INFINITY-SWEDEHEART

Percutaneous coronary intervention with a Bioadaptor compared to a contemporary Drug-eluting Stent (DES) in a large broad clinical population

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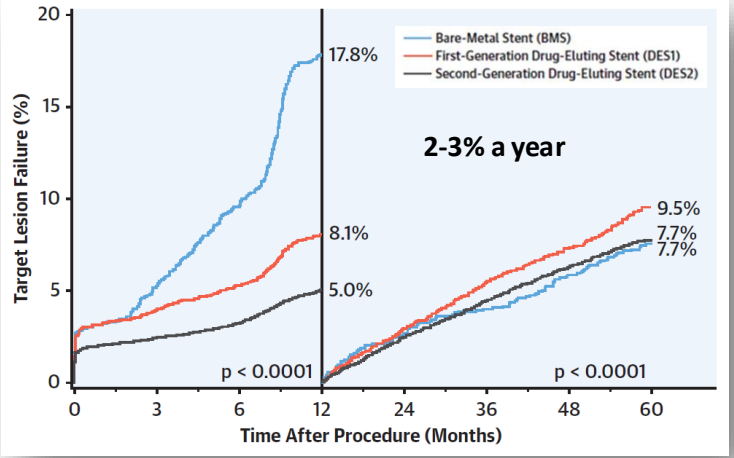
Disclosure

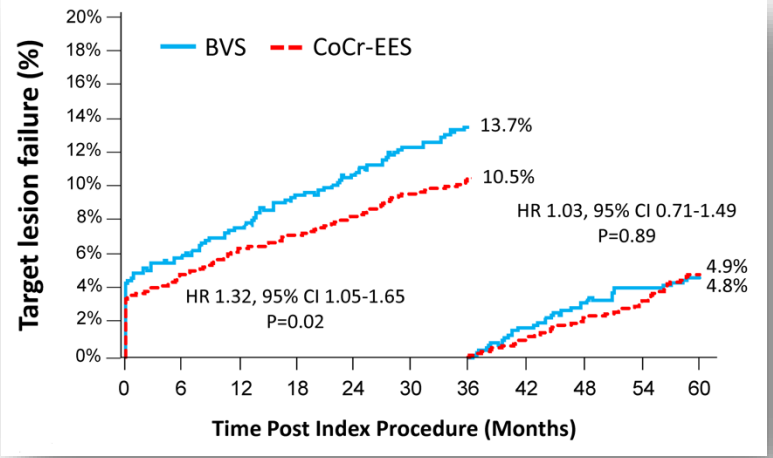
- David Erlinge has received honorarium for advisory board/speaker fees from Amgen, AstraZeneca, Chiesi, Sanofi, NovoNordisk, InfraredX/Nipro and Kaminari Medical.

Background

- Stent related adverse events continue to accrue after the first year at a non-plateauing rate of 2-3% a year, with no difference between 2nd generation DES, 1st generation DES and BMS[1].

- "Leave nothing behind" concept of Bioresorbable Scaffolds failed at improving short or long-term outcomes compared to DES, driven by poor acute performance and loss of long-term vessel dynamic support following scaffold resorption[2].



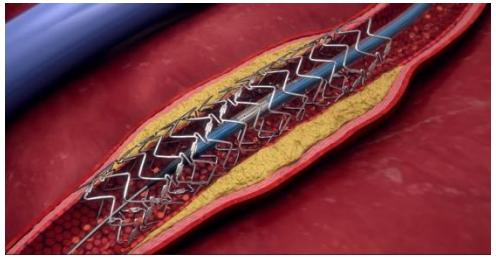


1. Madhavan MV et al. J Am Coll Cardiol 2020;75:590-604
2. Stone GW et al. Five-Year Clinical Outcomes After Coronary Bioresorbable Scaffolds and Drug-Eluting Stents: The ABSORB IV Randomized Trial. J Am Coll Cardiol 2023

Study Device: Bioadaptor Mechanism of Action

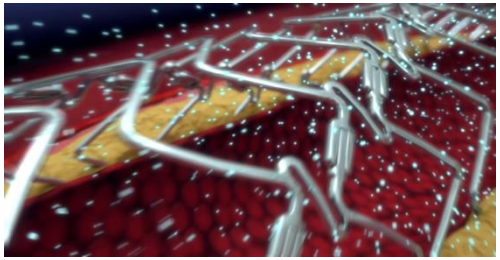
Bioadaptor (DynamX®, Elixir Medical, CA) is a novel technology designed to *restore hemodynamic modulation of the vessel.*

0 – 6 months | **after 6 months**



1. Locked:
Establish Flow Lumen

Restore flow and achieve high acute gain and low residual %DS[1,2]



2. Unlocked:
Maintain Flow Lumen

Restore adaptive remodeling and maintain low %DS[1,2]

3. Dynamic Support:
Restore Hemodynamic Modulation

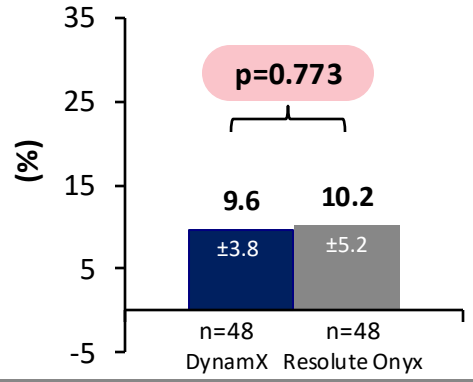
Restore pulsatility, compliance, adaptive coronary flow[1-3]

1. Saito S et al. 12-Months Outcomes BIODAPTOR-RCT. The Lancet eClinicalMedicine. 2023;65:102304.
2. Verheye S et al. Twelve-month clinical and imaging outcomes of the uncaging coronary DynamX bioadaptor system, *EuroIntervention 2020, 16*(12);E974
3. Kwak BR et al. Biomechanical factors in atherosclerosis: mechanisms and clinical implications. European heart journal. 2014 Nov 14;35(43):3013-20.

Study Device: Bioadaptor Mechanism of Action[1]

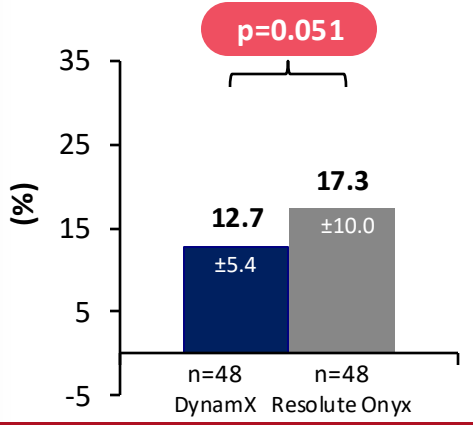
Results from the BIOADAPTOR-RCT imaging cohort

Post Procedure QCA: Low %Diameter Stenosis



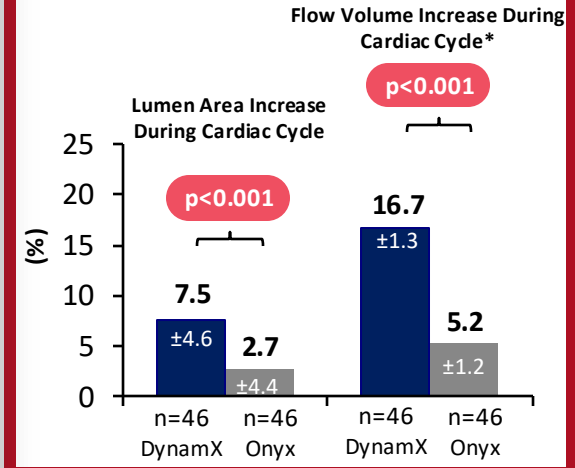
Establish Flow Lumen

1-Year QCA: Lower % Diameter Stenosis



Maintain Flow Lumen

1-Year IVUS: Restored Pulsatility and Adaptive Coronary Flow Volume



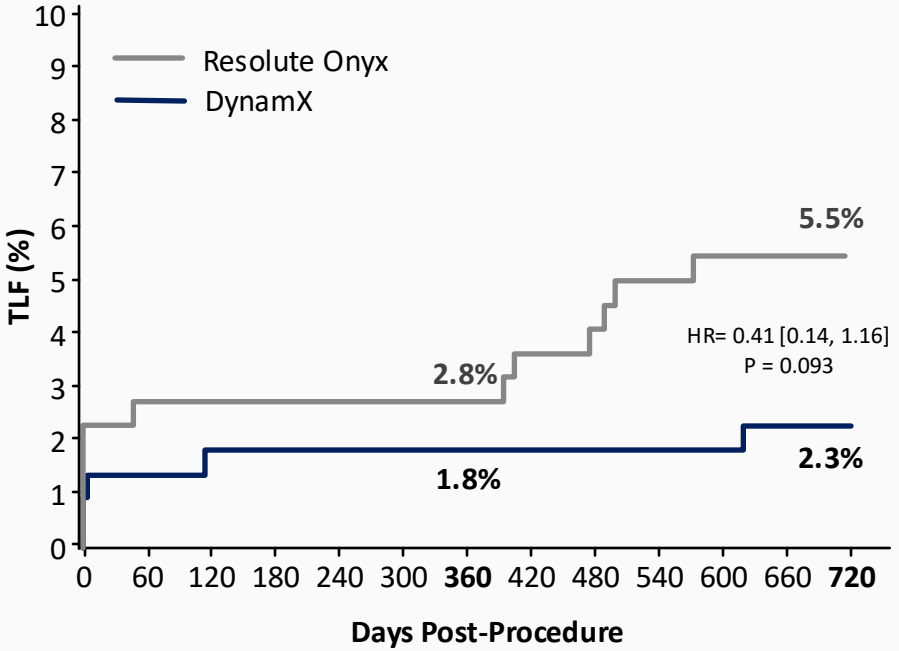
Restore Hemodynamic Modulation

* Estimated by Hagen-Poiseuille flow equation

1. Saito S et al. 12-Months Outcomes BIODAPTOR-RCT. The Lancet eClinicalMedicine. 2023;65:102304.

BIOADAPTOR-RCT Demonstrated Events Plateau After 6 Months

- 12- and 24-month results from BIOADAPTOR RCT (n=445) demonstrated safety and efficacy of DynamX bioadaptor and established benchmarks in restoring vessel function
  - TLF primary endpoint at 12 months was met (p<0.001 for non-inferiority)[1]
  - Reduction and plateauing in TLF, TVF through 2 years[2]
  - Statistically significantly lower %DS and LLL versus DES, and uniquely demonstrated pulsatility in intravascular imaging endpoints[1]
  - Novel finding of plaque stabilization and regression[1]

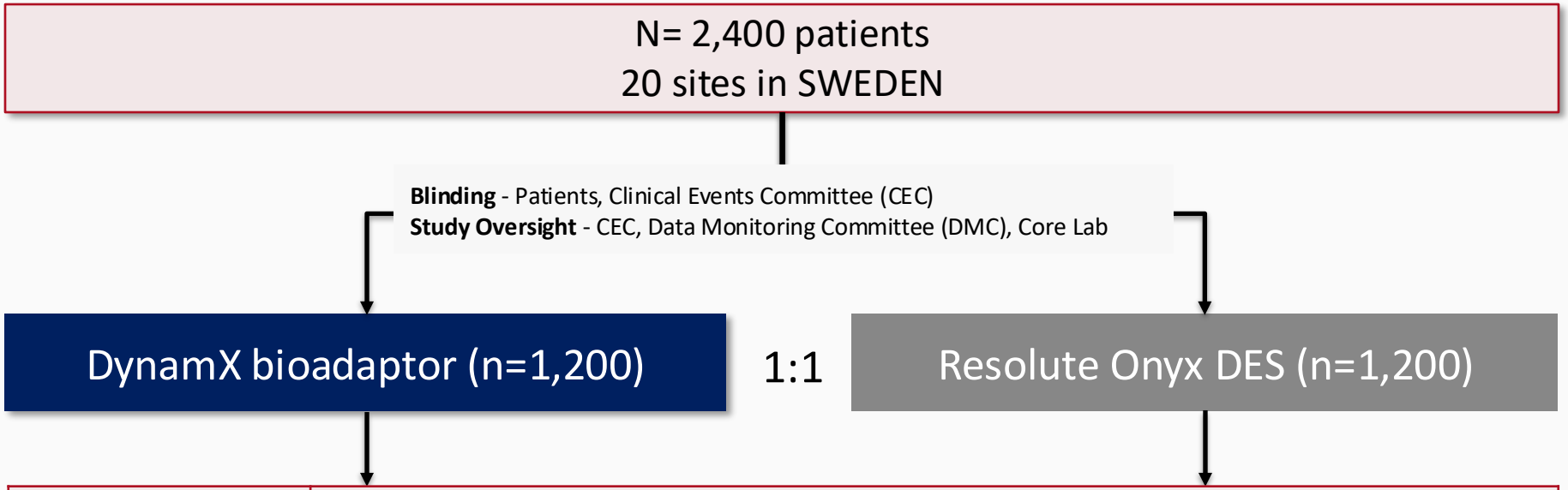


1. Saito S et al. 12-Months Outcomes BIODAPTOR-RCT. The Lancet eClinicalMedicine. 2023;65:102304.
2. Saito S. BIOADAPTOR-RCT 24-month Clinical Outcomes. EuroPCR 2024

INFINITY-SWEDEHEART RCT Objectives

- To evaluate the safety and efficacy of the DynamX bioadaptor compared to the Resolute Onyx in a large multi-center RCT in a broad patient population representative of every day clinical practice, including patients with Acute Coronary Syndrome (ACS)
- To evaluate the effect of the mechanism of action of restoring hemodynamic modulation in a pre-specified landmark analysis at 6 months and thereafter, powered for superiority

INFINITY-SWEDEHEART Randomized Controlled Trial



Primary endpoint	**TLF at 1 year (non-inferiority)**
Powered secondary endpoints	1. Landmark analysis of TLF from 6 months to End of Follow-up 2. Landmark analysis of TVF from 6 months to End of Follow-up

Study Management and Site Enrollment

» Study/Site Management, Data Mgmt., Statistics, CEC, DSMB

» Imaging Core Lab

PI	Hospital Name	# Enrolled
Jonas Andersson, MD, PhD	Norrland University Hospital, Umeå	316
Stefan James, MD, PhD	Uppsala University Hospital	275
David Erlinge, MD, PhD	Skåne University Hospital, Lund	221
Ole Fröbert, MD, PhD	Örebro University Hospital	215
Mattias Törnerud, MD	Danderyd Hospital, Stockholm	198
Mehmet Hamid, MD	Mälarsjukhuset, Eskilstuna	170
Thomas Kellerth, MD	Karlstad Hospital	146
Per Grimfjärd, MD, PhD	Västmanland hospital, Västerås	133
Daniel Ohm, MD	Capio S:t Göran Hospital	107
Carl-David Dolata, MD	Helsingborg Hospital	84

PI	Hospital Name	# Enrolled
Sammy Zwackman, MD	Linköping University Hospital	81
Juliane Jurga, MD, PhD	Karolinska University Hospital, Huddinge	76
Martin Adielsson, MD	Halland Hospital, Halmstad	69
Patrik Alström, MD	Södersjukhuset, Stockholm	67
Elli Masoe, MD	Sundsvall Hospital	57
Juliane Jurga, MD, PhD	Karolinska University Hospital, Solna	49
Anders Ulvenstam, MD, PhD	Östersund Hospital	48
Jonas Millgård, MD, PhD	Sunderby Hospital	44
Maria Tafesse, MD	Blekinge Hospital, Karlskrona	29
Mats Birgander, MD, PhD	Skåne University Hospital, Malmö	15

Key Inclusion and Exclusion Criteria

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KEY INCLUSION

- Patient age ≥ 18 and ≤ 85 years
- **Patients with CCS or ACS indicated for PCI with stent implantation**
- Successful pre-dilation of at least 1 Target Lesion
- **Maximum of 3 Lesions may be treated**
  - Up to 3 Target Lesions, or
  - Up to 2 Target Lesions and 1 Non-Target Lesion, which must be without complications prior to randomization
- Target Lesion vessel diameter and lesion length suitable for implantation with either study device

KEY EXCLUSION

- Life expectancy < 2 years
- Prior PCI in the target vessel within 12M
- AMI with Killip class III/IV
- Chronic heart failure with LVEF < 30%
- On renal dialysis or with known eGFR < 30 ml/min
- **Lesions in the Left Main artery**
- **Venous or arterial bypass grafts**
- **In-stent restenosis**
- **Chronic total occlusion**
- **Lesions < 3 mm from ostium**

Patient Baseline Characteristics

Baseline Characteristics	DynamX (N=1,201)	Resolute Onyx (N=1,198)
Age, years	68.2 ± 9.7	68.1 ± 9.6
Female	290 (24.1%)	285 (23.8%)
Hypertension	722 (60.5%)	710 (59.9%)
Hyperlipidemia	544 (45.6%)	492 (41.5%)
Diabetes Mellitus	231 (19.3%)	198 (16.6%)
Prior MI	144 (12.1%)	141 (11.9%)
Prior PCI	176 (14.7%)	165 (13.9%)
Prior CABG	12 (1.0%)	8 (0.7%)
Current Smoking	164 (14.2%)	187 (16.1%)

Clinical Presentation	DynamX (N=1,201)	Resolute Onyx (N=1,198)
Acute Coronary Syndrome (ACS)	**925 (77.0%)**	**913 (76.2%)**
STEMI	282 (23.5%)	317 (26.5%)
NSTEMI	458 (38.1%)	437 (36.5%)
Unstable Angina	185 (15.4%)	159 (13.3%)
Chronic Coronary Syndrome (CCS)	**276 (23.0%)**	**285 (23.8%)**

Baseline Lesion Characteristics

Baseline Characteristics	DynamX (N=1,201) (L=1,419)	Resolute Onyx (N=1,198) (L=1,431)
Number of target lesions per subject, n (%)		
1	1009 (84.1%)	987 (82.6%)
≥2	191 (15.9%)	208 (17.4%)
Target Lesion Location		
LAD	726 (51.2%)	728 (50.9%)
RCA	365 (25.7%)	384 (26.8%)
LCx	327 (23.0%)	318 (22.2%)
Lesion Classification		
A	160 (11.3%)	170 (11.9%)
B1	639 (45.0%)	666 (46.5%)
B2/C	609 (42.9%)	590 (41.2%)

Baseline Characteristics	DynamX (L=1,419)	Resolute Onyx (L=1,431)
RVD, mm	3.2 ± 0.5	3.2 ± 0.5
Lesion Length, mm	**24.4 ± 9.1**	**24.7 ± 9.4**
%DS, pre-procedure	**87.0 ± 12.1**	**87.3 ± 11.7**
%DS, post-procedure	**1.0 ± 5.4**	**0.6 ± 3.5**
Successful pre-dilation	1413 (99.7%)	1429 (99.9%)
Post-dilation	819 (58.5%)	764 (52.9%)

Procedural Outcomes – Acute Success

Endpoint	DynamX Subjects: 1,200 Lesions: 1,419	Resolute Onyx 1,195 1,431
Procedure Success* (Subject level), n (%)	1,193 (99.5%)	1,193 (99.8%)
Device Success** (Lesion level), n (%)	1,411 (99.6%)	1,429 (99.9%)

*Procedure success: lesion success without TLF events during index hospitalization (thru maximum of 7 days)
**Device success: % diameter stenosis after implantation of allocated study device <50%

Primary Endpoint - Target Lesion Failure at 12 Mos

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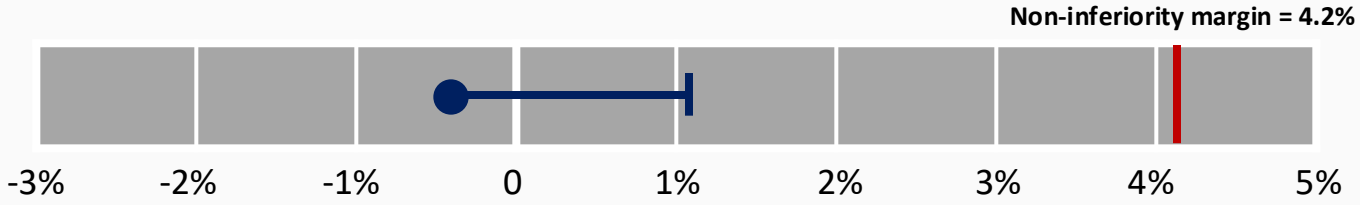
Primary Non-Inferiority Endpoint Met

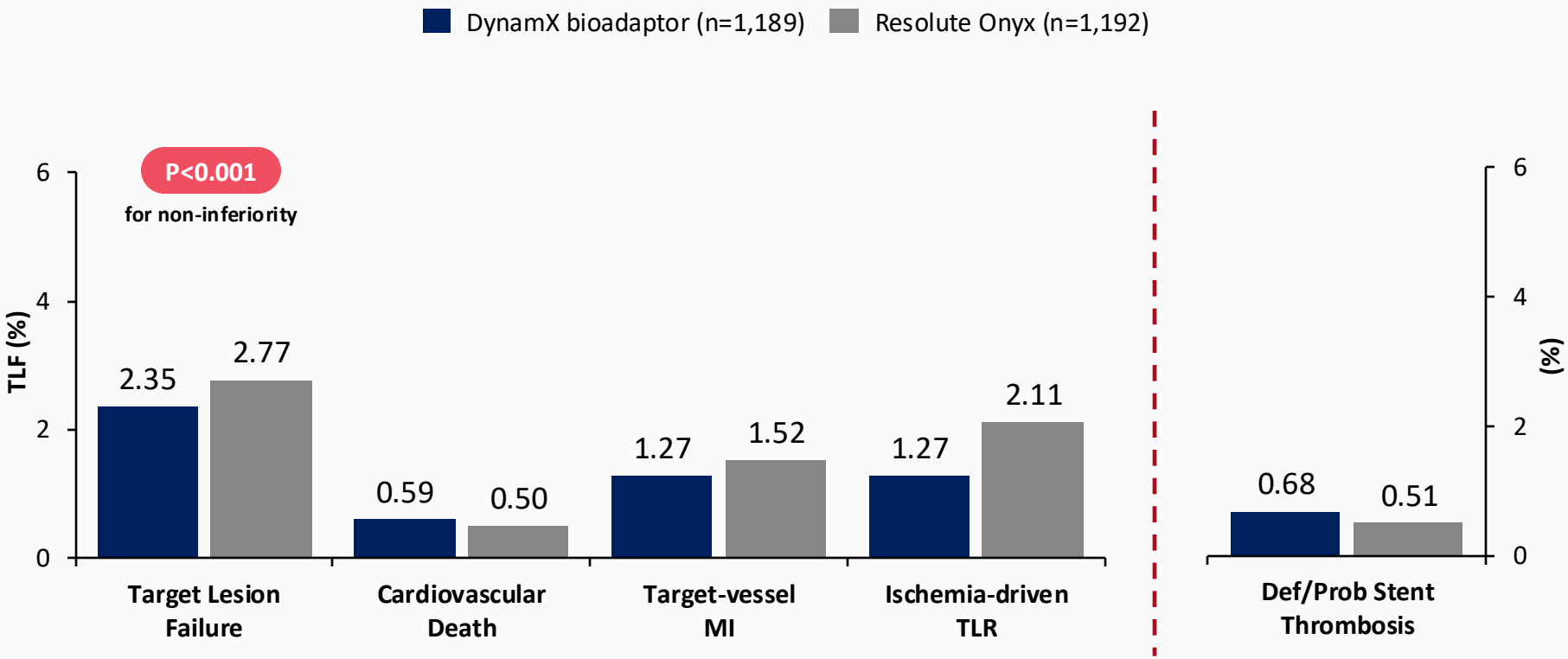
DynamX
(N=1,189)
2.35%

p-value <0.001
Difference: - 0.41%
[-1.94%, 1.11%]

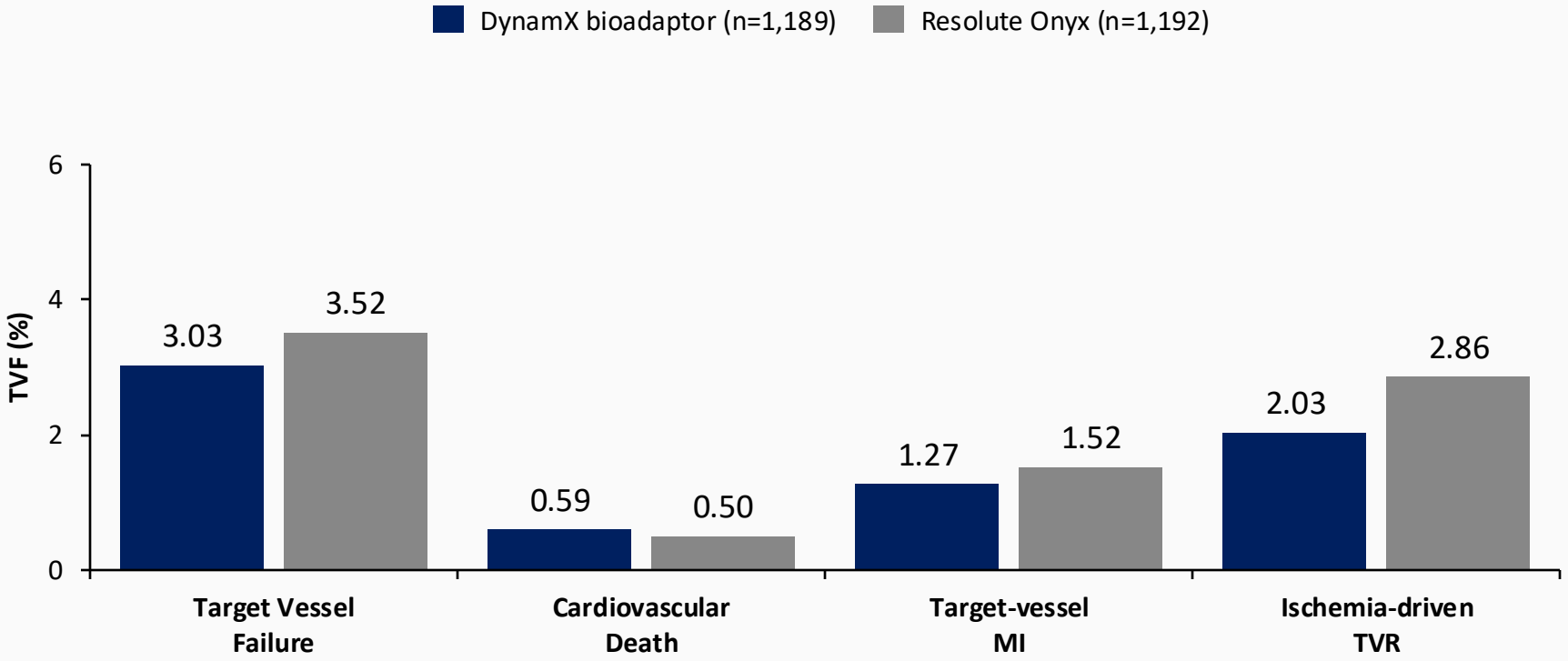
Resolute Onyx
(N=1,192)
2.77%



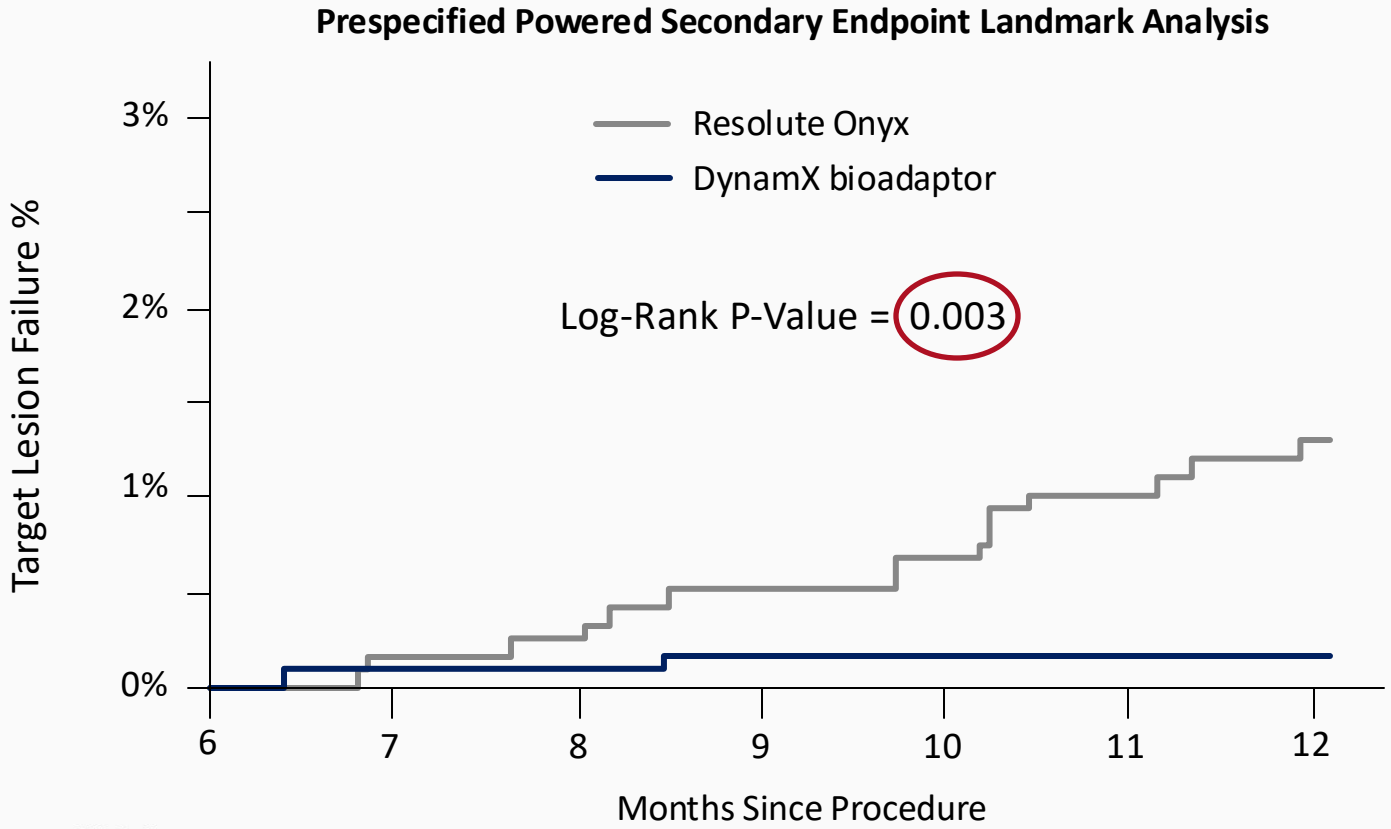
TLF and Components, Stent Thrombosis at 12 Mos



Target Vessel Failure and Components at 12 Mos



Significant Reduction and Plateau in TLF Events After 6 Mos



Favorable Reduction in CVD, TV-MI, ID-TLR After 6 Mos

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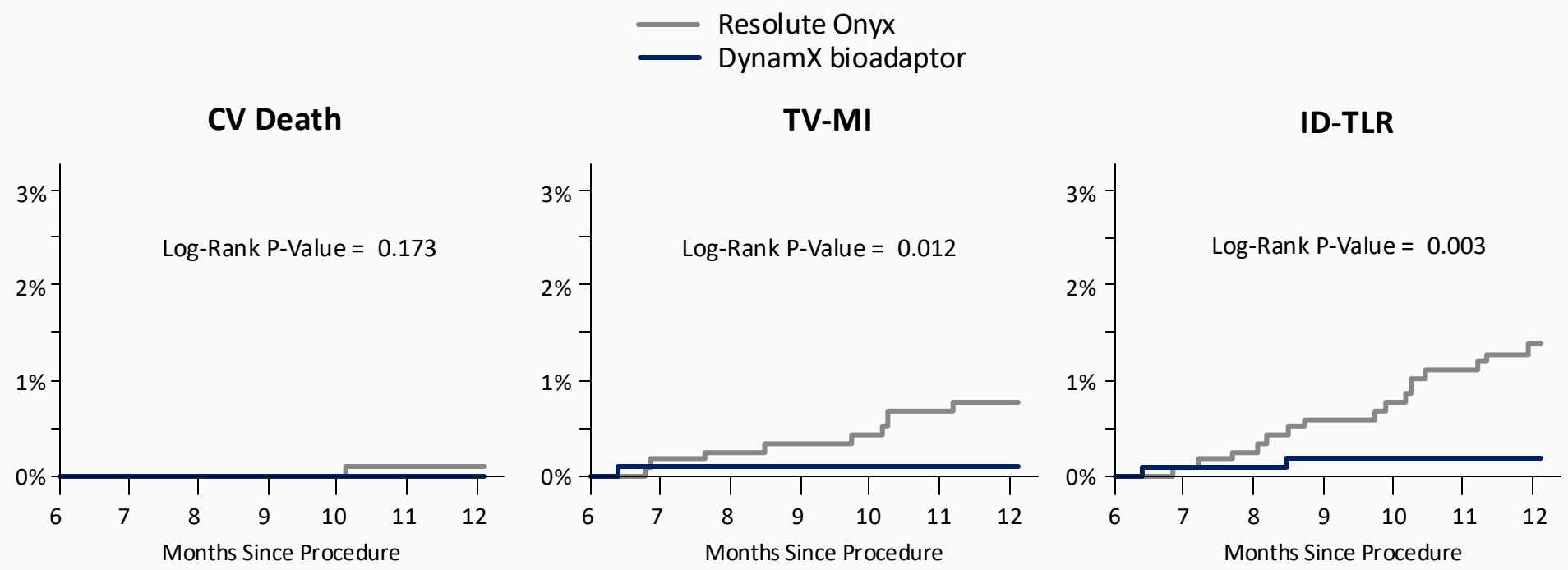
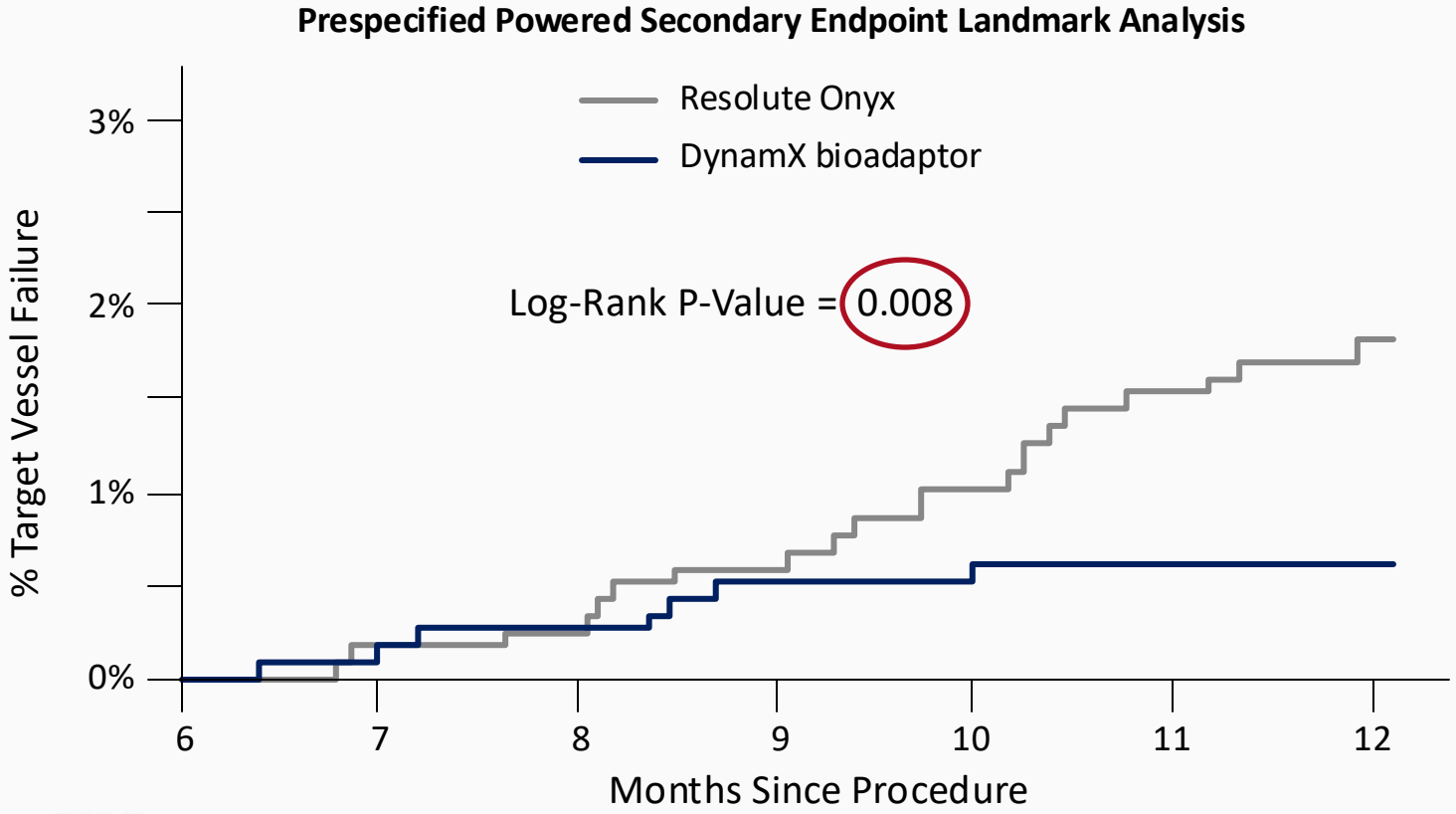
Prespecified Powered Secondary Endpoint Landmark Analysis



Significant Reduction and Plateau in TVF Events After 6 Mos



Conclusions

- In this large RCT enrolling a broad, clinically complex patient population:
  - **Primary endpoint of TLF non-inferiority was met**: 2.35% versus 2.77% at 12 months (p<0.001)
  - Despite a large proportion of ACS, a **low rate of TV-MI and ID-TLR ischemic events**
- **Significant reduction in TLF (p=0.003) and TVF (p=0.008) after 6 months** in prespecified landmark analyses, driven by reduction in all components
- **INFINITY-SWEDEHEART is the largest RCT to confirm consistency of low and plateauing adverse event rates** versus DES after the unlocking of the Bioadaptor at 6 months
- **These results confirm the novel impact of the Bioadaptor in CAD treatment** through its unique mechanism of action of restoring the hemodynamic modulation of a diseased artery