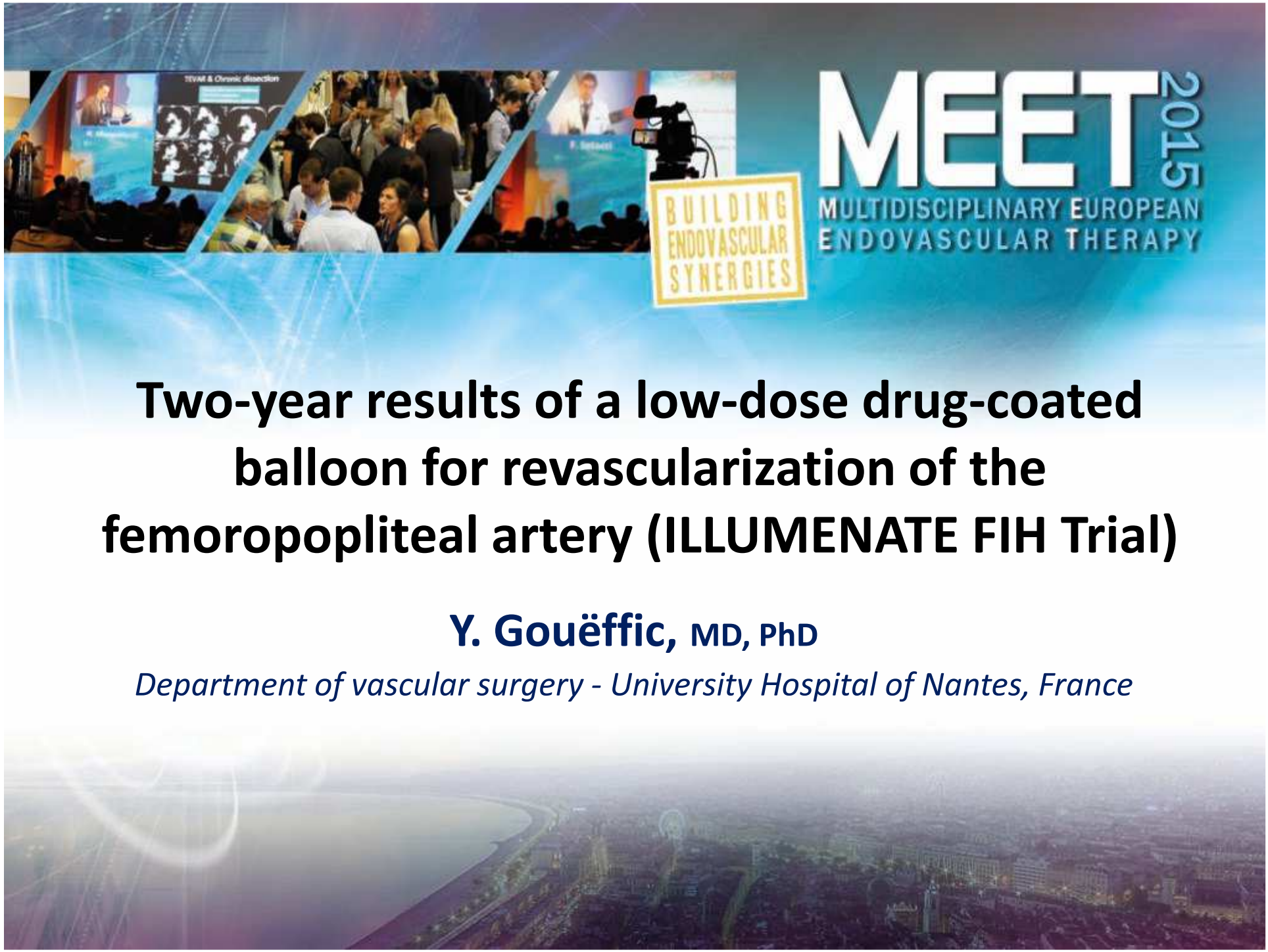

Two-year results of a low-dose drug-coated balloon for revascularization of the femoropopliteal artery (ILLUMENATE FIH Trial)

Y. Gouëffic, MD, PhD

Department of vascular surgery - University Hospital of Nantes, France

Disclosure

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Speaker's name: Yann Goueffic

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

Consultant: BIOTRONIK, MEDTRONIC, PEROUSE

Honorarium: COOK, CORDIS, JOHNSON & JOHNSON, Spectranetics

Institutional grant/research support: COVIDIEN, ST. JUDE MEDICAL, TERUMO

Stellarex DCB
(Enduracoat Technology)

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- **Spectranetics Proprietary Coating Technology open-folded, CADD (Controlled Automated Drug Deposition)**

- **2 µg/mm² PTX, crystalline formulation**

- **Polyethylene glycol (PEG) excipient**
  Hydrophilic, non-toxic, widely proven from pharma and cosmetics applications

Stellarex DCB pre-clinical data

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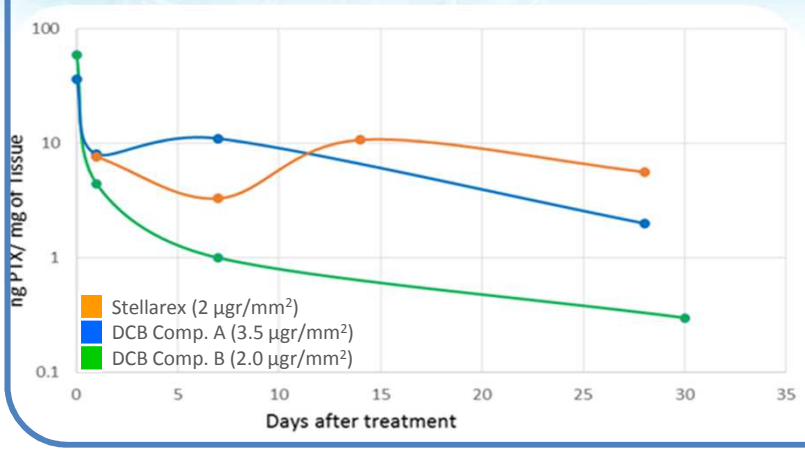
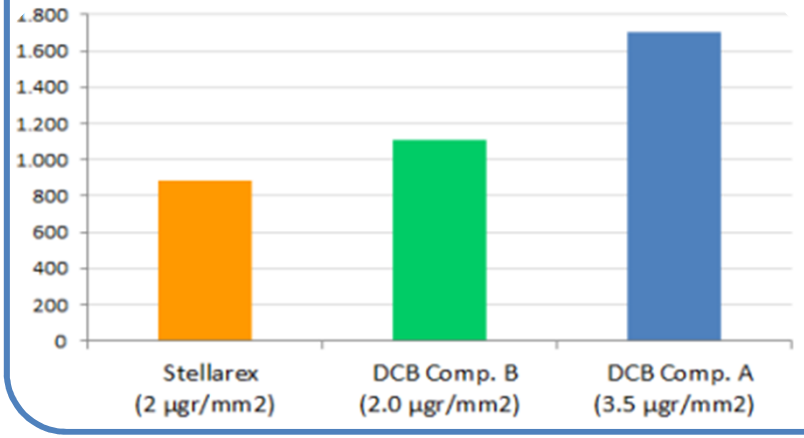
Arterial Pharmaco-Kinetics [1]



- **High transfer efficiency**
- **Effective Residency (≥ 28 days)**

1. Superimposed PK curves from different datasets: R.Melder, EuroPCR 2012; Yazdani et.al. Catheterization and Cardiovascular Interventions 83:132-140 (2014); data on file at Spectranetics

PTX particulate loss after transit [2]



High coating stability

Limited drug loss

2. Number of particulates ≥10µm/mm of DCB length lost during transit. Data on file at Spectranetics

Stellarex™ Fem-Pop Clinical Program

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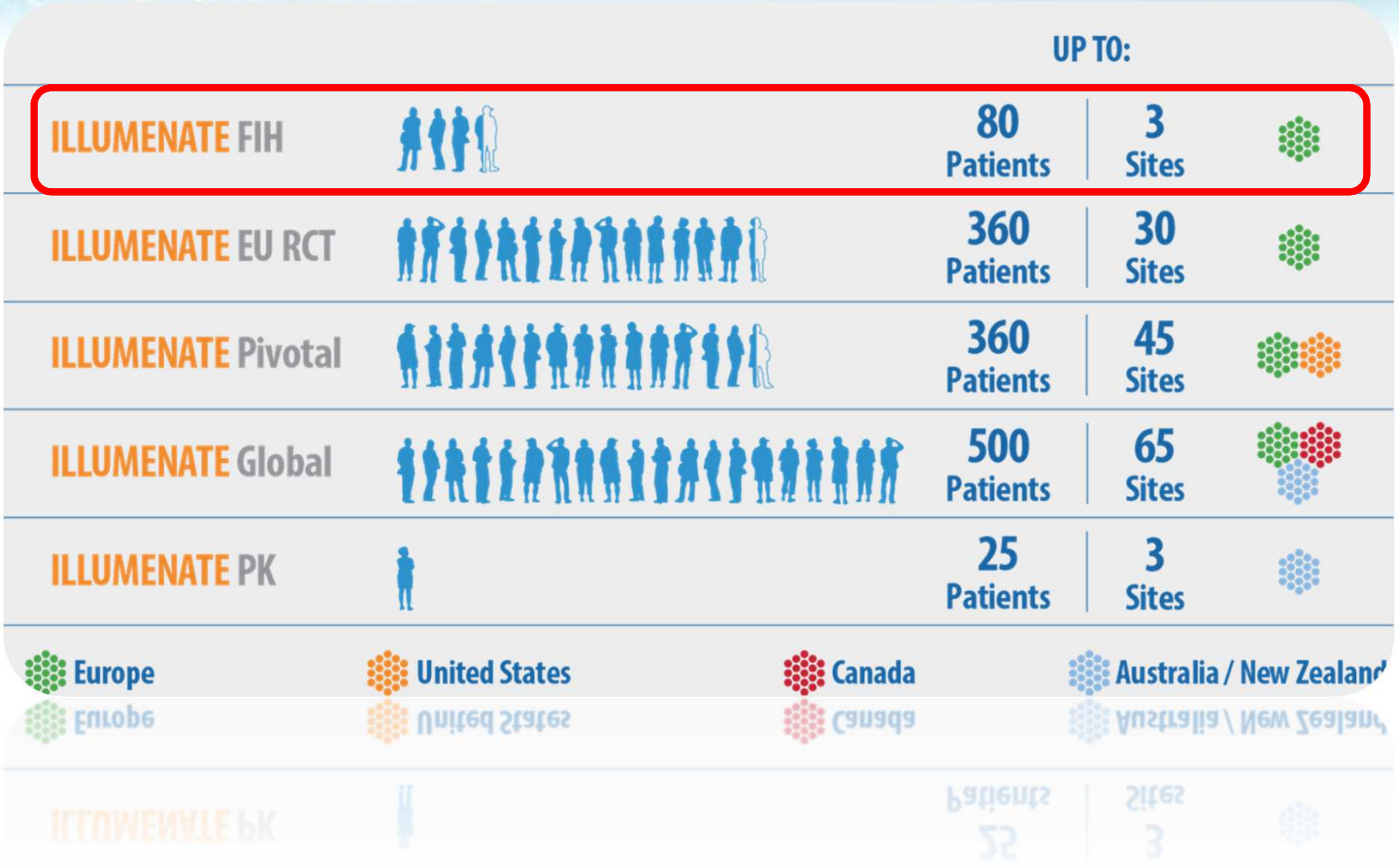

Design and Primary Endpoints

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80-patients, prospective, multi-center Trial

2 patient cohorts subsequently enrolled

		pre-dilatation cohort (N=50)	direct DCB cohort (N=30)
6-month	LLL (Primary Efficacy Endpoint)	✓	✓
	MAE (Primary Safety Endpoint)		
12-month	Primary Patency, TLR	✓	✓
24-month	Primary Patency, TLR	✓	Data pending

ILLUMENATE FIH Trial Overview

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ClinicalTrial.gov NCT02110524

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Catheterization and Cardiovascular Interventions 00:00–00 (2015)

Original Studies

Two-Year Results of a Low-Dose Drug-Coated Balloon for Revascularization of the Femoropopliteal Artery: Outcomes From the ILLUMENATE First-in-Human Study

Henrik Schroeder,[1*] MD, Dirk-Roelfs Meyer,[2] MD, Beata Lux,[3] MD, Ferdinand Ruecker,[1] MD, Marcello Martorana,[1] MD, and Stephan Duda,[1] MD

1. Schroeder H, Meyer DR, Lux B, Ruecker F, Martorana M, Duda S. Two-year results of a low-dose drug-coated balloon for revascularization of the femoropopliteal artery: Outcomes from the ILLUMENATE first-in-human study. Catheter Cardiovasc Interv. 2015 Feb 23. doi: 10.1002/ccd.25900. [Epub ahead of print] PubMed PMID: 25708850

[*] SynvaCor, Springfield, USA; [**] VasCore, Boston, USA

Patient Key Eligibility Criteria

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Key Inclusion Criteria

- Rutherford class 2, 3 or 4
- SFA or Popliteal Artery (P1)
- De novo or restenotic lesion(s) ≥ 3 cm and ≤ 15 cm
- Target vessel reference diameter ≥3 mm and ≤7 mm
- Target lesions can be treated with maximum of 2 Stellarex DCBs

Key Exclusion Criteria

- Acute or sub-acute thrombus in target vessel
- Prior vasc. surgery of target lesion
- Inadequate distal outflow
- Significant inflow disease
- GI bleeding or any coagulopathy contradicting the use of anti-platelet therapy
- Use of adjunctive therapies (i.e. debulking or plaque incision)

Primary endpoints

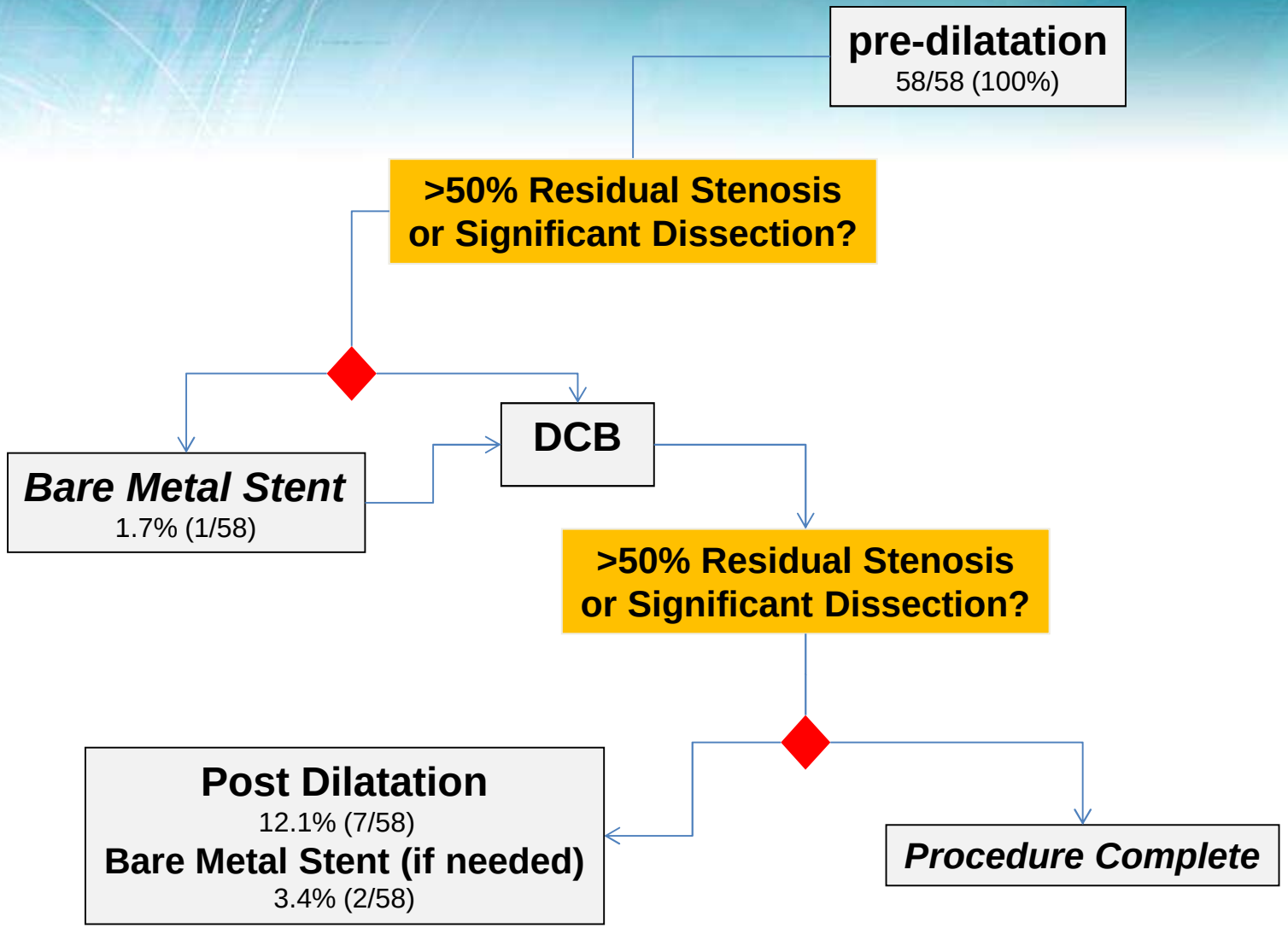
- **Primary safety endpoint: <u>major adverse events @ 6 months</u>**

defined as a composite rate of cardiovascular death, index limb amputationand ischemia-driven target lesion revascularization (TLR), as determined by the core lab.

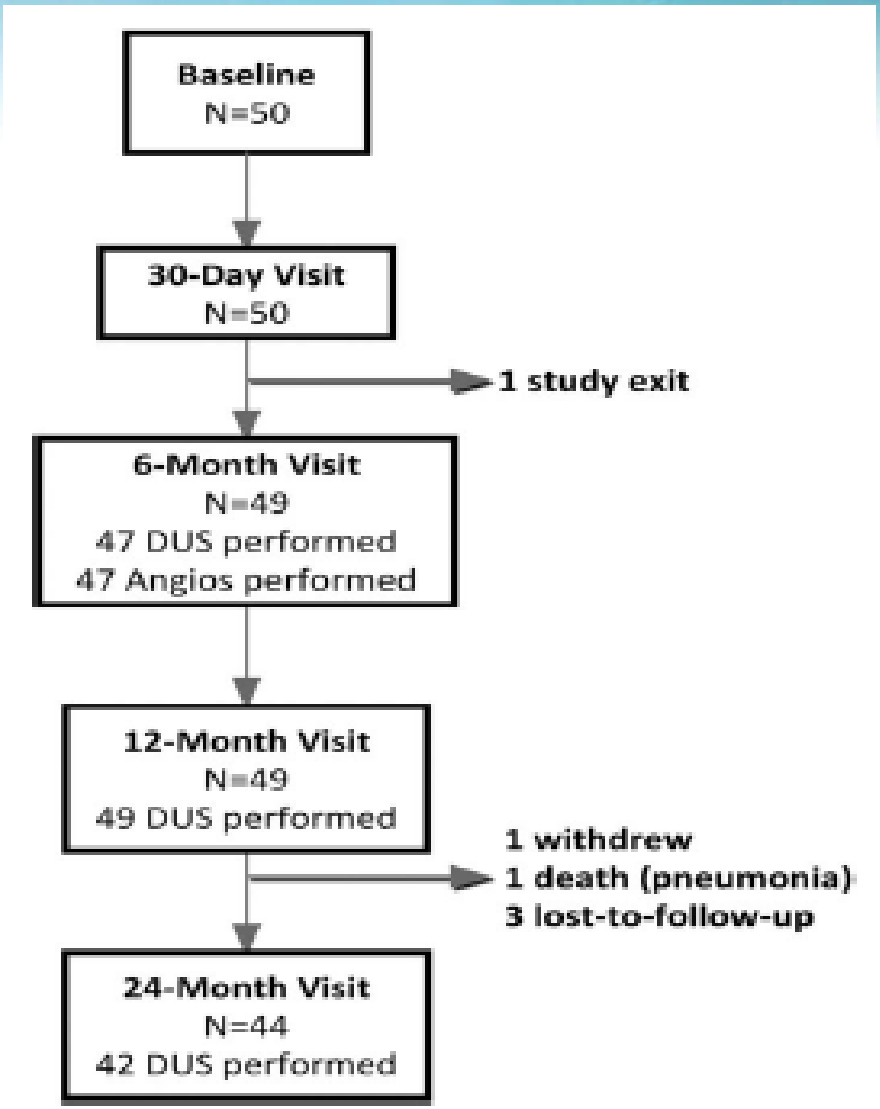
- **Primary efficacy endpoint: <u>late lumen loss @ 6 months</u>**

defined as the difference between the minimum lumen diameter (MLD) after the intervention and at follow-up as determined by the angiographic core lab.

Procedure Flow (pre-dil cohort)



Flow chart


Baseline
N=50
30-Day Visit
N=50
1 study exit
6-Month Visit
N=49
47 DUS performed
47 Angios performed
12-Month Visit
N=49
49 DUS performed
1 withdrew
1 death (pneumonia)
3 lost-to-follow-up
24-Month Visit
N=44
42 DUS performed

Key Baseline Characteristics

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Clinical

Patients Nr		**50**
mean age		69.0±9.3
Female gender		38.0% (19/50)
Diabetes		34.0% (17/50)
Hypertension		90.0% (45/50)
Hypercholesterolemia		80.0% (40/50)
Current Smokers		52.0% (26/50)
Angina		10.0% (5/50)
Previous PCI /CABG		34.0% (17/50)
Rutherford Class:	2	12% (6/50)
	3	86% (43/50)
	4	2% (1/50)

Anatomical

Lesions Nr		**58**
Proximal Popliteal		5.2% (3/58)
Lesion Length in mm		72.1±46.7 (58)
Percent Stenosis		75.1±17.0 (58)
Total Occlusions		12.1% (7/58)
RVD (mm)		5.2±0.9 (58)
MLD (mm)		1.3±1.0 (58)
Severe Calcium		13.8% (8/58)
Run-off Vessels:	0	1.7% (1/58)
	1	19% (11/58)
	2	39.7% (23/58%)
	3	39.7% (23/58%)

6-month primary endpoints

- **Primary Efficacy Endpoint = 0.54 mm LLL**

  95% CI: 0.28 - 0.81 mm; 0.81 mm < 1.1 mm (hist. control)

- **Primary Safety Endpoint = 4% MAE**

  95% CI: 0.5 - 13.7%; 13.7% < 30% (OPC)*

*** Objective Performance Criterion**

Primary Patency

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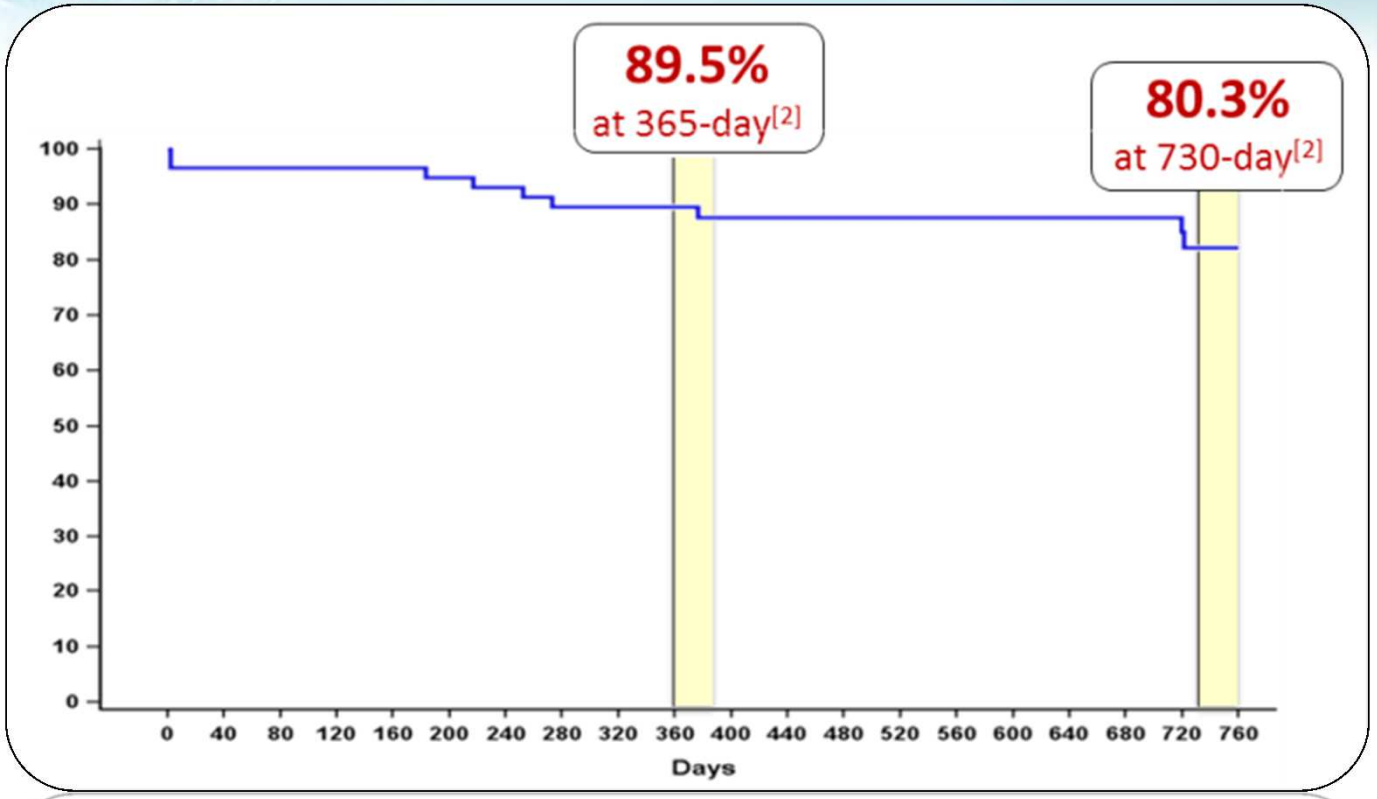
by Duplex Core Lab evaluation



1. Primary Patency defined as freedom from Duplex derived restenosis (PSVR < 2.5) and cinically driven TLR
2. Primary Patency rates by KM estimation at upper level of FU intervals = 87.7% (390-day) and 80.3% (760-day)

Freedom from clinically driven TLR [1]

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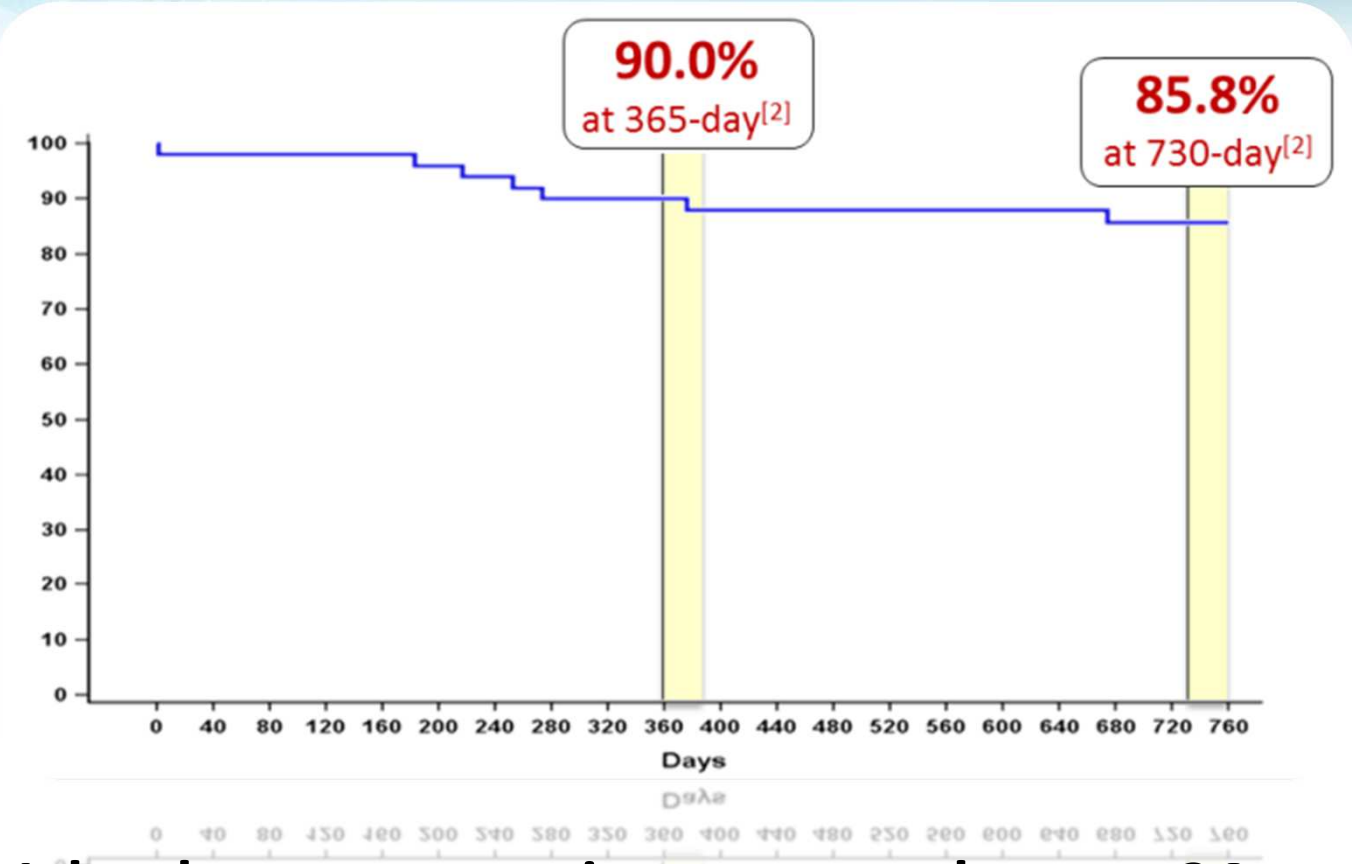
by Clinical Event Committee adjudication

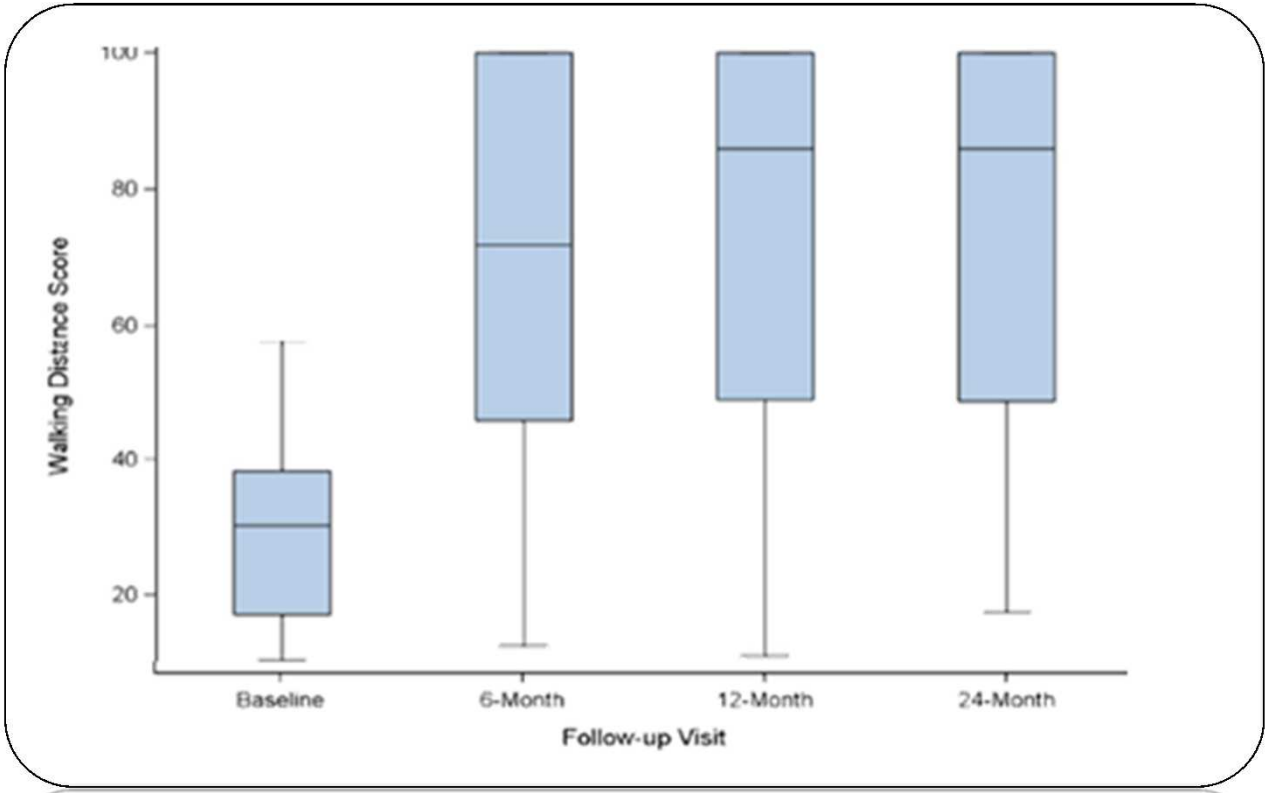


No CV deaths or amputations reported out to 24 months

1. Defined as revascularization associated with >50% stenosis via angiogram and worsening of RCC 1 or ABI decrease of >0.15 from the maximum early post-procedure level, that is clearly referable to the target lesion
2. Clinically driven TLR by KM estimation at upper level of FU intervals = 87.9% (390-day) and 85.8% (760-day)

Functional Outcome

Significant and sustained improvement in walking distance by WIQ and Treadmill subset (N=34)



Stellarex™ Evidence in Context

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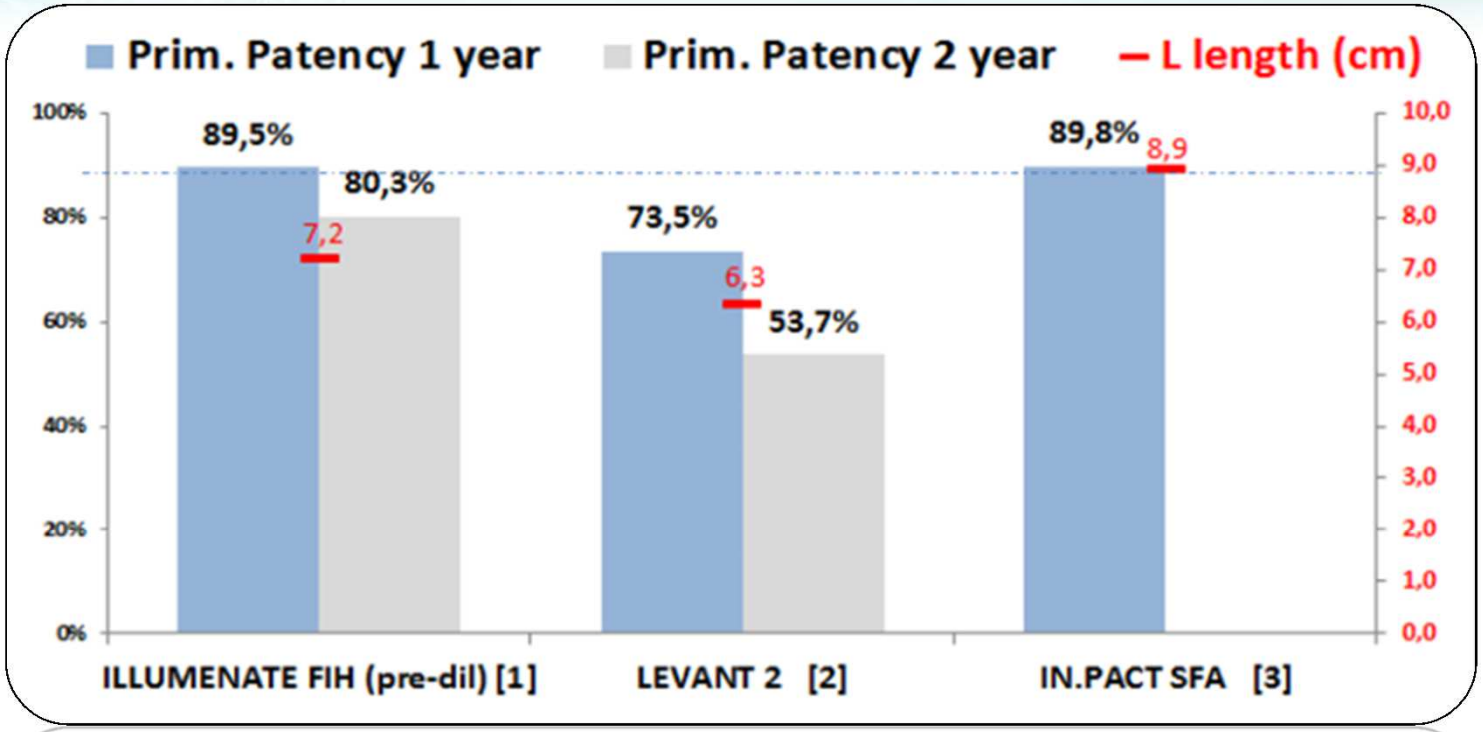
Primary Patency from multicenter, Duplex Corelab* adjudicated DCB Trials



*** VasCore DUS Core lab (Boston, MA, USA); PSVR threshold < or ≤ 2.5**

[1] Schroeder H et al. Two-year results of a low-dose drug-coated balloon for revascularization of the femoropopliteal artery: Outcomes from the ILLUMENATE first-in-human study. Catheter Cardiovasc Interv. 2015 Feb 23. doi: 10.1002/ccd.25900 [2] United States, Department of Health and Human Services. FDA Executive Summary: Circulatory System Devices Advisory Panel June 12 ,2014: Bard Lutonix® 035 Drug Coated Balloon PTA Catheter [3] G.Tepe, Presentation; IN.PACT SFA 1-year Primary Outcomes; Charing Cross; London United Kingdom, April 5-8, 2014

Take home messages

- Stellarex DCB pre-clinical evidence indicates high coating stability and transfer efficiency with low drug load (2 µg/mm^2).
- ILLUMENATE FIH demonstrated the safety and efficacy of Stellarex DCB for the treatment of fempop disease up to 2 years
- Core lab adjudicated primary patency of 89.5% and 80.3% match highest benchmark of reported rates at 1 and 2 years respectively
- Significant functional benefit with improved walking distance observed up to 2-years

Acute and 6-month Angiography

	Percent Diam. Stenosis (%)	Min. Lumen Diameter (mm)
Baseline	75.1% ± 17.0 (58)	1.3 ± 1.0 (58)
Post Pre-Dilatation	41.9% ± 12.6 (53)	3.0 ± 0.8 (53)
Post-DCB	21.1% ± 11.4 (58)	4.2 ± 0.8 (58)
Post-Procedure	19.1% ± 9.7 (58)	4.3 ± 0.7 (58)
P (Baseline vs Post-procedure)	<0.001	<0.001

- Device success[1]: 96.6% (56/58); Lesion success[2]: 100% (58/58)
- Geographic miss: 5.6% (3/54)

[1] <50% diameter stenosis by angio core lab post-DCB
[2] <50% diameter stenosis by angio core lab post-procedure