


TCTAP 2017

Which Contemporary DES Do You Prefer? And Why?

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Disclosures

I hold patents related to DES technology

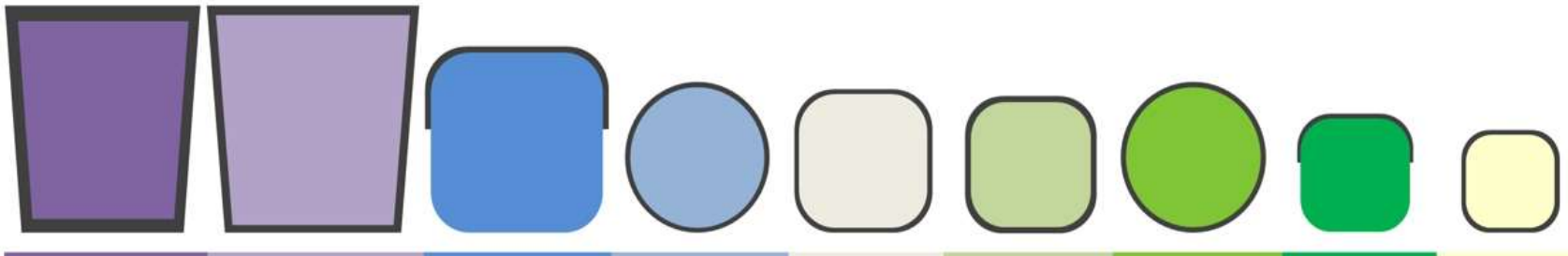
Which DES I prefer?

- **A stent that can easily be placed where needed**
- **A stent supported by evidence for efficacy and safety**
- **An evidence-supported stent that better fits my belief**

A stent that can easily be placed where needed

50 yr old patient, MV disease (diffuse disease of the LAD and RCA, disease of LCx)

A stent that can easily be placed where needed

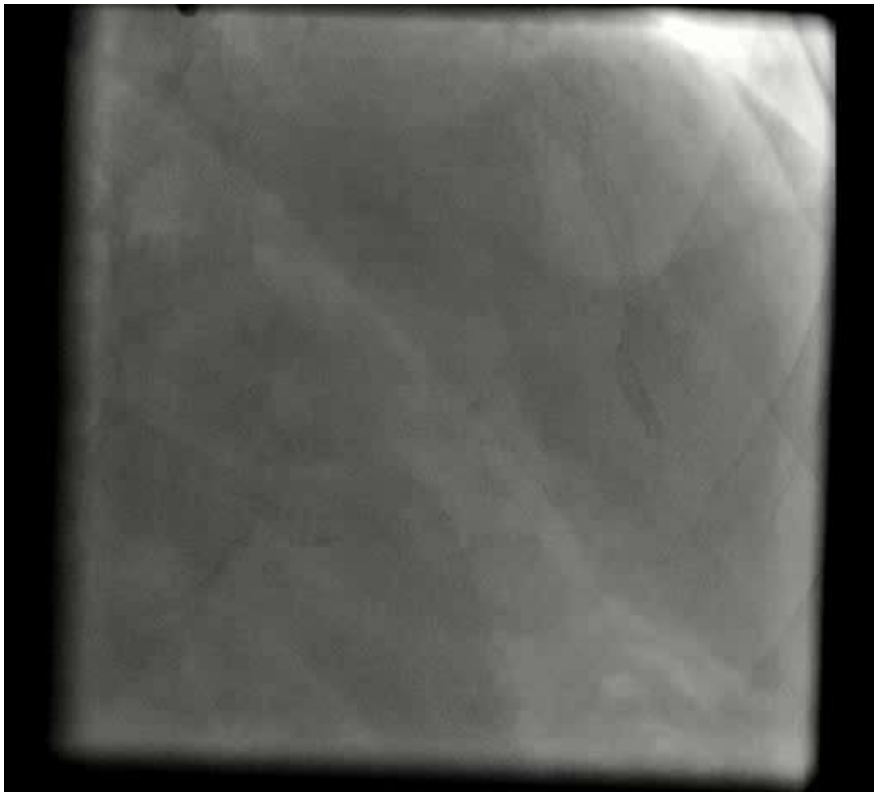


	Taxus	Cypher	BioMatrix Nobori	Endeavor	Yukon PC	Xience Promus	Resolute	Synergy	Orsiro
Platform material	SS	SS	SS	CoCr	SS	CoCr PtCr	CoCr	PtCr	CoCr
Strut thickness (µm)	132	140	120	91	87	81	91	74	60

A stent that can easily be placed where needed

50 yr old patient, MV disease (diffuse disease of the LAD and RCA, disease of LCx)

6 Months after fixing LAD, LCX, RCA: a total of 10 stents



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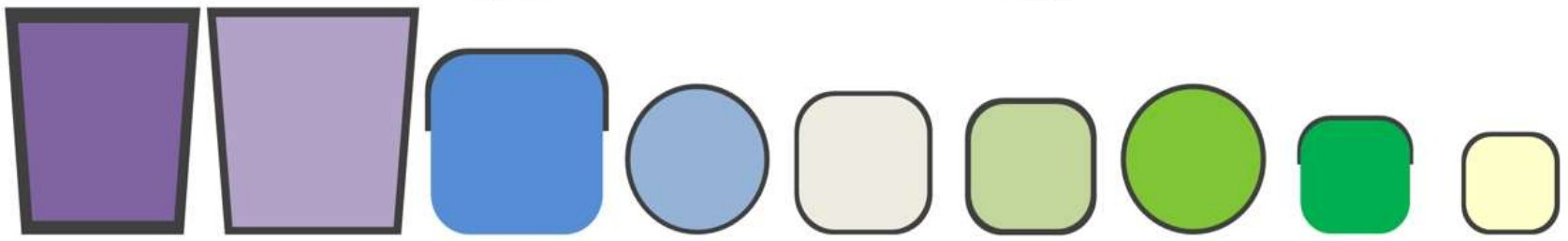
A stent supported by evidence for efficacy and safety



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Platform material	SS	SS	SS	CoCr	SS	CoCr PtCr	CoCr	PtCr	CoCr
Strut thickness (µm)	132	140	120	91	87	81	91	74	60
Polymer type	Durable	Durable	Biodegradable	Durable	Biodegradable	Durable	Durable	Biodegradable	Biodegradable
Polymer material	SIBS	PEVA/PBMA	PDLLA	MPC/LMA/HPMA/ 3-MPMA	PDLLA	PBMA/PVDF-HFP	PBMA/PHMA/ PVP/PVA	PLGA	PLLA
Coating distribution	Circumferential	Circumferential	Abluminal	Circumferential	Circumferential	Circumferential	Circumferential	Abluminal	Circumferential
Polymer thickness (µm)	22	13	10	6	5	8	6	4	7
Additional coating	-	-	-	-	-	-	-	-	Silicon carbide
Drug released	Paclitaxel	Sirolimus	Biolimus	Zotarolimus	Sirolimus	Everolimus	Zotarolimus	Everolimus	Sirolimus

2° generation DES
Clinical Evidence vs. 1° generation DES

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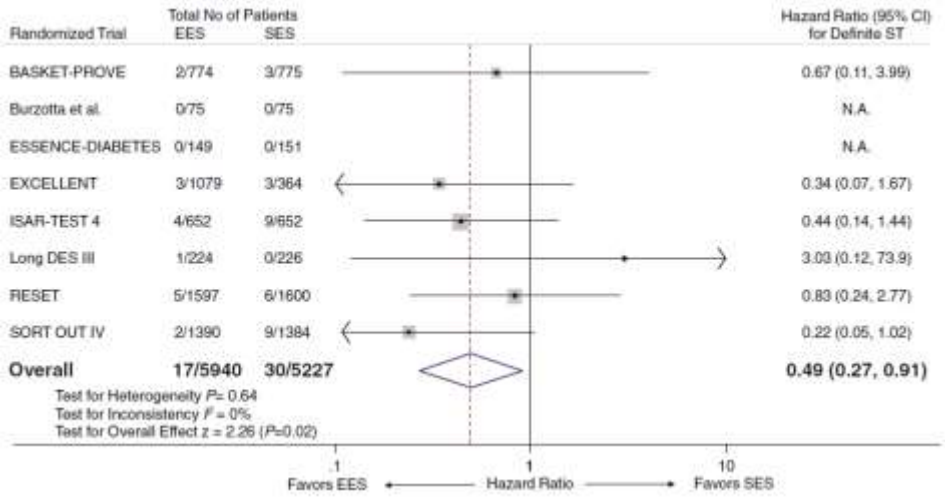
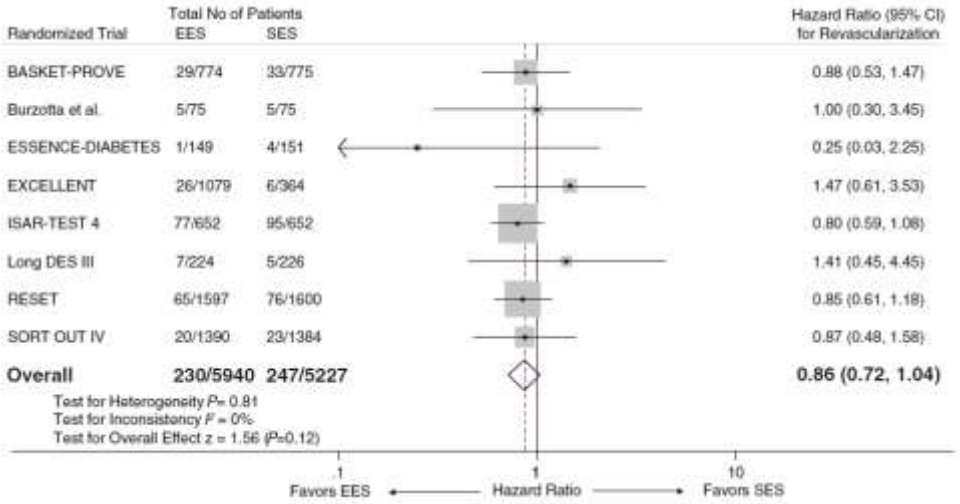
RCTs of Xience vs. Cypher
Definite ST

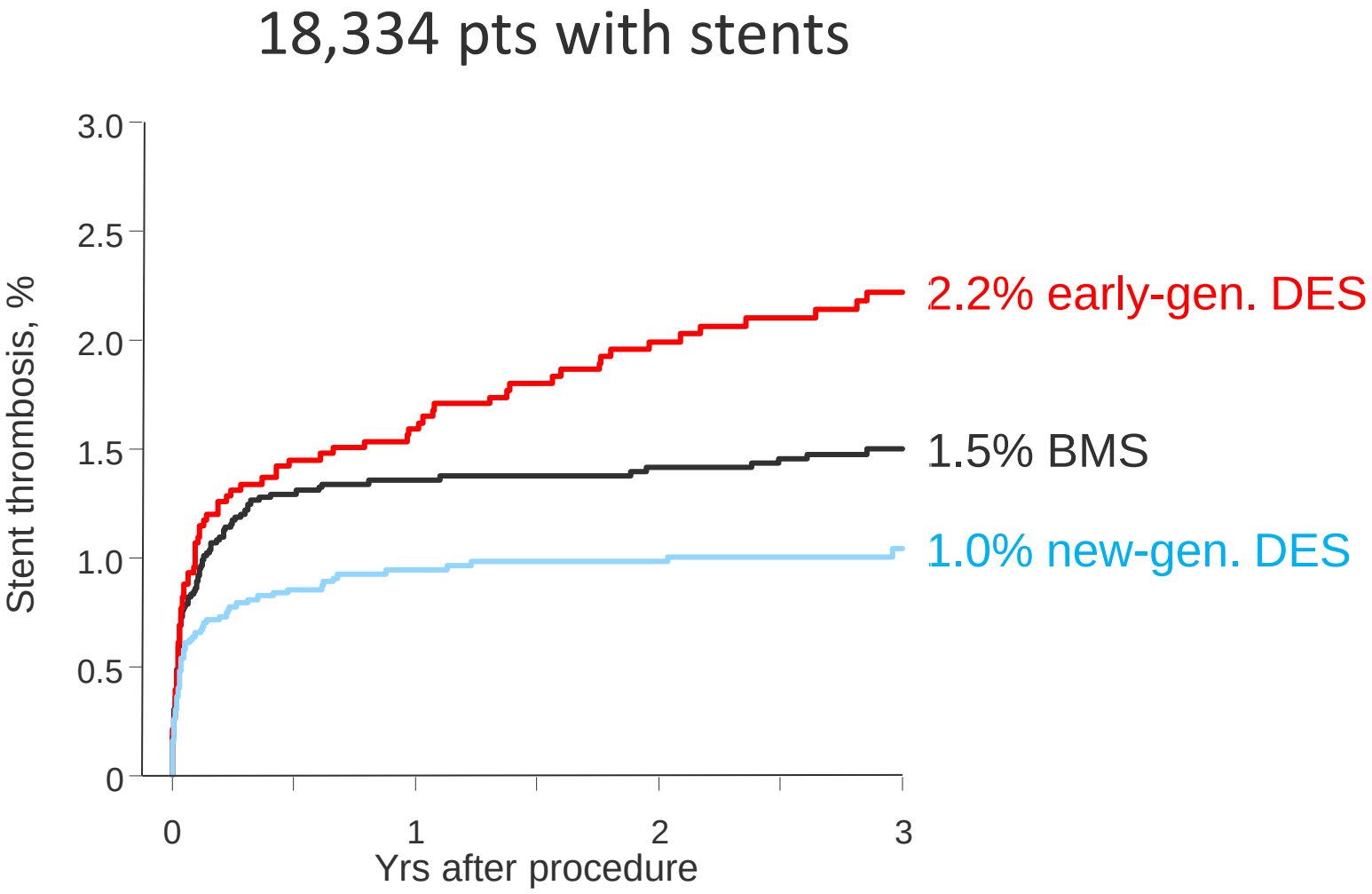


RCTs of Xience vs. Cypher
TLR



De Waha et al, Clin Res Cardiol 2012

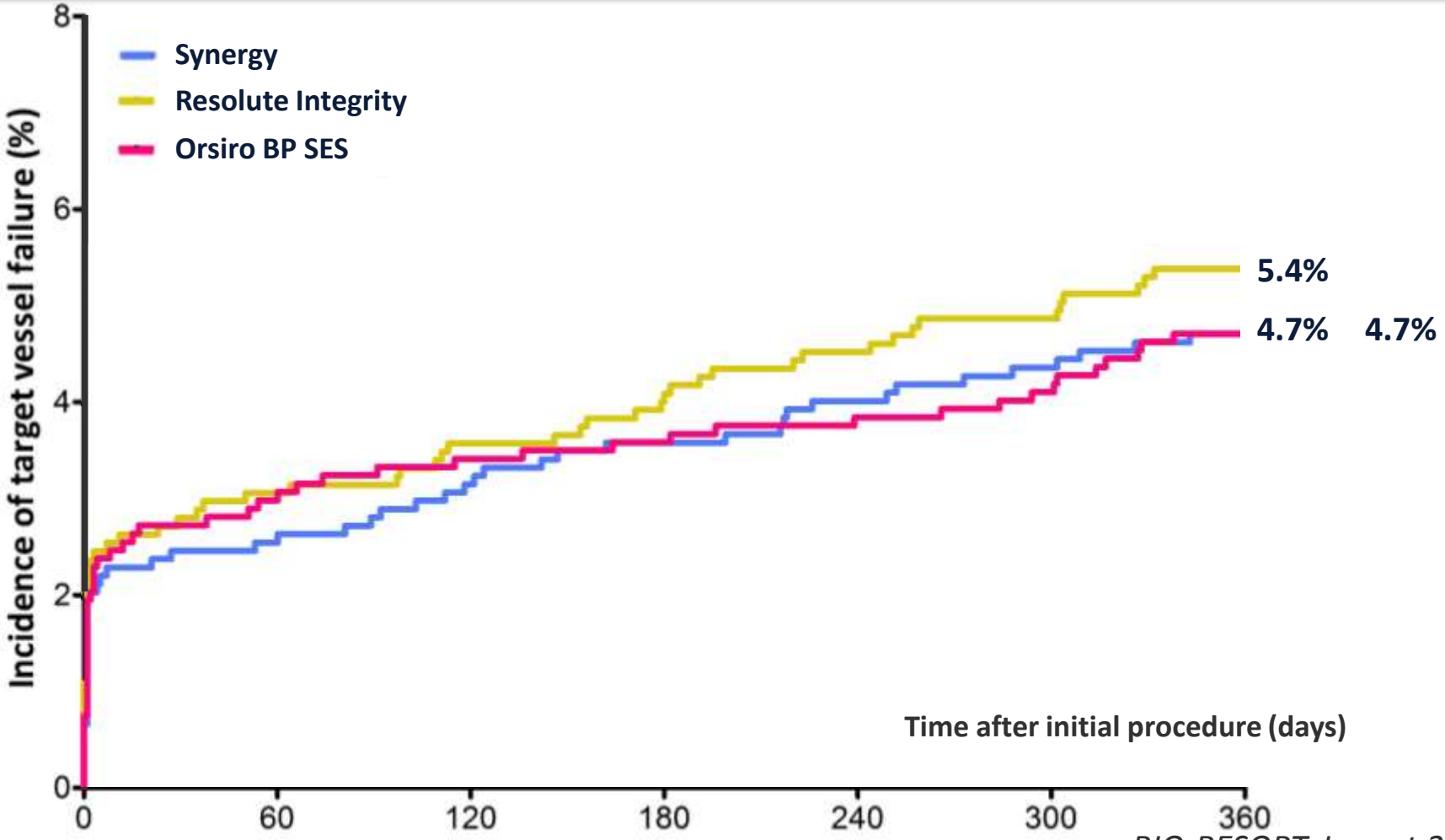
2° generation DES
Clinical Evidence vs. 1° generation DES



Tada et al, JACC Interv 2013

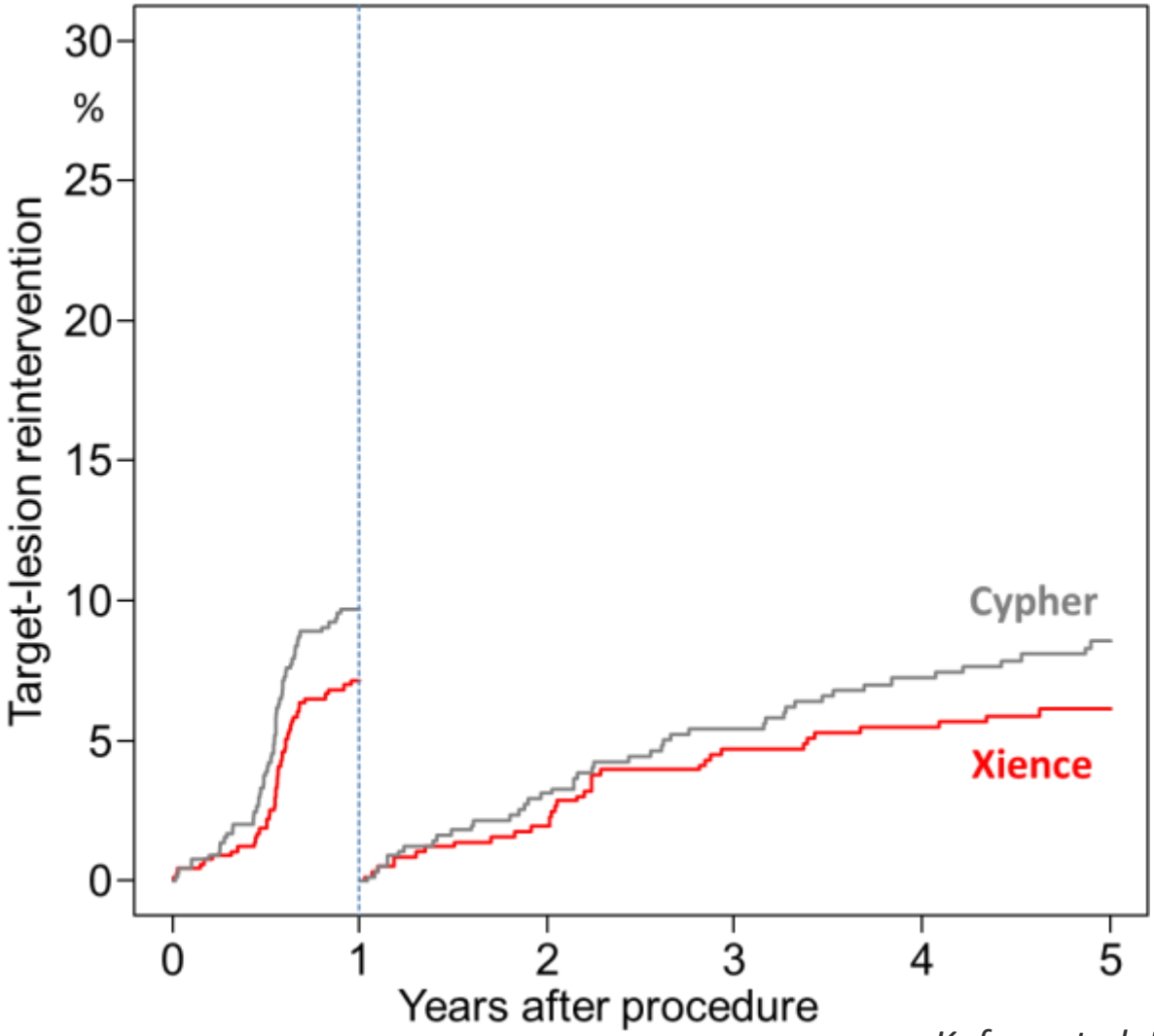
Thin-strut DES With Biodegradable Polymer Coatings: BIO-RESORT Trial

Primary Endpoint: Cardiac death or TV-related MI or TLR



BIO-RESORT, Lancet 2016

Limitations of current DES
Late luminal creep



Kufner et al, Eurointervention 2016

Which DES I prefer?

- A stent that can easily be placed where needed
- A stent supported by evidence for efficacy and safety
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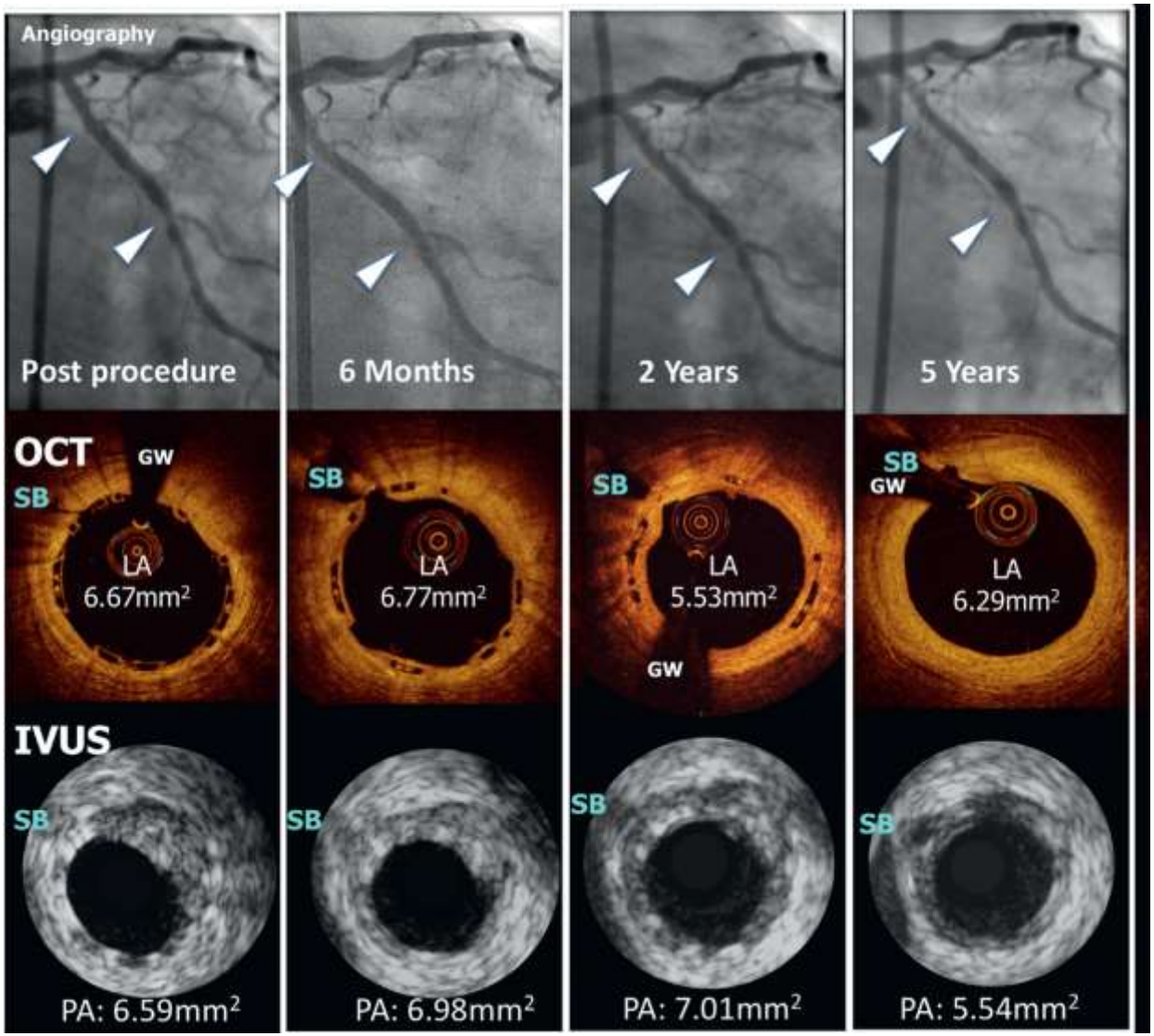
I believe…

...the best device is the device that leaves the least amount of material behind after accomplishing its mission

Is BRS my preferred drug-eluting device?



It leaves nothing behind after 3-4 years

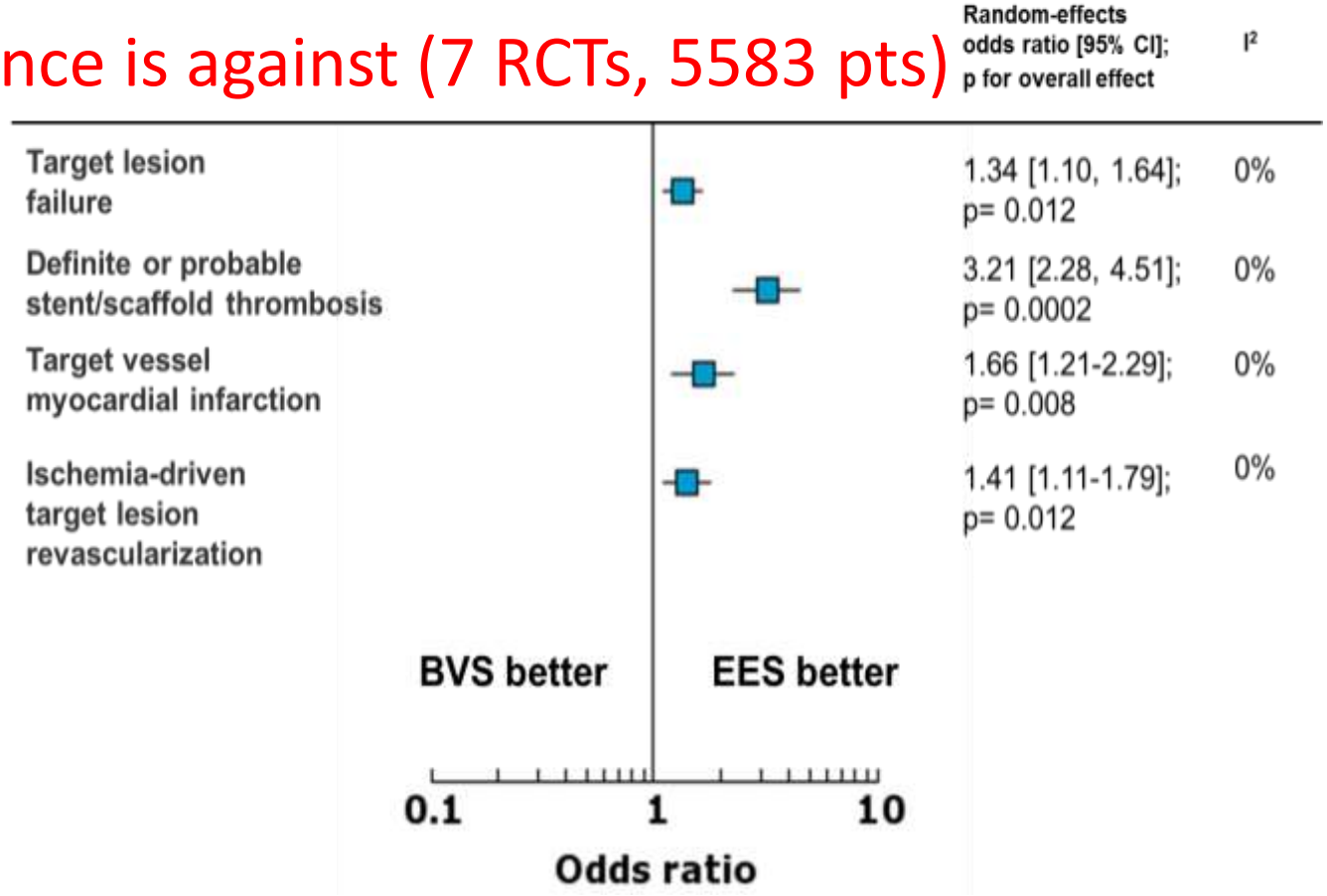
Serruys et al, JACC 2016

Is BRS my preferred drug-eluting device?

- It leaves nothing behind after 3-4 years

but

- The evidence is against (7 RCTs, 5583 pts)



Which DES I prefer?

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In accordance with the concept of

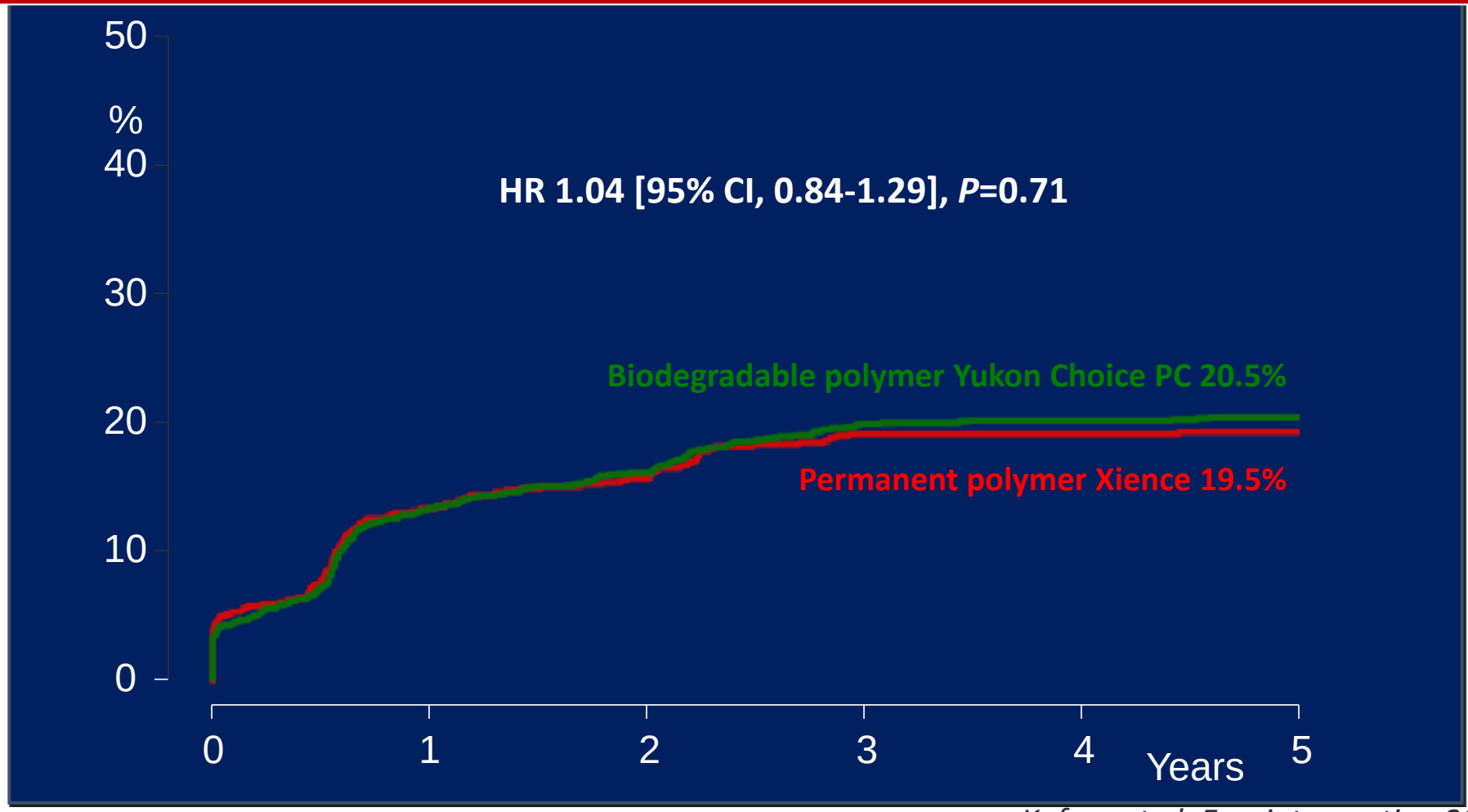
„least amount of material left behind“,

a thin-strut stent with biodegradable polymer or

no polymer at all might be preferrable

Although evidence does not show a measurable long-term advantage

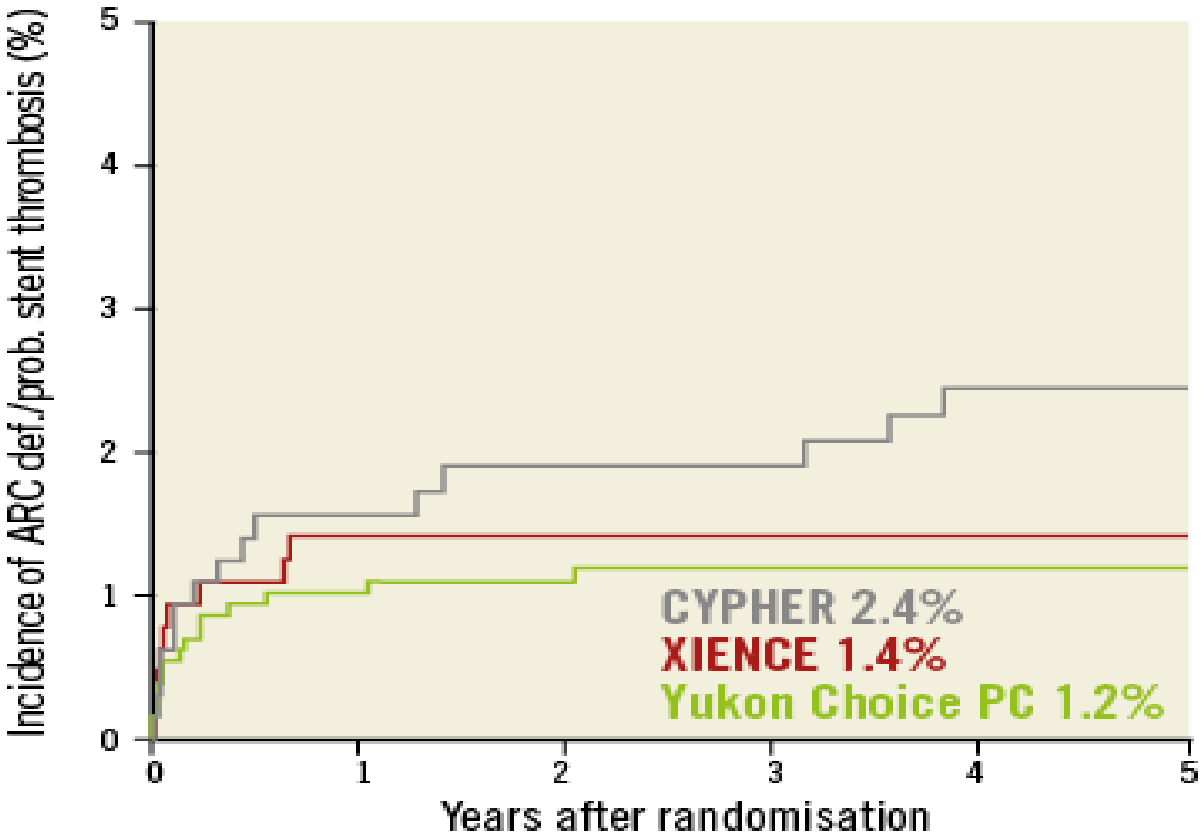
Cardiac death/target vessel MI/TLR in 2,603 pts



Kufner et al, Eurointervention 2016

ISAR-TEST 4: Final 5-year data in 2,603 pts

Definite/probable stent thrombosis



Kufner et al, Eurointervention 2016

ISAR-TEST 5: Final 5-year data in 3,002 pts Polymer-fre, dual drug (sirolimus+probucol)-eluting stent

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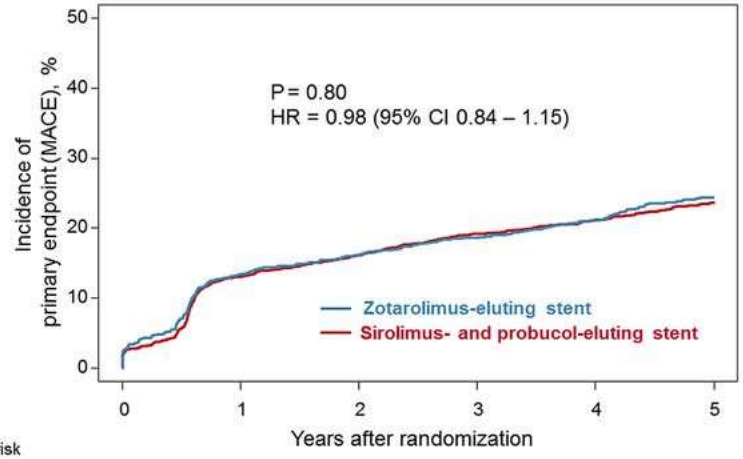
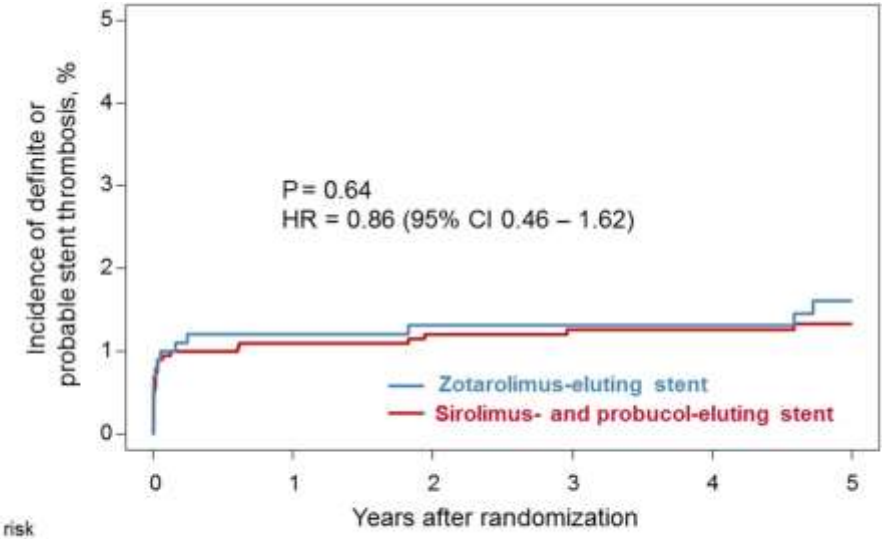
Cardiac death, MI related to the target vessel, or TLR

A



Patients at risk						
Sirolimus- and probucol-eluting stent	2002	1695	1591	1493	1393	1209
Zotarolimus-eluting stent	1000	830	779	730	680	583



Patients at risk						
Sirolimus- and probucol-eluting stent	2002	1904	1819	1733	1632	1433
Zotarolimus-eluting stent	1000	939	898	856	797	694

Kufner et al, JACC Interv 2016