Benchmarking Ranger Drug-Coated Balloon Data in SFA Treatment

Universitätsklinikum Leipzig
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Disclosure

Dierk Scheinert, MD

Advisory Board /Consultant:

Abbott, Biotronik, Boston Scientific, Cook Medical, Cordis, CR Bard, Gardia Medical/Allium, Medtronic, TriReme Medical, Trivascular, Upstream Peripheral Technologies

- IMPORTANT INFORMATION: These materials are intended to describe common clinical considerations and procedural steps for the on-label use of referenced technologies as well as current standards of care for certain conditions. Of course, patients and their medical circumstances vary, so the clinical considerations and procedural steps described may not be appropriate for every patient or case. As always, decisions surrounding patient care depend on the physician's professional judgment in light of all available information for the case at hand.
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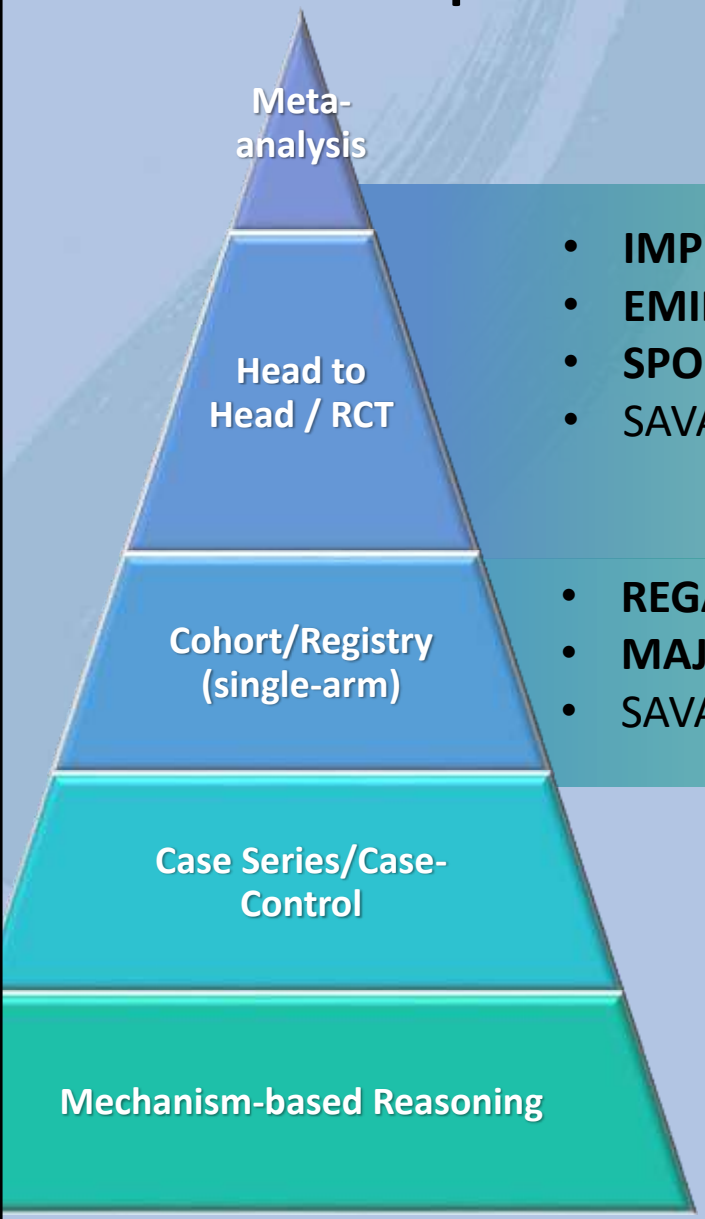
- Results from case studies are not necessarily predictive of results in other cases. Results in other cases may vary.

BSC Peripheral Drug Elution Clinical Program



	DES	DCB
Head to Head / RCT	• **IMPERIAL RCT N=465** • **EMINENT N=750** • **SPORTS* N=222** • SAVAL RCT N=201	• **RANGER SFA (FIH) N=105** • **RANGER II SFA N=376** • **COMPARE* N=414** • DCB in Crural Arteries* N=70 • **JET-RANGER* N=255**
Cohort/Registry (single-arm)	• **REGAL N=500** • **MAJESTIC N=57** • SAVAL single-arm N=100	• **RANGER SFA Registry* N=172** • **Ranger China N=123** • RANGER-BTK* N=30

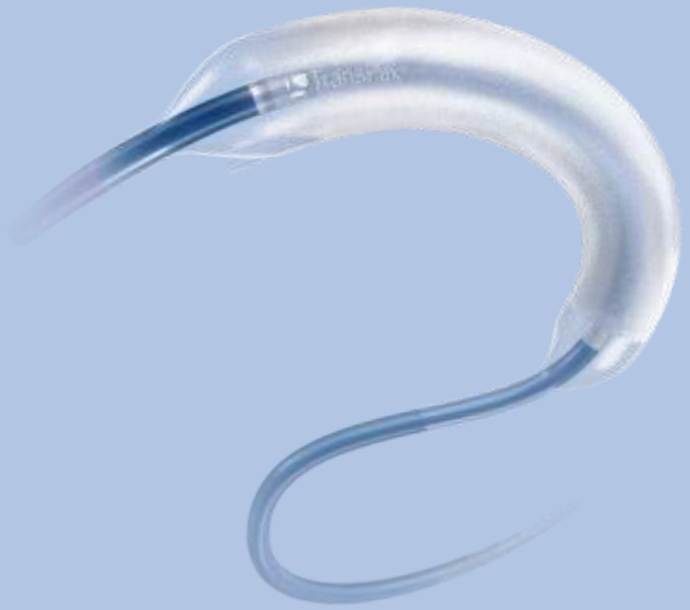
More than 3800 patients in >15 countries

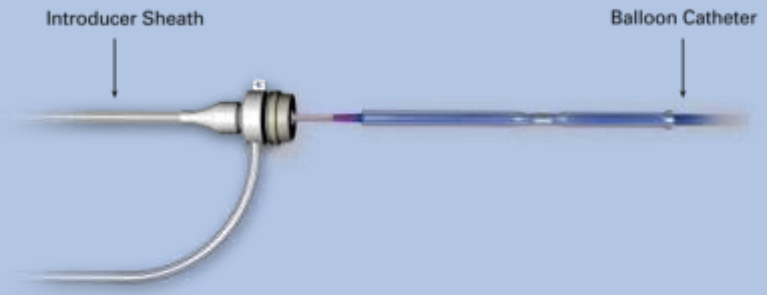
SFA
BTK

*Investigator Sponsored Research. These investigator-sponsored studies are supported by grant funding from Boston Scientific. Boston Scientific is not responsible for the collection, analysis or reporting of these studies which remain the sole responsibility of the investigators. Information for the use in countries with applicable product registrations. Ranger DCB is an investigational device and not available for sale in the US.

Boston Scientific Ranger™

- Sterling balloon platform
- TransPax™ coating technology
  - Paclitaxel 2 µg/mm^2
- Ranger™ DCB Loading Tool
  - Designed to protect the drug coating
- Size matrix:
  - SFA: 4-8 mm; 30-200 mm
  - BTK: 2-4 mm; up to 150 mm





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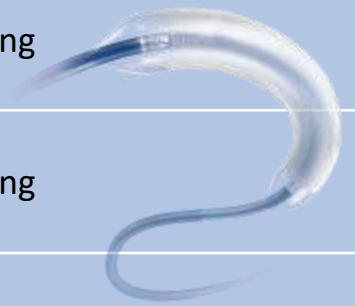
BSC Peripheral DCB Clinical Program

COMPARE I*	**Multicenter, RCT 1:1** (Ranger : In.Pact)	**N = 414**		Pilot N=150 24M complete. N=414 Enrollment complete.
RANGER SFA (FIH)	**Multicenter, RCT 2:1** (Ranger : PTA)	**N = 105**		12M follow up complete
Ranger SFA Registry*	**Multicenter, registry**	**N = 172**		12M follow up complete
Ranger II Global Pivotal	**Multicenter, RCT 3:1** (Ranger : PTA)	**N = 376**		Enrollment complete
Ranger DCB China	**Multicenter, single-arm**	**N = 123**		Enrolling
RANGER-BTK*	**Single center, single-arm**	**N = 30**		6M follow up complete
DCB vs PTA in CLI and Crural Arteries*	**Single center, RCT 1:1** (Ranger : PTA)	**N = 70**		Enrolling
DCB Venoplasty in AV Fistula Stenosis (DeVA)*	**Multicenter, RCT 1:1** (Ranger : PTA)	**N = 186**		Enrolling



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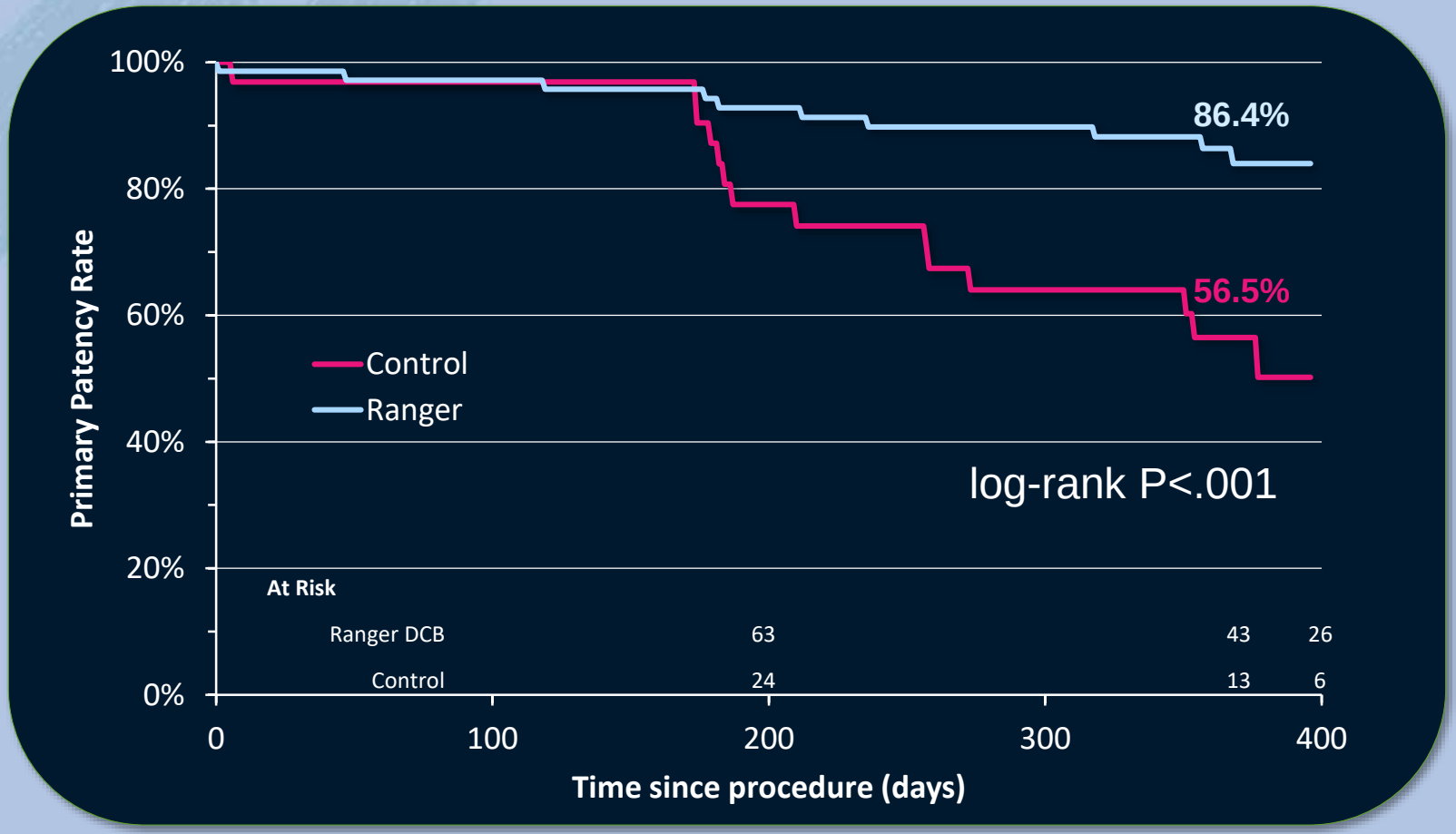
RANGER SFA

Primary Patency – 12 Months

- Kaplan Meier estimate of primary patency rate at 12 months:
  - 86.4% Ranger DCB vs 56.5% Control



Steiner S, et al. JACC: Cardiovascular Interventions, 2018, Available online 2 May 2018. http://dx.doi.org/10.1016/j.jcin.2018.01.276.

Primary patency defined as the percentage of lesions without a hemodynamically significant stenosis on duplex ultrasound (PSVR > 2.4) and without TLR or bypass of the target lesion.

RANGER SFA

Safety Summary – 12 Months

- Significantly lower TLR rate for Ranger DCB than control (P=0.030)
- No target limb amputations
- 3 deaths by 1 year of follow up (1 control, 2 Ranger)
  - None related to the device or procedure

	Control	Ranger DCB	P
Target limb amputation	0	0	1
TLR	26% (9/34)	8.5% (6/71)	0.030
Related death	0	0	1
All-Cause Death	2.9% (1/34)	2.8% (2/71)	1
Cardiac	2.9% (1/34)	1.4% (1/71)	0.545
Vascular	0.0% (0/34)	0.0% (0/71)	1
Non-Cardiovascular	0.0% (0/34)	1.4% (1/71)	1

TLR, target lesion revascularization

Steiner S, et al. JACC: Cardiovascular Interventions, 2018. http://dx.doi.org/10.1016/j.jcin.2018.01.276.

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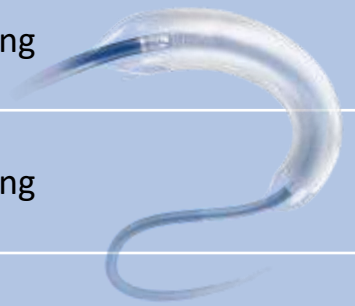

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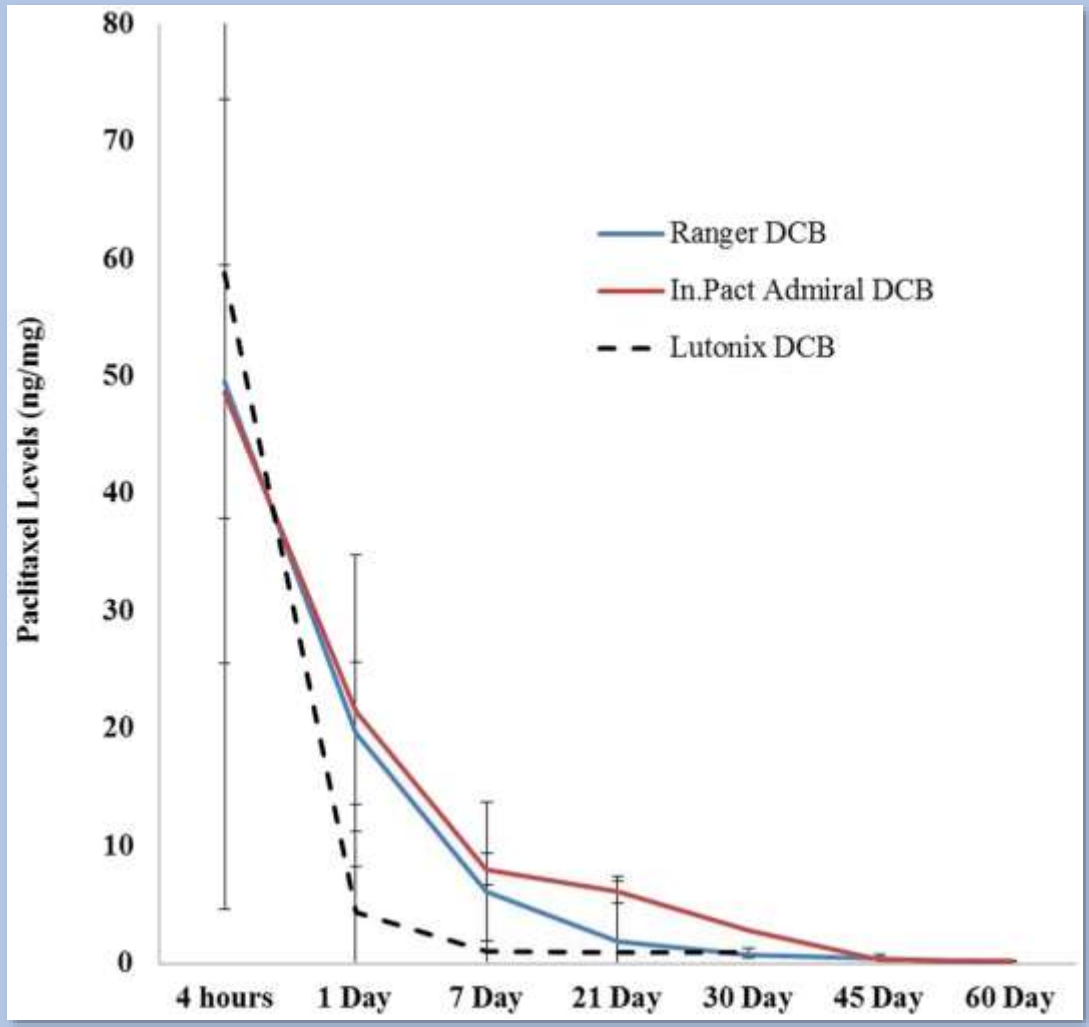
COMPARE

Clinical Study Overview		
Title	Prospective, Randomized, Multi-center Study for the Treatment of Subjects with Symptomatic Femoropopliteal Artery Disease with the Ranger™ Paclitaxel Coated PTA Balloon Catheter (study arm) vs. the IN.PACT™ Drug Eluting Balloon (control arm)	
Primary Investigator / Sponsor	Dierk Scheinert, MD University of Leipzig – Leipzig, Germany	
Objective	To compare two different Paclitaxel coated balloons in the treatment of high grade stenotic or occluded lesions in the SFA and/of PPA	
Study Design	**Prospective, multicenter, RCT 1:1 (Ranger DCB : InPact DCB)**	
Devices	**Ranger Drug-coated Balloon** Paclitaxel 2 µg/mm^2	**In.Pact Drug-coated Balloon** Paclitaxel 3.5 µg/mm^2
Subjects	**COMPARE Pilot**	**COMPARE I**
	N=150 (2-year follow-up 2019)	N=414 (Enrollment complete)
Investigational Centers	15 centers in Germany	

DCB Pharmacokinetics

- Consistent drug tissue levels for Ranger™ achieved with 2 µg/mm² vs In.Pact (3.5 µg/mm²) up to 60 days in the superficial femoral artery territory of the swine
  - In.Pact, 3.5 µg/mm²
  - Ranger, 2 µg/mm²
  - Lutonix, 2 µg/mm²



Gongora CA, et al. JACC Cardiovasc Interv. 2015;8(8):1115-1123. Preclinical results may not necessarily be indicative of clinical outcomes.
Ranger DCB is an investigational device and not available for sale in the US. Lutonix ™ Drug Coated Balloon Catheter is a trademark of C.R. Bard Inc. IN.PACT ™ is a trademark of Medtronic Inc.
Lutonix™Bard is co-distributed by Boston Scientific

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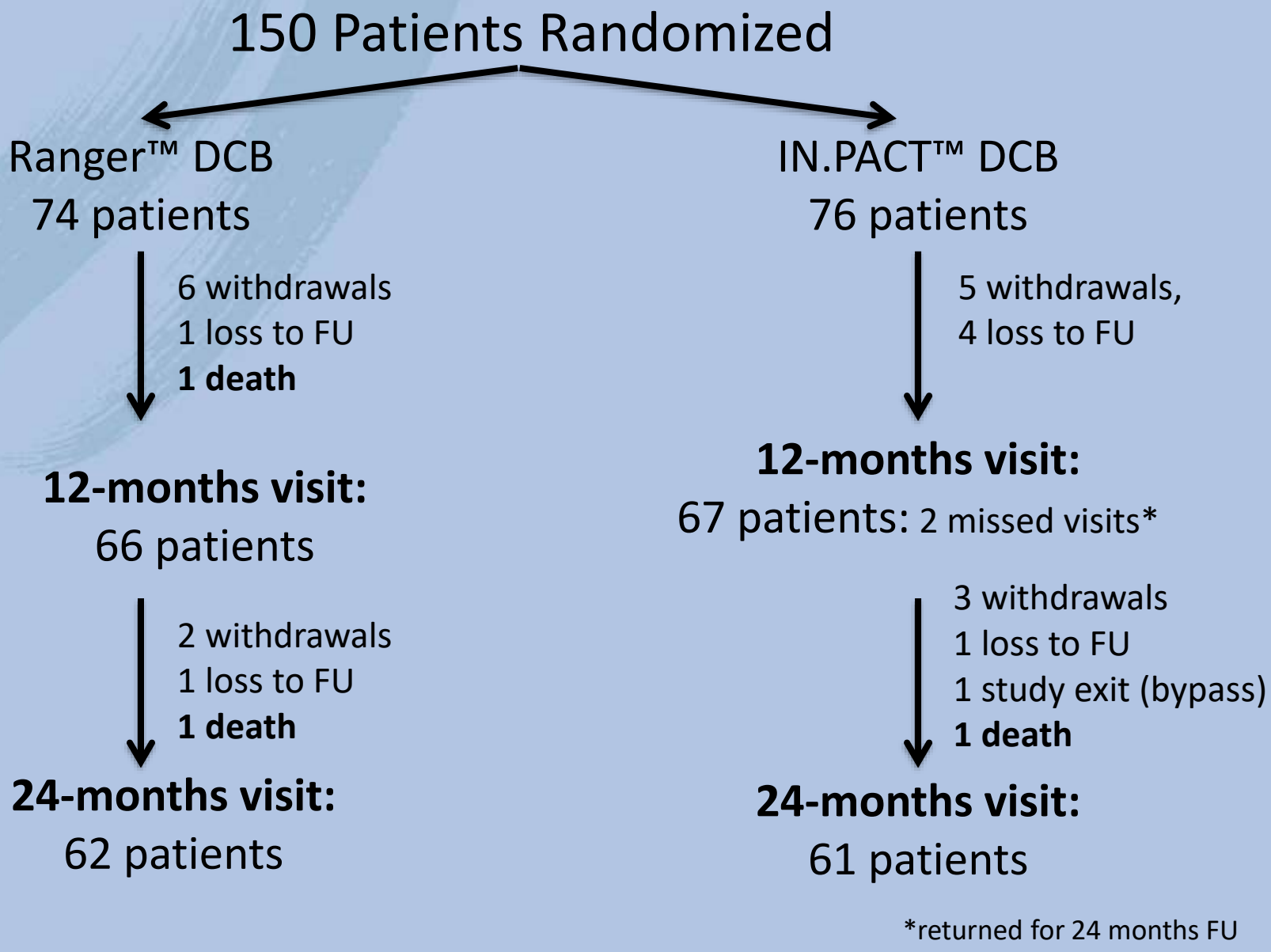
Subjects	**COMPARE Pilot** N=150 (2-year follow-up 2019)	**COMPARE I** N=414 (pilot roll in, enrollment complete)
Investigational Centers	15 centers in Germany	

Compare Pilot: Patient flow diagram



*returned for 24 months FU

Baseline Demographics of first 150pts

	RANGER DCB (n=74)	IN.PACT DCB (n=76)	p-value
Age, y	68.6±9.2	68.9±9.5	0.5
Male gender	44 (60%)	53 (70%)	0.2
Weight, kg	77.9±15.8	79.1±14.7	0.6
Prior myocardial infarction	11 (15%)	5 (7%)	0.2
Coronary artery disease	21 (29%)	21 (28%)	0.9
Cerebrovascular disease	12 (16%)	8 (11%)	0.3
Hyperlipidemia	50 (68%)	57 (75%)	0.3
Hypertension	65 (88%)	68 (90%)	0.8
Renal Insufficiency	12 (16%)	14 (18%)	0.6
Smoking			0.4
Current	32 (43%)	38 (50%)	
Previous	27 (37%)	20 (26%)	
Diabetes mellitus	25 (34%)	28 (37%)	0.7
Claudication (RC 2-3)	69 (93%)	71 (94%)	0.6
Critical limb ischemia (RC 4)	5 (7%)	5 (6%)	

Data are given as mean±SD or number (%).

Lesion Characteristics* of first 150pts

	RANGER DCB (n=74)	IN.PACT DCB (n=76)	p-value
Target lesion length, mm	117.4±100.4	122.3±91.2	0.8
Diameter stenosis, %	82.7±17.5	84.2±18.2	0.6
Reference vessel diameter, mm	4.9±0.6	5.0±0.8	0.3
Minimal vessel diameter, mm	0.8±0.9	0.8±1.0	0.9
Total occlusion	29 (39.2%)	34 (44.7%)	0.5
Total occlusion length, mm	110.9±95.1	94.8±87.9	0.5
Prox. popliteal involvement	14 (18.9%)	11 (14.5%)	0.2
Lesion calcification			0.7
None	8 (11.1%)	8 (10.7%)	0.7
Mild	21 (29.2%)	18 (24%)	
Moderate	1 (1.4%)	0 (0%)	
Moderately severe	25 (34.7%)	33 (44%)	
Severe	17 (23.6%)	16 (21.3%)	
0-1 patent run off vessels	20 (26.9%)	25 (32.9%)	0.6

* Per angiographic core lab assessment.
Data are given as mean±SD or number (%).

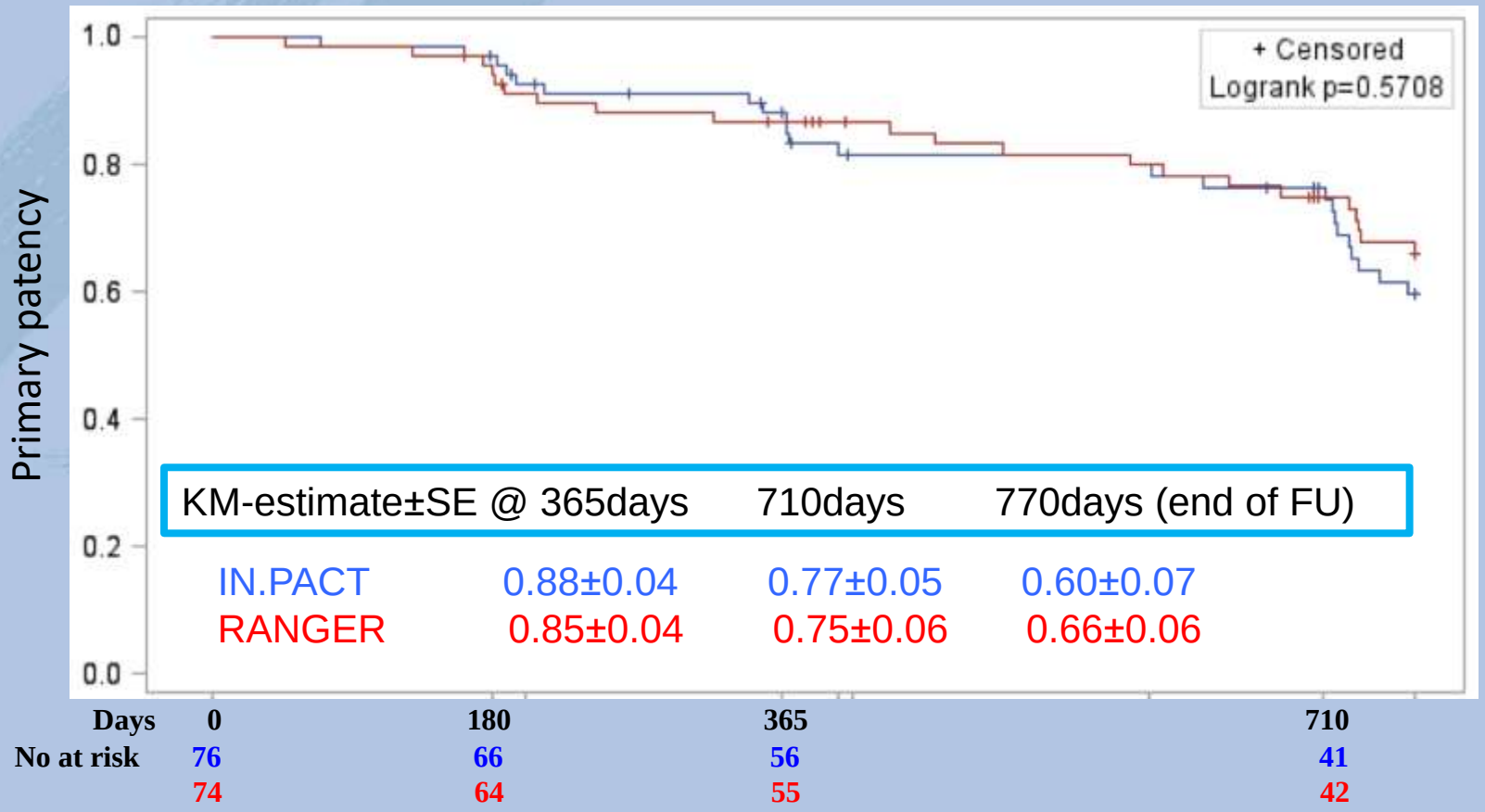
Procedural Outcomes* of first 150pts

	RANGER DCB (n=74)	IN.PACT DCB (n=76)	p-value
Bailout stent placement	19 (25.7%)	17 (22.4%)	0.6
MVD postprocedure, mm	3.6±0.6	3.7±0.8	0.6
Diameter stenosis postprocedure, %	25.8±11.6	26.0±14.6	0.9
Residual stenosis > 30%	26 (35.1)	29 (38.2)	0.7
Dissection	70 (92.1%)	70 (94.6%)	0.7
Type A/B, n (%)	54 (77.1%)	44 (62.8)	0.1
Type C-F, n (%)	16 (22.9%)	26 (37.2%)	
Complications			
Embolic event	2 (2.7%)	1 (1.3%)	
AV-Fistel (local)	5 (6.8%)	5 (6.6%)	
Target Vessel Perforation	1 (1.4%)	1 (1.3%)	

* Per angiographic core lab assessment.

Data are given as mean±SD or number (%).

Compare Pilot study (150 patients): Primary patency through 24 months



For KM-estimates, the study end was harmonized to 770 days for all events censored ≥710 days.

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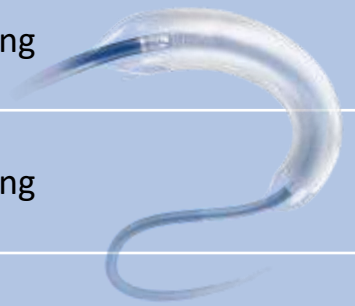

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RANGER II SFA Global Pivotal

Clinical Study Overview	Enrolled
Title	A 3:1 Randomized Trial Comparing the Boston Scientific RANGER Paclitaxel Coated Balloon vs Standard Balloon Angioplasty for the Treatment of Superficial Femoral Arteries (SFA) and Proximal Popliteal Arteries (PPA)
Primary Investigators	Global: Prof. Thomas Zeller, MD - Germany National: Ravish Sachar, MD, FACC – United States
Objective	Evaluate the safety and effectiveness of the RANGER™ Paclitaxel Coated Balloon for treating lesions located in the SFA and PPA
Study Design	• **Prospective, multicenter, single-blind, superiority, RCT 3:1 (RANGER DCB : Standard PTA)** • Concurrent, non-blinded, single-arm, pharmacokinetic (PK) sub-study
Subjects	**396 patients** • 376 patients into the randomized arm • 20 subjects in the non-randomized PK Sub-study
Investigational Centers	Up to 70 study centers in Canada, Europe (Austria, Belgium, Germany, Poland), Japan, New Zealand, and U.S.
Primary Efficacy Endpoint	**Primary Patency of lesion** • Determined by DUS and absence of clinically driven TLR
Primary Safety Endpoint	**Occurrence of MAEs** • All-cause death at 1 Month • TLR at 12 Months • Target limb major amputation at 12 Months

Conclusions

- The Ranger DCB clinical program is a robust series of randomized studies generating Level 1 evidence
- Similar 24-month primary patency for the low-dose Ranger DCB (2µg/mm^2) compared with the In.pact DCB (3.5µg/mm^2) in the COMPARE Pilot
- Awaiting results from COMPARE I (N=414) and RANGER II SFA (N=376)

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