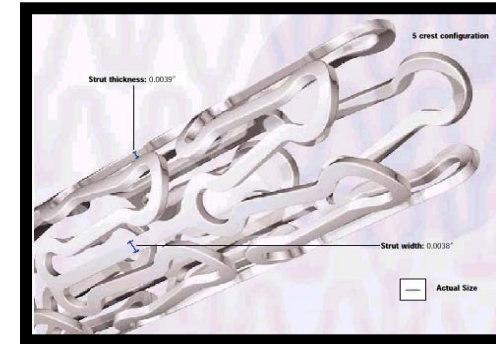
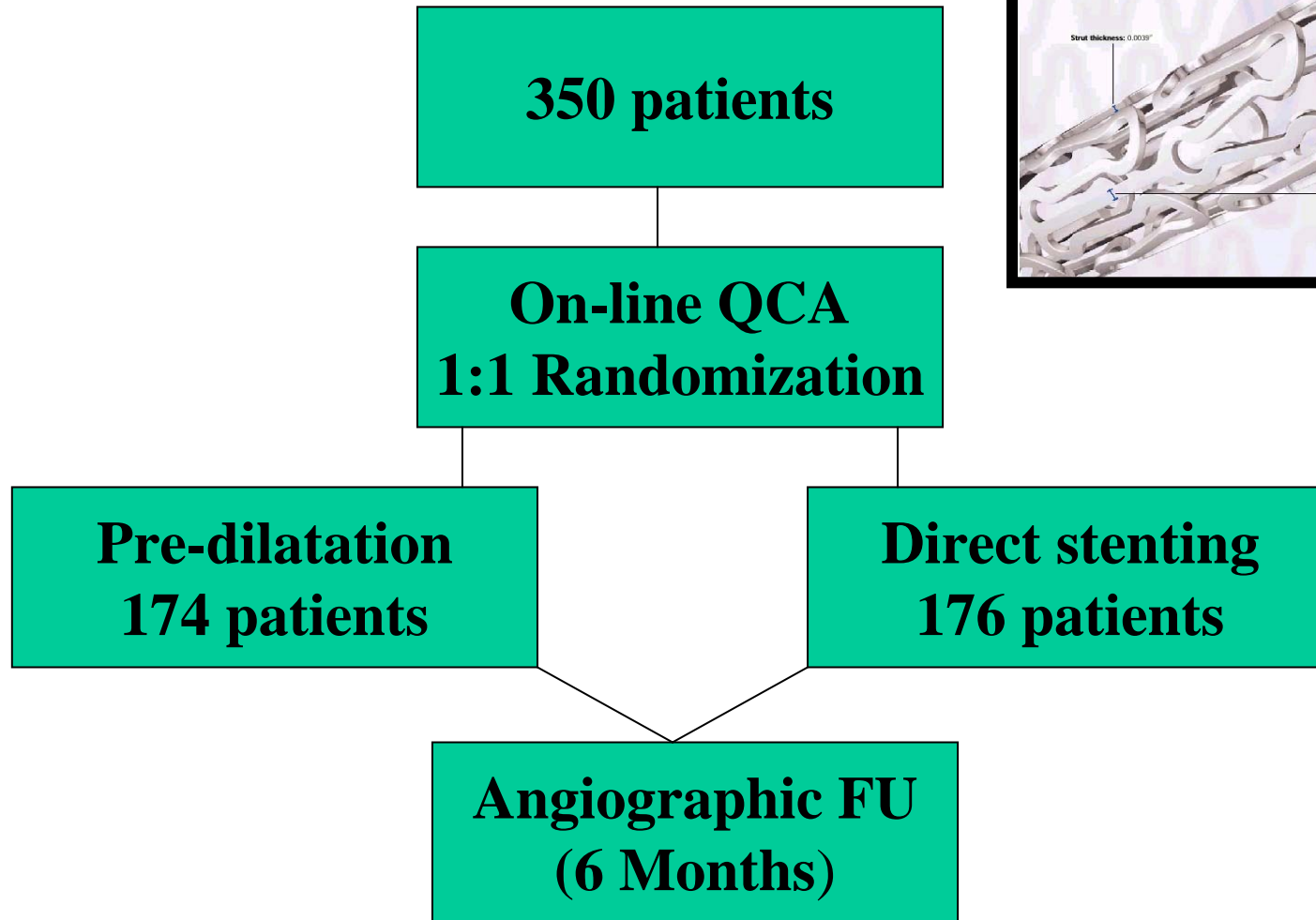
To improve clinical outcome:

- ♥ Thinner struts
- ♥ Less metal
- ♥ Lower M:A ratio
- ♥ Improved conformability

To improve performance:

- ♥ Improved deliverability

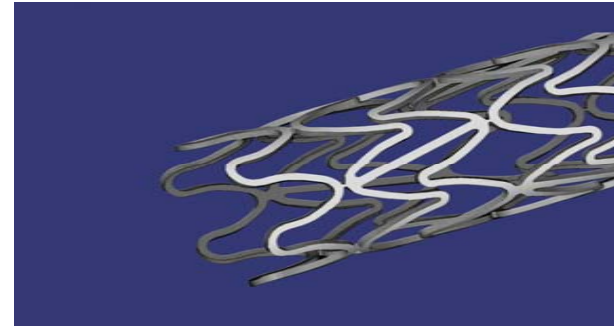
European Pixel Study



European Pixel Study

	Pre-dilation	Direct stenting
Patients (n°)	174	176
Diabetes mellitus	23%	28%
Vessel size (mm)	2.25±0.32	2.26±0.34
Lesion length (mm)	10.8±4.7	10.8±4.7
Restenosis	25.0%	15.7%
MACE at 6 Mo	9.1%	6.2%
TLR at 6 Mo	4.3%	3.4%

TSUNAMI SV Registry



♥ **7 Centers in Europe and ASIA**

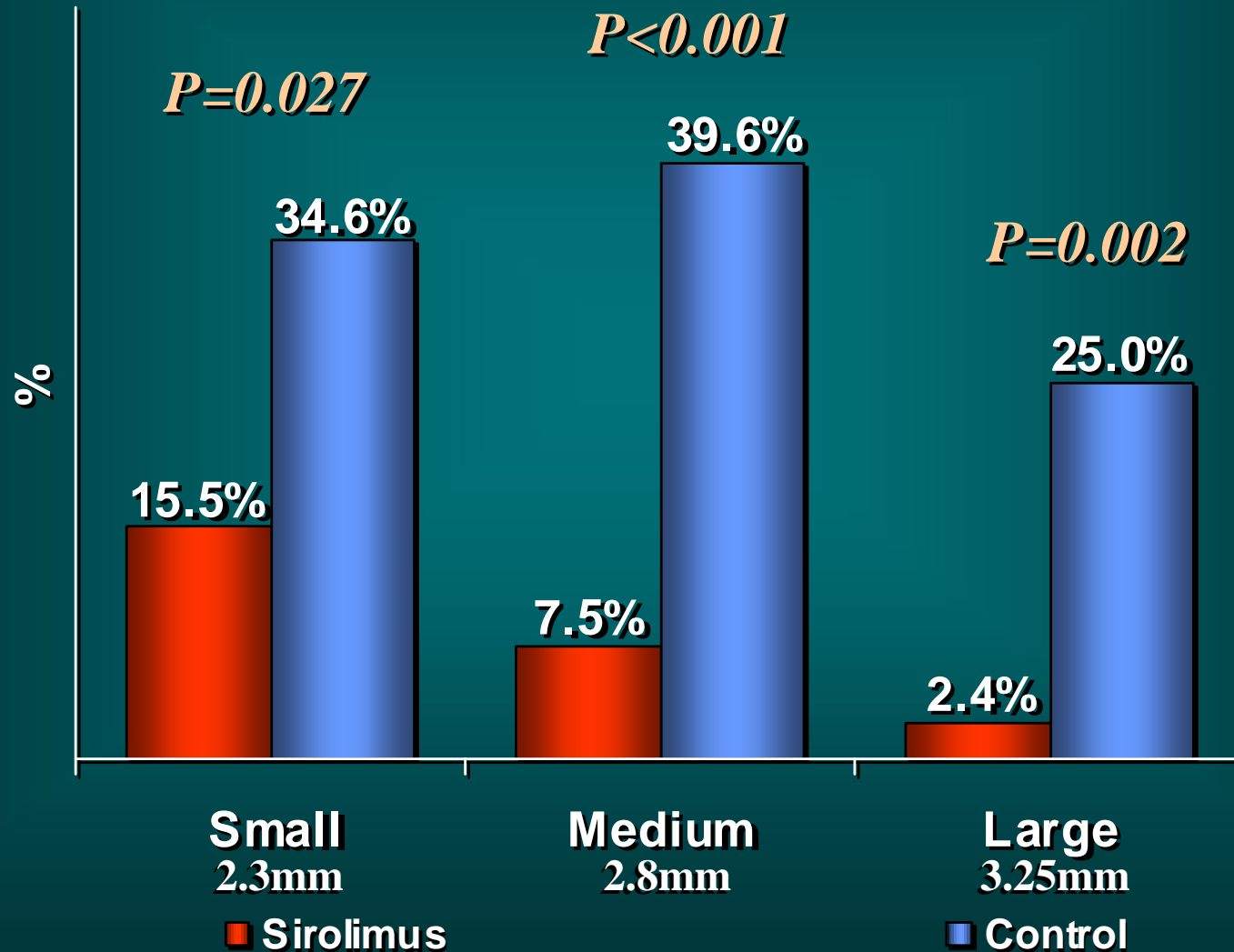
♥ **End Point: MACE at 30 and 180 days**

TSUNAMI SV Registry

Patients (n°)	103
Lesions (n°)	122
Diabetes mellitus	42%
Vessel size (mm)	2.01±0.32
Lesion length (mm)	10.1±5.1
MACE in-Hospital	0
MACE at 1 Mo	0
MACE at 6 Mo	5.8%
TLR at 6 Mo	4.8%

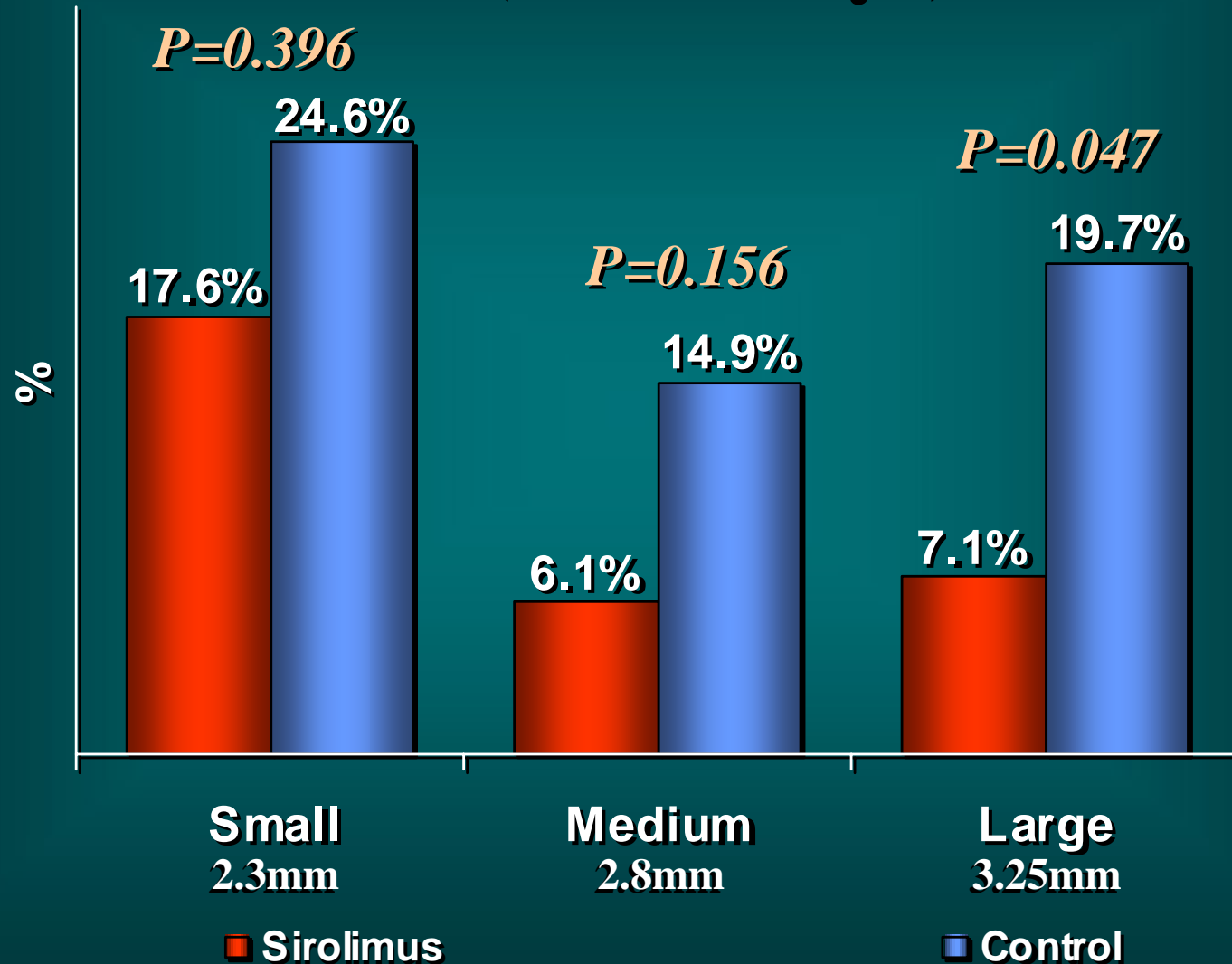
SIRIUS - Vessel Size Sub-Analysis

In-Segment Restenosis



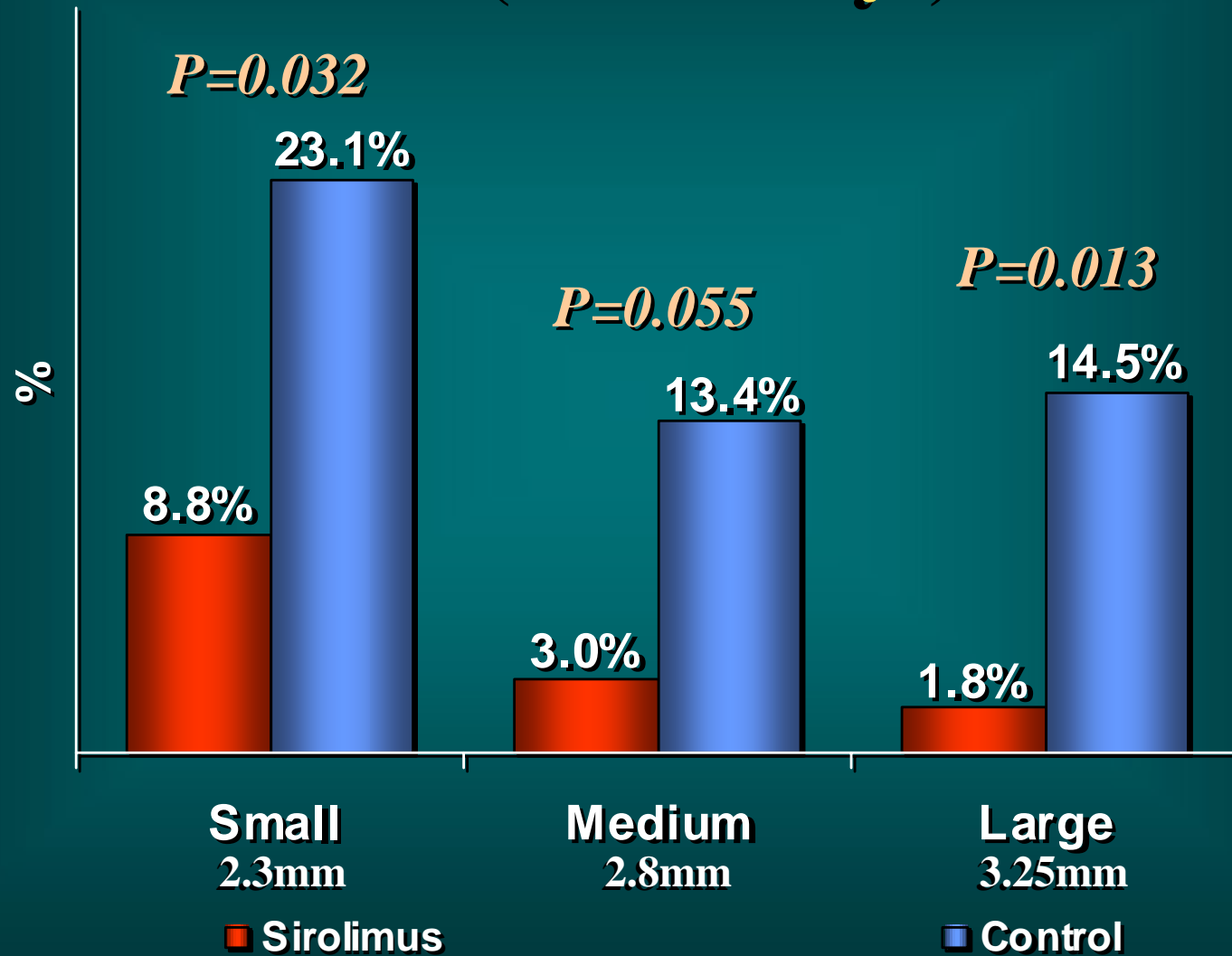
SIRIUS - Vessel Size Sub-Analysis

TVF (to 270 days)

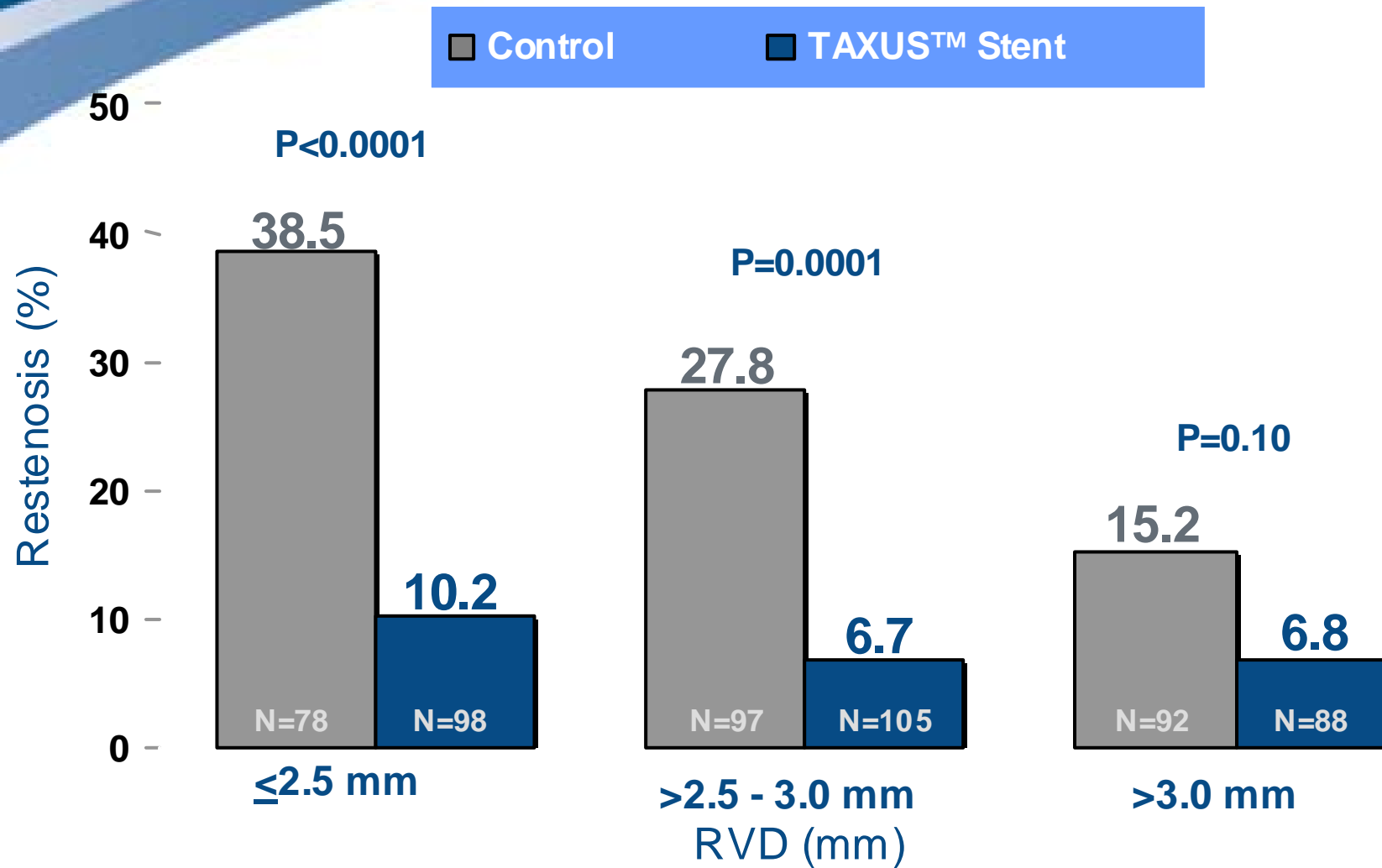


SIRIUS - Vessel Size Sub-Analysis

TLR (to 270 days)



TAXUS IV - Restenosis



RESEARCH Registry

Patients (n°)	91
Lesions (n°)	112
Diabetes mellitus	26%
RVD (mm)	1.88±0.34
Lesion length (mm)	12.3±9.3
Angio at FU	68%
Late loss (mm)	0.07±0.48
Restenosis	10.7%
MACE at 12 Mo	7.7%
TLR at 12 Mo	5.5%

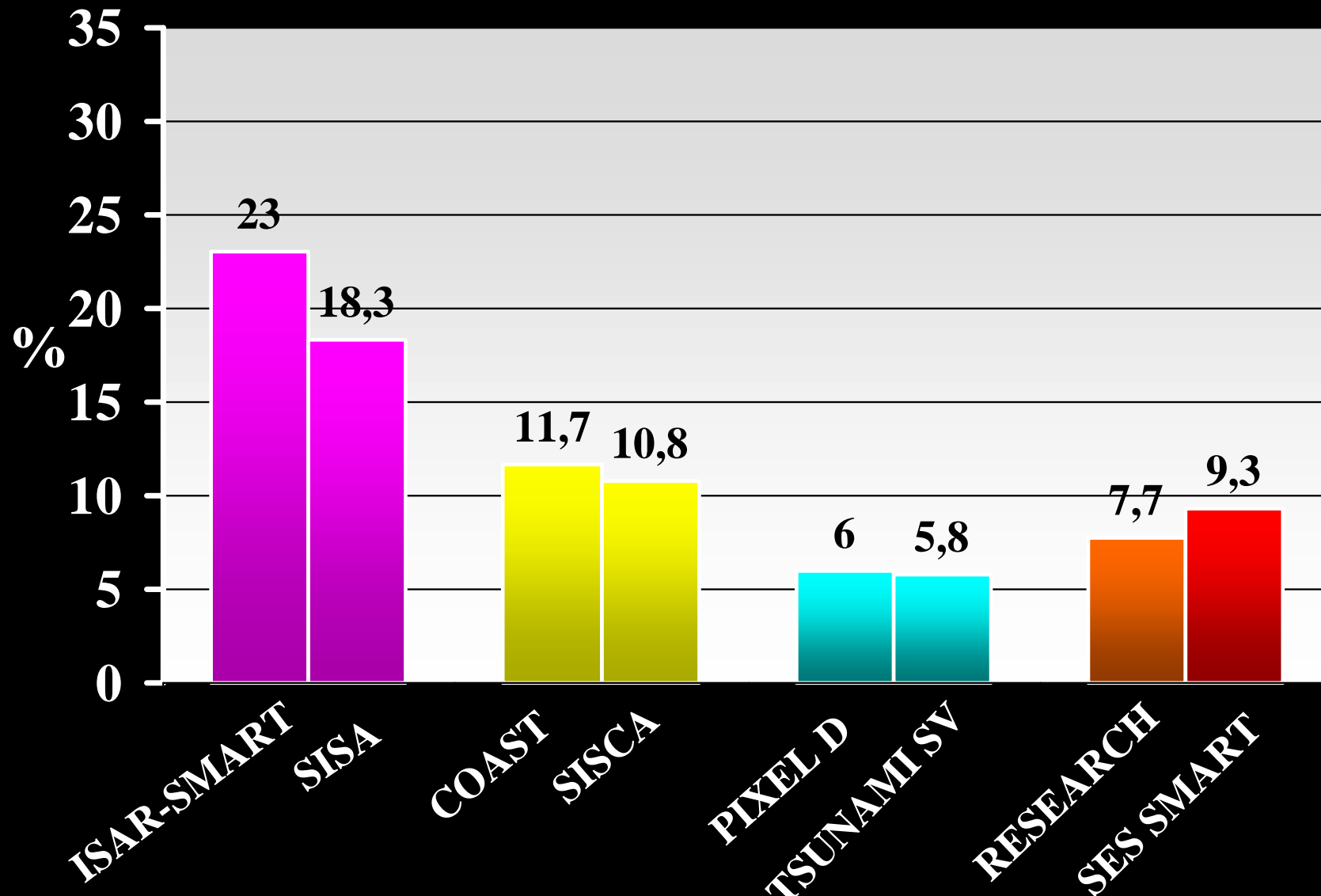
SES SMART Study

	Cypher-Bx	Bx-Sonic
Patients (n°)	129	128
Diabetes mellitus	19%	30%
Vessel size (mm)	2.22	2.17
Lesion length (mm)	13.1	10.7
Restenosis	9.8%	53.1%*
MACE at 8 Mo	9.3%	31.3%*
TLR at 8 Mo	7.0%	21.1%*

***P<0.001**

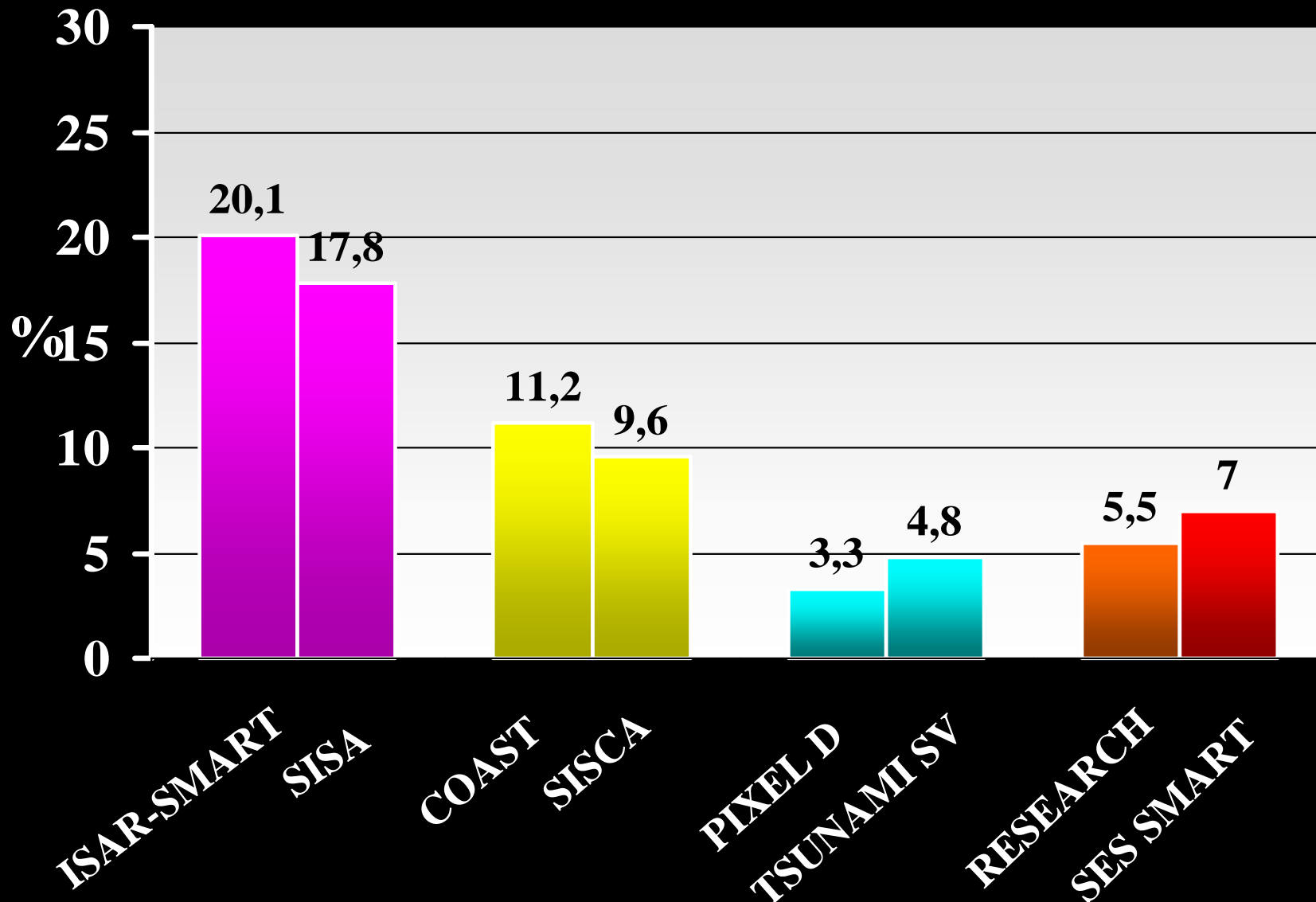
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Incidence of MACE at Follow-Up



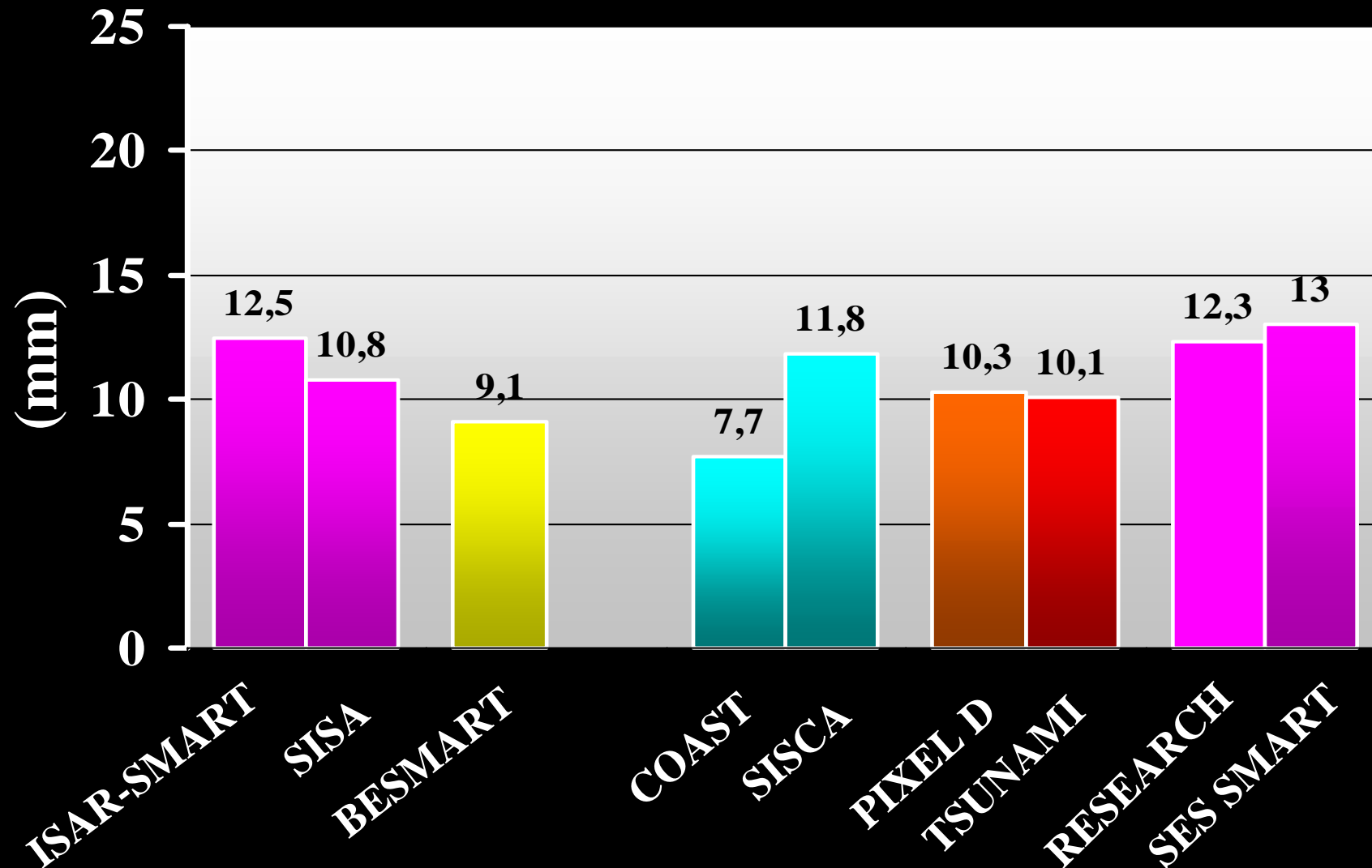
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TVR at Follow-Up



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Mean Lesion Length (mm)



Small Vessel Stenting

- ♥ **Bare metal stents specifically designed for the treatment of focal lesions involving small coronary arteries represent an attractive therapeutic option**
- ♥ **The value of this approach should be tested in a head-to-head comparison with DES**
- ♥ **Diffuse disease in small vessel could represent a future challenging scenario for DES**