Safety and Effectiveness of Drug-Coated Balloon Angioplasty versus Plain Balloon Angioplasty in the Infrapopliteal Arteries:

IN.PACT BTK Randomized Study 9-Month Primary Outcomes

Antonio Micari, MD

Invasive Cardiology, University of Messina

Messina, Italy

IN.PACT BTK Study*

Overview

Purpose: To assess the safety and effectiveness of the IN.PACT 014 paclitaxel-coated DCB versus conventional PTA for the treatment of CLI patients with chronic total occlusions (CTOs) in the infrapopliteal arteries

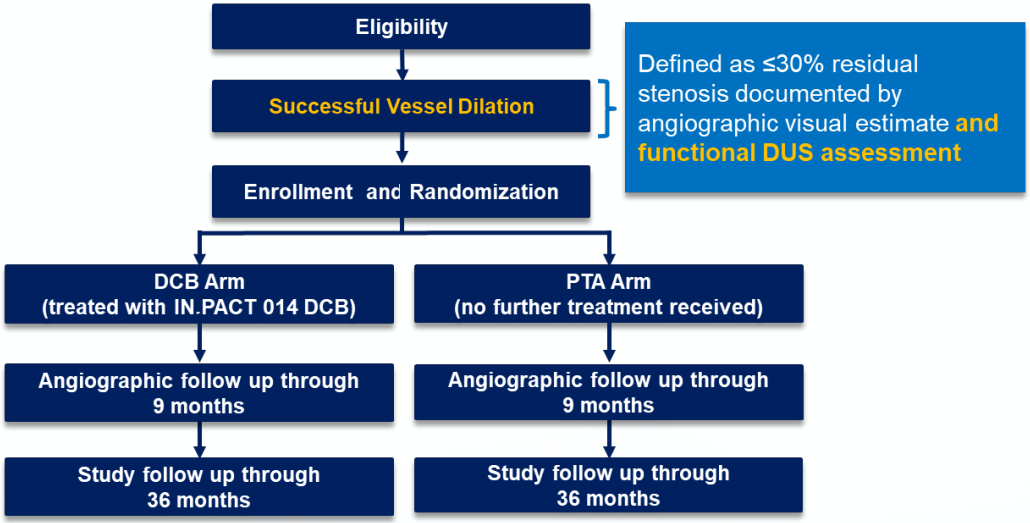
- Prospective, multicenter, randomized (1:1) feasibility study
- Independent Duplex Ultrasound Core Lab (DUS)[1], Angiographic Core Lab[2], Data Safety Monitoring Board and Clinical Events Committee (CEC)[3]
- 50 CLI patients with infrapopliteal CTOs enrolled in 9 sites across 5 European Countries and followed through 36 months[4] 
- No formal hypothesis test is specified for this feasibility study. Descriptive statistics will be reported.

*Sponsored by Medtronic plc

1. Vascore DUS Core Laboratory, Boston, MA, US
2. Beth Israel Deaconess Medical Center, Boston, MA, US
3. Data Safety Monitoring Board and Clinical Events Committee services provided by Syntactx, Belgium
4. Sponsor intends to extend follow-up through 60 months

IN.PACT BTK Study

Architecture and Endpoints



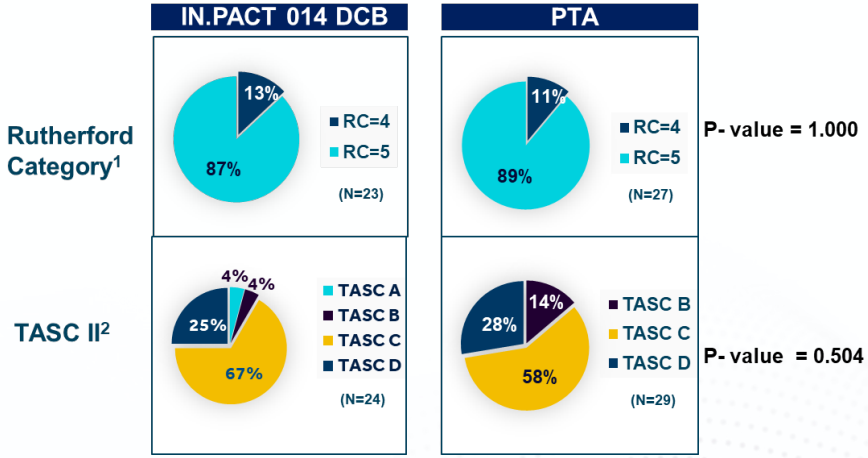
Effectiveness Endpoint	• Late Lumen Loss* (LLL) 9 months after the index procedure
Safety Endpoint	• Composite of 30-day freedom from device-and procedure-related mortality and freedom from major target limb amputation through 9-months and freedom from clinically-driven TLR through 9-months

*Prospectively measured using classic and subsegmental LLL measurements

IN.PACT BTK Study

Baseline Clinical Characteristics

	IN.PACT 014 DCB (N=23 Subjects)	PTA (N=27 Subjects)	P-value
Age (years) mean ± SD	73.1 ± 7.4	69.6 ± 9.4	0.107
Male % (n)	82.6% (19/23)	74.1% (20/27)	0.515
Obesity (BMI ≥ 30 kg/m^2) % (n)	22.7% (5/22)	26.9% (7/26)	1.000
Hypertension % (n)	82.6% (19/23)	77.8% (21/27)	0.736
Hyperlipidemia % (n)	72.7% (16/22)	80.0% (20/25)	0.732
Diabetes Mellitus % (n)	73.9% (17/23)	96.3% (26/27)	0.039
Insulin Treated % (n)	39.1% (9/23)	74.1% (20/27)	0.021
Current smoker % (n)	17.4% (4/23)	11.5% (3/26)	0.692
Ischemic Heart Disease % (n)	43.5% (10/23)	34.6% (9/26)	0.569
Bilateral PAD % (n)	54.5% (12/22)	63.6% (14/22)	0.760
Previous Target Limb Peripheral Revascularization % (n)	30.4% (7/23)	33.3% (9/27)	1.000
Previous Target Limb Minor Amputation % (n)	13.0% (3/23)	40.7% (11/27)	0.056



1. Site reported
2. Core lab reported

IN.PACT BTK Study

Baseline Lesion Characteristics

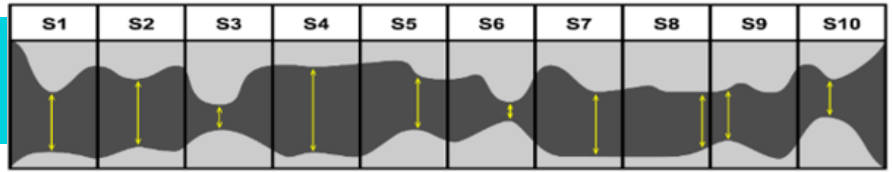
Lesion Characteristics[1]	IN.PACT 014 DCB (N=23 Subjects N=24 Lesions)	PTA (N=27 Subjects N=29 Lesions)	P-value
Inflow in the Target Vessel < 30% RS (subject level), %(n)	90.0% (18/20)	87.5% (21/24)	1.000
Lesion Length (mm ± SD)	215.41 ± 83.81	218.19 ± 80.43	0.806
Total Occluded Lesion Length (mm ± SD)	159.00 ± 84.66	136.43 ± 72.82	0.353
Diameter Stenosis (% ± SD)	97.59% ± 6.69	96.33% ± 8.64	0.473
Reference Vessel Diameter (mm ± SD)	2.80 ± 0.54	2.71 ± 0.39	0.835
Minimum Lumen Diameter (mm ± SD)	0.06 ± 0.19	0.09 ± 0.21	0.511
Calcification %(n)	54.1% (13/24)	41.4% (12/29)	0.410
Mod/Severe and Severe[2] %(n)	41.6% (10/24)	27.6% (8/29)	--

1. Lesion characteristics are core lab reported
2. Dattilo, R; *J Invasive Cardiol* 2014;26(8):355360

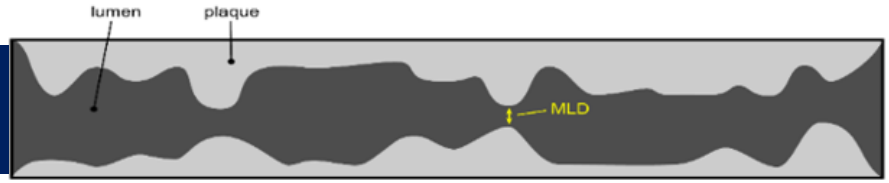
IN.PACT BTK Study

9-Month Effectiveness Outcomes

Sub-Segmental
lesion divided in 10 equal segments



Classic



Segmental measurements along the entire lesion allow for better assessment of late lumen loss compared to measurement at one single point in the lesion.

9-Month Angiographic Outcome[1]	IN.PACT 014 DCB (N=23 Subjects N=24 Lesions)	PTA (N=27 Subjects N=29 Lesions)	P-value
Sub-Segmental Late Lumen Loss[2] (Mean mm ± SD)	**0.59 ± 0.94**	**1.26 ± 0.81**	**0.017**
Classic Late Lumen Loss (Mean mm ± SD)	**0.89 ± 0.77**	**1.31 ± 0.72**	**0.070**

1. Beth Israel Deaconess Angiographic Core Lab, Boston, MA, USA
2. Sub-segmental late lumen loss is the average of late lumen loss for each of the 10 sub-segments. Late Lumen Loss defined as the difference between minimum lumen diameter (MLD) immediately after index procedure and minimum lumen diameter at follow up. (MLD Post Procedure – MLD Follow Up).

IN.PACT BTK Study

9-Month Safety Outcomes

9-Month Safety Outcomes	IN.PACT 014 DCB (N=23 Subjects)	PTA (N=27 Subjects)	P-value
Safety Composite Endpoint[1] %(n)	91.3% (21/23)	87.5% (21/24)	1.000
• Device- and Procedure-related Death through 30 Days %(n)	0.0% (0/23)	3.7% (1/27)	1.000
• Target Limb Major Amputation within 270 Days %(n)	0.0% (0/23)	0.0% (0/23)	>0.999
• Clinically-driven TLR within 270 Days %(n)	8.7% (2/23)	8.7% (2/23)	1.000
All-cause Death %(n)	4.3% (1/23)	8.0% (2/25)	1.000
Thrombosis at Target Lesion site %(n)	4.3%(1/23)	4.2% (1/24)	1.000

1. Safety composite endpoint consists of: Freedom from device- and procedure-related mortality within 30 days, freedom from major target limb amputation within 270 days and freedom from CD- TLR within 270 days.

Summary

- The IN.PACT 014 BTK DCB demonstrates effectiveness through 9 months compared to percutaneous transluminal angioplasty (PTA) in a complex population

Sub-segmental Late Lumen Loss	
0.59 mm (DCB)	P = 0.017
1.26 mm (PTA)	

Classic Late Lumen Loss	
0.89 mm (DCB)	P = 0.070
1.31 mm (PTA)	

- There were no safety concerns from the outcomes of the IN.PACT 014 BTK Study and results support consistency of full IN.PACT Clinical Program
  - Safety composite was 91.3% (DCB) compared to 87.5% (PTA)
  - No major amputations within 9 months in either arm
  - Low all-cause death 4.3% (DCB), 8.0% (PTA)

- This novel, randomized, feasibility study with a .014 BTK balloon utilizing the 3.5 µg/mm^2 IN.PACT drug formulation and enhanced study design provides opportunity to affect future BTK studies and treatment algorithms