



A prospective multicenter randomized all-comers trial to assess the safety and effectiveness of the ultra-thin-strut sirolimus-eluting coronary stent Supraflex: 2-year results of the TALENT trial

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On behalf of the TALENT Investigators

Wednesday, Sep 25, 2019, 12:30 PM – 12:40 PM

Disclosure Statement of Financial Interest

I, (Azfar Zaman) have received lecture/consulting fees/research support from:

- Abbott Vascular**
- Boston Scientific**
- Cardinal Health**
- Medtronic Corporation**
- SMT**
- Merrill**



Background

- A recent meta-analysis showed that ultra-thin strut DES (<70 µm) reduced the incidence of TLF compared with contemporary thicker strut DES. ¹

¹ Bangalore S, et al. *Circulation*. 2018 Nov 13;138(20):2216-2226.

- TALENT is a prospective, multi-center, all-comers randomized controlled trial (n=1,435), demonstrating non-inferiority of the Supraflex SES vs. the Xience EES in terms of device-oriented composite endpoint (DOCE) up to one years ².

² Zaman A, et al. *Lancet*. 2019 Mar 9;393(10175):987-997.

- The clinical outcomes of Supraflex SES beyond 1 year have not yet been reported in the context of prospective clinical trial.

Objective

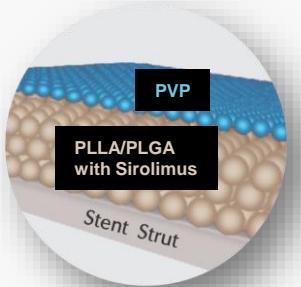
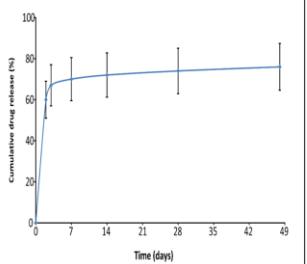
The aim of this study is to investigate whether the comparable outcomes of Supraflex SES to Xience EES are maintained at 2 years follow-up.



Trial organization (investigator-initiated trial)

- Sponsor: **European Clinical Research Institute** (www.ECRI-trials.com)
- Grant giver:
 - **SMT (Supraflex SES)**
- Clinical Research Organization: **Cardialysis**
- Statistical analysis: **Cardialysis**
- Clinical event committee (CEC)
 - **Prof. W. Rutsch** (Catheterisation Laboratories Charité, University Clinic Berlin, Germany)
 - **Dr. S. Garg** (Central Manchester & Manchester Children's Foundation Trust, East Lancashire NHS Trust United Kingdom)
 - **Dr. J-P. R. Herrman** (Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands)
 - **Dr. B. Rensing** (St. Antonius Ziekenhuis, Nieuwegein, the Netherlands)
- Data and Safety Monitoring Board (DSMB)
 - **Prof. S. James** (DSMB Chairman, Uppsala University, Sweden)
 - **Prof. H. Boersma** (DSMB Biostatistician, Erasmus Medical Center, Rotterdam, the Netherlands)
 - **Dr. J. ten Berg** (DSMB member, St. Antonius Hospital, Nieuwegein, the Netherlands)

Supraflex SES

Platform 	Stent material	CoCr (L605) with highly flexible 'S-link' interconnector
	Strut thickness	60 µm across all stent diameters (2.0 to 4.5mm)
Carrier 	Biodegradable polymer matrix	<ul style="list-style-type: none"> - Top layer <ul style="list-style-type: none"> • 0% drug • Protective layer (PVP: poly-vinylpyrrolidone) - Base layer <ul style="list-style-type: none"> • 100% drug (Sirolimus) • PLLA and PLGA
	Coating	Circumferential The average thickness: 4-5 µm
Drug 	Sirolimus	1.4 µg/mm²
	Release profile	<ol style="list-style-type: none"> 1. Initial burst <ul style="list-style-type: none"> - 70% released within 7 days - Aiming to prevent excessive cell growth 2. Sustained release up to 48 days

TALENT study flow chart up to 2 years

"All-comers" population

- Any ischemic coronary syndrome (STEMI, NSTEMI, UAP,SAP)
- Any type of lesions
 - ✓ Left main
 - ✓ SVG
 - ✓ CTO
 - ✓ Bifurcation
 - ✓ ISR
 - ✓ etc.
- Unrestricted use of DES
(number, length)

All-comers patient population
1435 patients from 23 enrolling sites

Randomization (1:1)

Supraflex SES
N=720

Xience EES
N=715

18 dead
11 withdrew consent
5 lost to follow-up

21 dead
7 withdrew consent
3 lost follow up

704 patients FUP at 720 days (97.8%)
- included in ITT analysis

705 patients FUP at 720 days (98.6%)
- included in ITT analysis

Primary Endpoint: DOCE

(Device-oriented composite endpoint: cardiac death, TV-MI, and CI-TLR)

Baseline characteristics

Characteristic	Supraflex (n=720)	Xience (n=715)	Percentage difference (95% CI)
Age (years)	65.0±10.3	64.7±10.1	0.3 (-0.8 to 1.3)
Male	75.8%	76.5%	-0.7% (-5.1 to 3.7%)
BMI (kg/m ²)	28.3±4.8	28.3±4.6	0.0% (-0.5 to 0.5%)
Risk factors			
Current smoker	24.5%	24.1%	0.4% (-4.0 to 4.9%)
Diabetes mellitus	21.8%	24.9%	-3.1% (-7.5 to 1.3%)
Insulin dependent	6.7%	9.4%	-2.7% (-5.5%, 0.1%)
Hypertension	65.3%	66.1%	-0.8% (-5.7 to 4.1%)
Hypercholesterolemia	61.8%	60.2%	1.6% (-3.4 to 6.7%)
Family history of CAD	46.3%	45.2%	1.2% (-4.1 to 6.5%)
History of			
Previous MI	18.9%	17.9%	1.0% (-3.0 to 5.0%)
PVD	7.1%	9.0%	-1.9% (-4.7 to 0.9%)
Previous PCI	24.3%	21.4%	2.9% (-1.4 to 7.2%)
Previous CABG	4.6%	<	7.7% -3.1% (-5.6 to -0.6%)
Heart Failure	4.7%	6.9%	-2.1% (-4.5 to 0.3%)
Renal Insufficiency*	2.8%	2.0%	0.8% (-0.8 to 2.4%)
Indication			
Stable angina	40.4%	43.4%	3.0% (-2.1 to 8.1%)
ACS	59.6%	56.6%	
UAP	16.1%	13.8%	2.3% (-1.4 to 6.0%)
NSTEMI	26.9%	26.4%	0.5% (-4.1 to 5.1%)
STEMI	16.5%	16.4%	0.2% (-3.7 to 4.0%)

Data are mean±SD (n) or n (%) *Renal insufficiency is defined as serum creatinine >2.5 mg/dL or creatinine clearance ≤ 30mL/min.

Lesion and procedural characteristics

Lesion characteristics (Patient level)

	Supraflex n=1046 lesions	Xience N=1030 lesions	P-value
Vessel location:	0.070		
LAD	44.7%	41.9%	
LCX	21.0%	23.0%	
RCA	32.3%	31.8%	
Left main	1.4%	1.6%	
Bypass graft	0.5%	1.7%	
Number of lesions treated per patient	1.45±0.77	1.44±0.74	0.760
Total stented length per patients (mm)	37.2±27.4	37.2±27.0	0.961
TIMI flow pre	0.122		
Flow 0	13.7%	10.9%	
Flow 1	3.8%	4.1%	
Flow 2	6.3%	8.2%	
Flow 3	72.5%	72.2%	
Restenotic lesion	4.2%	4.1%	0.883
Small vessel (≤ 2.75 mm)	40.2%	40.2%	0.999
Long lesion (> 18 mm)	49.7%	49.6%	0.964
Bifurcation involved	16.0%	15.2%	0.650

Procedural characteristics (Lesion level)

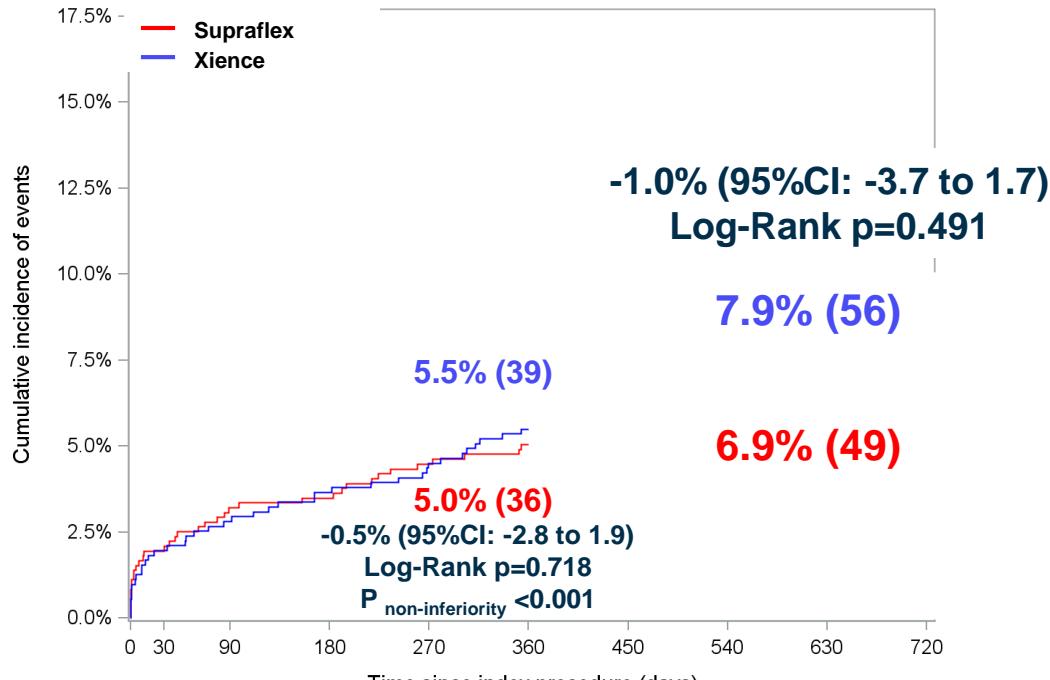
	Supraflex n=1046 lesions	Xience N=1030 lesions	P-value	
Pre-dilatation	77.2%	75.9%	0.509	
Max pressure (atm)	13.6±4.3	13.5±4.1	0.677	
Max balloon diameter (mm)	2.52±0.43	>	2.46±0.43	0.006
Stent characteristics (per lesion)				
Number of stents used	1.2±0.5	1.2±0.5	0.592	
Total stent length (mm)	25.7±14.5	26.0±14.5	0.623	
Overlapping stents	21.1%	19.5%	0.361	
Nominal Stent diameter (mm)	3.0±0.5	3.0±0.5	0.186	
Post balloon dilatation				
Max pressure (atm)	17.1±4.3	17.5±3.9	0.096	
Max balloon diameter (mm)	3.30±0.58	3.29±0.60	0.804	

Data are mean±SD (n) or n (%)



DOCE up to 2 years (ITT)

(A composite of cardiac death, TV-MI, and CI-TLR)



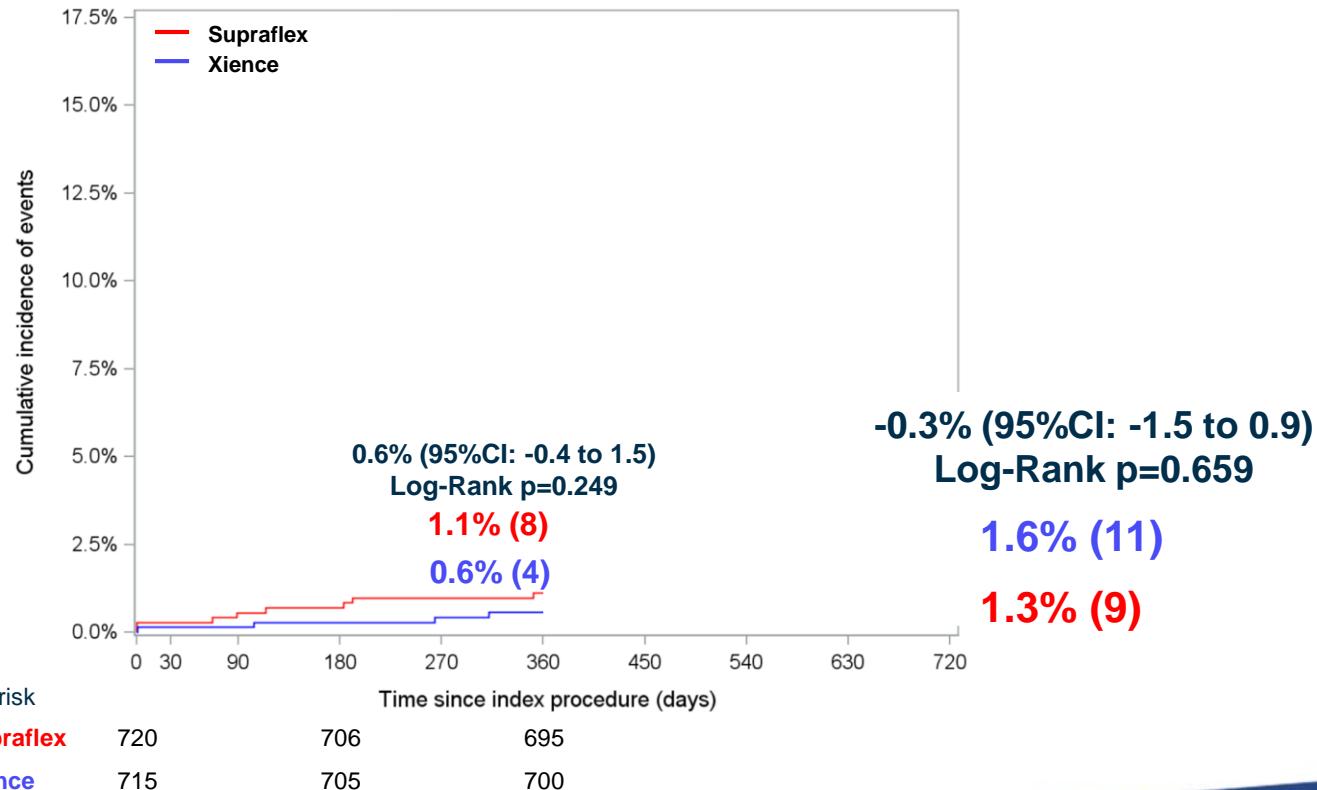
At risk

Supraflex 720 686 668

Xience 715 682 667

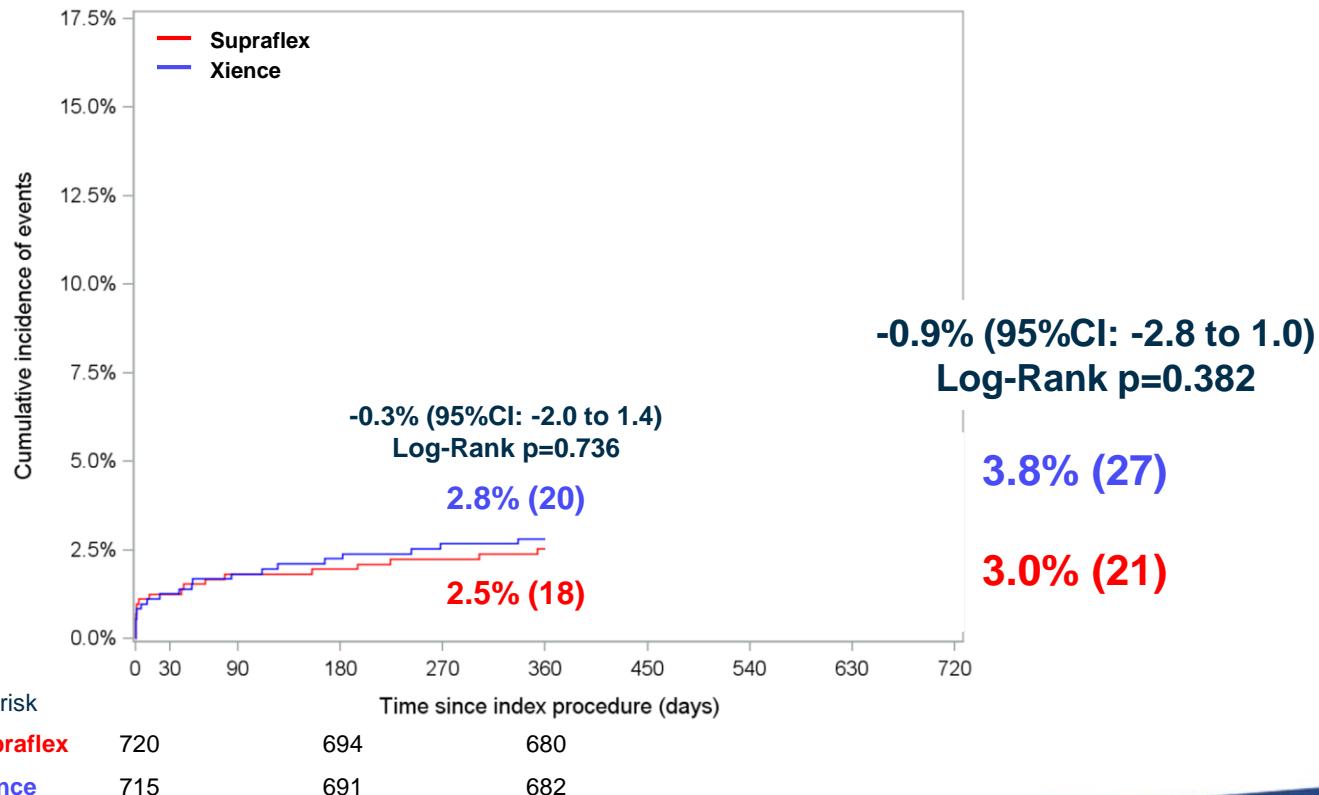


Cardiac death up to 2 years (ITT)



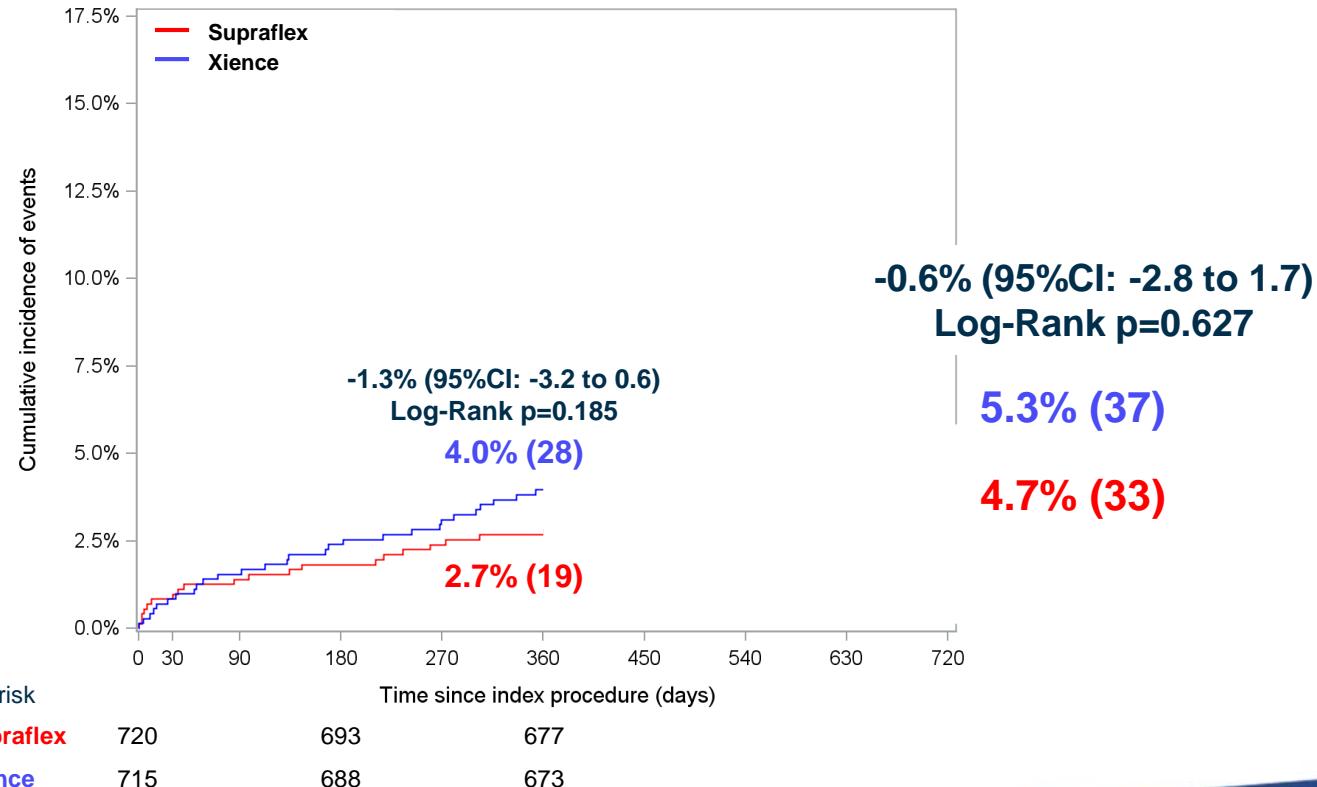


TV-MI up to 2 years (ITT)



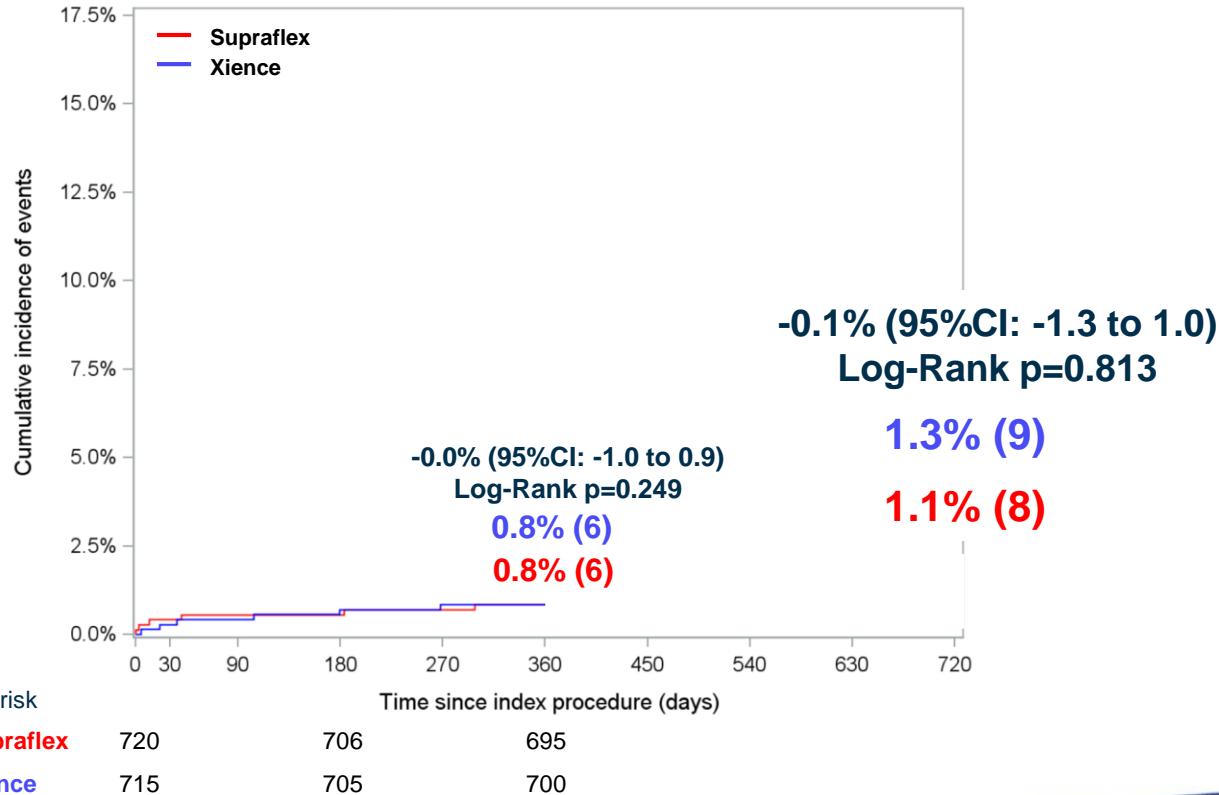


CI-TLR up to 2 years (ITT)





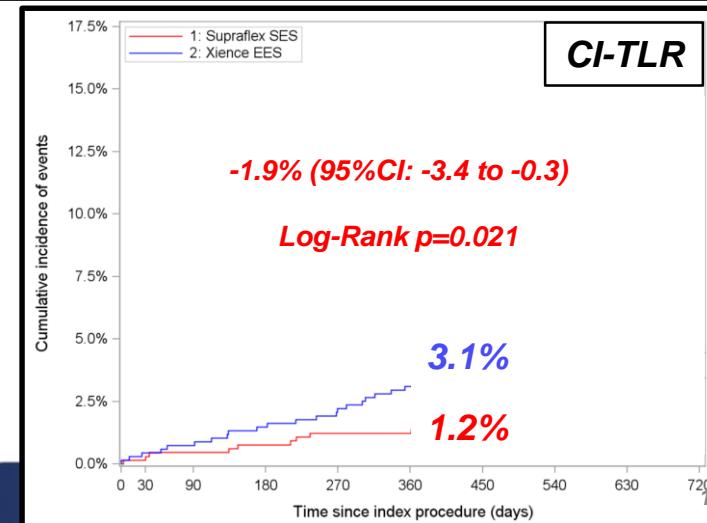
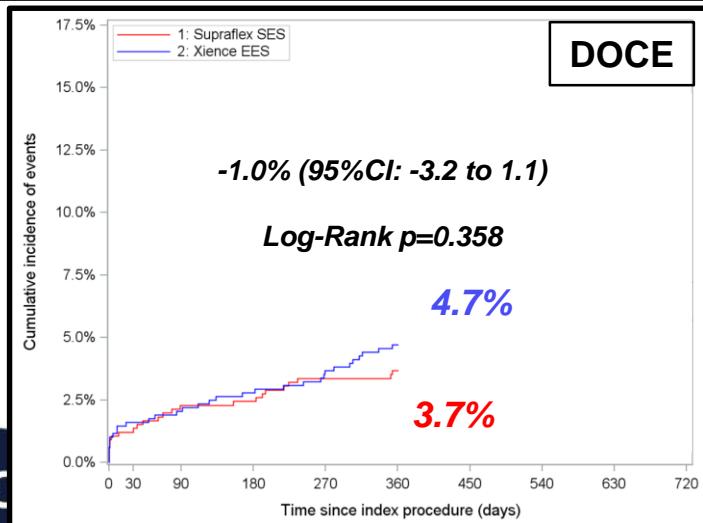
Definite or probable ST up to 2 years (ITT)



Per-protocol analysis at 1 years

(including patients who have received only the assigned study stent)

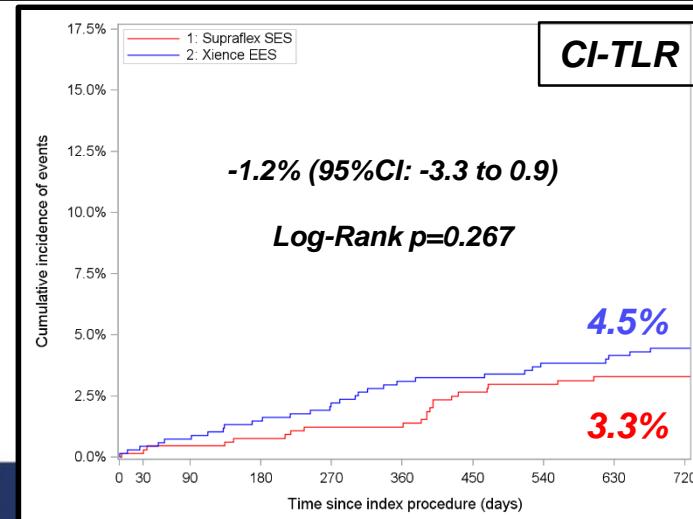
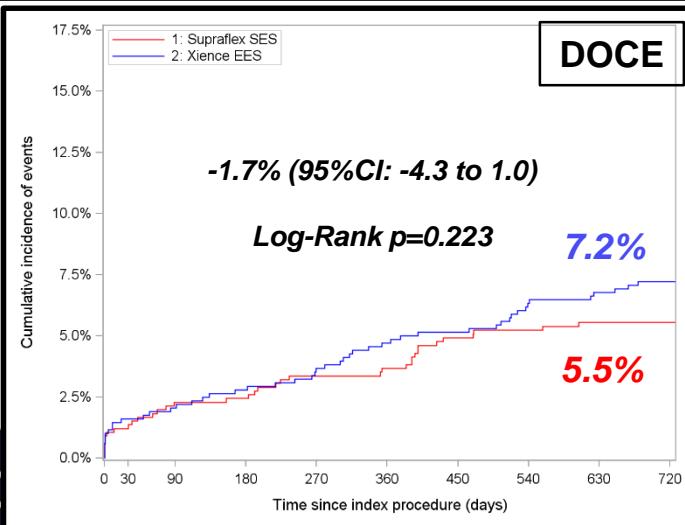
	Supraflex	Xience		
	n=660	n=685	Percentage difference (95% CI)	p value
DOCE	3.7% (24)	4.7% (32)	-1.0% (-3.2 to 1.1%)	0.358
Cardiac death	1.2% (8)	0.6% (4)	0.6% (-0.4 to 1.7%)	0.217
TV-MI	2.1% (14)	2.8% (19)	-0.6% (-2.3 to 1.0%)	0.450
CI-TLR	1.2% (8)	3.1% (21)	-1.9% (-3.4 to -0.3%)	0.021



Per-protocol analysis at 2 years

(including patients who have received only the assigned study stent)

	Supraflex	Xience	Percentage difference (95% CI)	p value
	n=660	n=685		
DOCE	5.5% (36)	7.2% (49)	-1.7% (-4.3 to 1.0%)	0.223
Cardiac death	1.4% (9)	1.6% (11)	-0.2% (-1.6 to 1.1%)	0.736
TV-MI	2.6% (17)	3.8% (26)	-1.2% (-3.1 to 0.7%)	0.216
CI-TLR	3.3% (21)	4.5% (30)	-1.2% (-3.3 to 0.9%)	0.267



Conclusion

- The Supraflex biodegradable polymer SES demonstrated comparable 2-year clinical outcomes to Xience EES in all-comer population.
- Lower rate of CI-TLR in the Supraflex arm up to 1 year in per-protocol analysis was subsided beyond 1 year.



TALENT participating 23 sites

Thank you for your contribution!

	Amsterdam University Medical Center Prof. R-J. de Winter
	Catharina hospital Dr. P. Tonino
	Medisch Centrum Leeuwarden Dr. S. Hofma
	PAKS Chrzanów Dr. A. Zurakowski
	Maasstad ziekenhuis Dr. P. Smits
	PAKS Kędzierzyn- Koźle Dr. J. Prokopczuk
	Hospital La Paz Dr. R. Moreno
	University Hospital of Wales Dr. A. Choudhury
	Freeman Hospital Prof. A. Zaman
	City Clinic Heart and Vascular Institute Prof. I. Petrov
	Bellvitge University Hospital Dr. A. Cequier
	Lister Hospital Dr. N. Kukreja

Number of enrollment		Number of enrollment
224	Castle Hill Hospital Dr. A. Hoye	33
217	Hospital alvaro Cunqueiro University Hospital of Vigo Dr. A. Iniguez	29
154	Invasive Cardiology Unit, Cardiology Center Dr. I. Ungi	27
116	Hospital de Sant Pau Dr. A. Serra	23
100	Central Hospital of the Internal and Administration Ministry Prof. R. Gil	13
94	Royal Victoria Hospital Dr. S. Walsh	12
69	St. George's University Multi-profile Hospital for Active Treatment Dr. G. Tonev	11
65	Ospedale San Raffaele Prof. A. Colombo	10
63	Semmelweis University Heart and Vascular Center Prof. B. Merkely	10
61	St Bartholomew's Hospital Prof. A. Mathur	10
53	Amphia Ziekenhuis Dr. S. IJsselmuiden	5
36	From 7 countries in Europe	