TRYTON Medical
BUILT FOR BIFURCATION
Side Branch Stent
Instructions for Use

TRYTON Side Branch Stent Mounted on Standard Balloon Delivery Catheter **and**
TRYTON Side Branch Stent Mounted on Stepped Balloon Delivery Catheter

CAUTION: U.S. Federal Law restricts this device to sale by or on the order of a physician.
CAUTION: Sterile. Sterilized by irradiation. Nonpyrogenic. Single use only. Do not resterilize. Do not reuse. Do not use if package is open or damaged. Use prior to the "Use Before" date specified on the package. Store in a dry, dark, cool place.

Device Description

The TRYTON Side Branch Stent is balloon expandable vascular prosthesis. The TRYTON Side Branch Stent is a cobalt chromium stent provided pre-mounted on one of two balloon delivery catheters: Standard Stent Delivery System and Stepped Stent Delivery System. Both variants will utilize these Instructions for Use. Currently available products may be found in Table 1 below.

Figure 1: Schematic of TRYTON Side Branch Stent mounted on Stepped Stent Delivery System

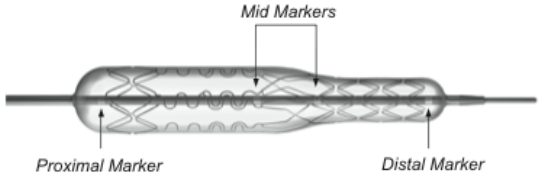


Table I: Stent Matrix

Reference	Proximal Diameter (mm)	Distal Diameter (mm)	Stent Length (mm)	Balloon Configuration	Strut Wall Thickness / Width (µm)	Guide Catheter compatibility
T5-2525-191-US	2.5	2.5	19	Straight	85 / 102	5F
T5-2530-191-US	3.0	2.5	19	Stepped	85 / 102	5F
T5-2535-191-US	3.5	2.5	19	Stepped	85 / 102	5F
T5-3035-181-US	3.5	3.0	18	Stepped	85 / 102	6F
T5-3540-181-US	4.0	3.5	18	Stepped	85 / 102	6F
T5-3035-151-US	3.5	3.0	15	Stepped	85 / 102	6F
T5-3540-151-US	4.0	3.5	15	Stepped	85 / 102	6F

Indications

The TRYTON Side Branch Stent is indicated for improving the side branch luminal diameter of de novo native coronary artery bifurcation lesions (Medina Classification 1.1.1; 0.1.1; 1.0.1) with a side branch diameter stenosis of ≥50% and a lesion length ≤5.0 mm, along with reference vessel diameters ≥2.5 mm to ≤3.5 mm in the side branch and ≥2.5 mm to ≤4.0 mm in the main branch.

The device is intended for use in conjunction with commercially available balloon expandable drug-eluting coronary stents in the main branch.

Contraindications

The TRYTON Side Branch Stent is contraindicated in the following conditions or uses:

- Vessels that are totally occluded
- Vessels that have moderate to severe calcification
- Target lesions that have excessive tortuosity unsuitable for stent delivery and deployment
- Angiographic evidence of thrombus in the target vessel
- Lesions in which complete angioplasty balloon inflation cannot be achieved during pre-dilatation
- TRYTON stent placement without angioplasty pre-dilatation of the main branch and side branch (i.e. direct stenting is contraindicated)
- TRYTON stent placement alone, without implantation of a main branch stent
- An untreated significant (>50%) stenosis proximal or distal to the main branch or side branch target lesion

- Impaired runoff in the treatment vessel with diffuse distal disease
- Ejection fraction ≤30%
- Impaired renal function (creatinine >2.0 mg/dl or 150mmol/l)
- Platelet count <100,000 cells/mm^3 or >700,000 cells/mm^3, a WBC of <3,000 cells/mm^3, or documented or suspected liver disease (including laboratory evidence of hepatitis)
- Presence of a heart transplant
- Known allergy to cobalt chromium
- Hypersensitivity or contraindication to cobalt-chromium or structurally-related compounds, cobalt, chromium, nickel, or tungsten
- Anticipated use of rotational atherectomy
- Patients in whom the use of a drug eluting stent is contraindicated, e.g., who cannot receive the recommended dual anti-platelet (aspirin and an approved P2Y12 Inhibitor) and/or anticoagulation therapy

Warnings

- Use of the TRYTON Side Branch Stent in appropriately sized main vessels and side branches is required for safe and effective performance of the device.
- Do not use the TRYTON Stent in small side branches [<2.50 mm in diameter by visual assessment or <2.25 mm in diameter by quantitative coronary angiography (QCA)], as its use may lead to an increased risk of adverse cardiac events such as myocardial infarction and the need for repeat revascularization. To confirm appropriately-sized side branch diameters, the diameter of the pre-dilation balloon inflated to nominal pressure may be used as a reference. Alternatively, the use of quantitative imaging methods such as on-line quantitative coronary angiography, intravascular ultrasound or optimal coherence tomography should be considered.

Use of the TRYTON Side Branch Stent, as with percutaneous coronary stent implantation procedures in general, is known to be associated with the following risks:

- Vessel thrombosis.
- Increased length of hospital stay relative to those of coronary balloon angioplasty alone. Judicious selection of patients to receive this device rather than balloon angioplasty alone is strongly advised.
- Infection secondary to contamination of the stent may lead to thrombosis, pseudoaneurysm or rupture.
- The stent may cause spasm, distal embolization, thrombus, or could migrate from the site of implantation. Excessive dilatation of the artery may cause vessel rupture and life-threatening bleeding.
- Stents may not be fully expanded during deployment, particularly in resistant lesions.
- Stent dislodgment from the balloon surface during deployment and/or dislodgment from the target site post-deployment can occur.
- Major bleeding.

Precautions

- Side branch pre-dilatation is required and should only be performed with an angioplasty balloon appropriate for a vessel ≥2.5 mm in diameter by visual assessment or ≥2.25 mm in diameter by QCA, inflated to nominal pressure.
- Following pre-dilation, angiography should be performed following the administration of intracoronary nitroglycerin to reassess vessel dimensions with attention to the side branch reference vessel diameter (RVD) to ensure that it is of appropriate size. The side branch RVD should be based on the most angiographic normal-appearing segment distal to the lesion.
- Use of this product should be performed only in hospitals with access to emergency coronary artery bypass graft surgery that can be performed quickly in the event of a potentially injurious or life-threatening complication.
- All TRYTON Side Branch Stent/Stent Delivery Systems are intended for single use only. Under no circumstances should this device or any part thereof be resterilized or reused. Reuse may result in device malfunction and subsequent patient complications and/or adverse events.
- All equipment required for the implantation of this stent must be carefully examined prior to use to verify proper function.
- Special care should be taken not to disrupt the stent on the delivery catheter, particularly during removal from its packaging, placement over guidewire, and advancement through hemostasis valve and guiding catheter.
- When the delivery catheter is exposed to the vascular system, it should be manipulated while under high-quality fluoroscopic observation. If resistance is met during manipulation, determine the cause of the resistance before proceeding. Excessive manipulation may cause dislodgment of the stent from the delivery catheter or vessel damage.
- For deployment of the stent, use a mixture of radiographic contrast media and sterile saline. Do not inflate the delivery system with air or any gaseous media.
- Balloon pressure should not exceed the rated burst pressure of the delivery catheter. Use of a pressure monitoring device is required to prevent over-pressurization.
- Do not attempt to reposition a partially deployed stent. Attempted repositioning may result in severe vessel damage.

- When recrossing a recently implanted stent, care should be taken to assure the guide wire is placed within the lumen and not in between the stent and the vessel wall. Otherwise, inadvertent dislodgment of the stent may occur leading to faulty positioning of the stent.
- Do not attempt to pull an unexpanded stent back into the guiding catheter, as stent damage or stent dislodgement may occur. Movement in and out through the distal end of the guiding catheter should not be performed as the stent may be damaged when retracting the undeployed stent back into the guiding catheter. To withdraw the TRYTON Side Branch Stent system, the entire system with the guiding catheter should be removed as a single unit.
- If a guide catheter extension is utilized to deliver/position the TRYTON Stent and it becomes necessary to withdraw/remove an unexpanded TRYTON Stent/Stent Delivery System, do not withdraw the TRYTON Stent/Stent Delivery System into the guide catheter extension. Withdrawal of the TRYTON Stent/Stent Delivery System into a guide catheter extension may cause dislodgement of the TRYTON Stent from the Stent Delivery System. Refer to procedure step #5 under *Use of TRYTON Side Branch Stent/Stent Delivery System.*
- Main branch artery preparation including pre-dilatation, stent positioning and deployment should be completed following main branch stent instructions for use.
- Stent retrieval methods (use of additional wires, snares, and/or forceps) may result in additional trauma to the coronary vasculature and/or the vascular access site. Complications may include bleeding, hematoma or pseudoaneurysm.
- The TRYTON Side Branch Stent has not been evaluated in pediatric cases or cases of in-stent restenosis or previously stented lesions.

Overview of Clinical Studies
Safety and effectiveness data for the TRYTON Side Branch Stent are derived from the TRYTON Pivotal Randomized Clinical Trial (RCT) and the Extended Access (EA) Confirmatory Study.

The TRYTON Pivotal RCT Study is a prospective, multicenter, randomized, single blind controlled study of 769 subjects with ischemic heart disease (enrolled at 66 sites in the U.S., Europe, and Israel) requiring treatment of native coronary artery bifurcation disease. Key inclusion criteria included: true bifurcation lesions (Medina classification 1.1.1; 0.1.1; or 1.0.1); side branch RVD ≥2.5 mm and ≤3.5 mm by visual estimate; side branch diameter stenosis of ≥50%; side branch lesion length ≤5.0 mm; and the operator's intent to treat the side branch of the target bifurcation based on angiographic evaluation. Subjects were randomized 1:1 to the TRYTON Side Branch Stent plus implantation of an approved drug-eluting stent (DES) in the main branch (N=355 patients) vs. side branch balloon angioplasty (POBA control) plus implantation of an approved DES in the main branch (N=349 patients). In addition, there were 65 roll-in subjects treated with the TRYTON stent. The primary endpoint was Target Vessel Failure (TVF, a composite of cardiac death, target vessel MI, and clinically-driven target vessel revascularization [in the main or side branch]) at 9-months follow-up. Patients were followed through 3 years post-index procedure.

The TRYTON Extended Access (EA) Confirmatory Study is a single arm study, which enrolled 133 subjects treated with the TRYTON Side Branch Stent plus implantation of an approved DES in the main branch for treatment of native coronary artery bifurcation disease. The EA Confirmatory study mirrored the TRYTON Pivotal RCT study protocol enrollment criteria with an emphasis on proper side branch size selection, targeting patients with a side branch reference vessel diameter (RVD) ≥2.5 mm by visual estimate, which is generally equivalent to ≥2.25 mm by quantitative coronary angiography (QCA) as assessed by the angiographic core laboratory. A total of 133 subjects were enrolled at 28 sites in the U.S. and Europe. The primary endpoint of the EA Confirmatory study was periprocedural MI (PPMI) defined as a CK-MB elevation >3 times the upper range limit within the first 48 hours after percutaneous coronary intervention (PCI). Patients were followed through 1 year post-procedure.

Observed Adverse Events
Observed adverse event experience is from the TRYTON Pivotal RCT Study and the Extended Access (EA) Confirmatory Study. Major clinical events for these studies are shown in Tables 2 and 3.

Table 2: TRYTON Pivotal RCT Major Clinical Events from Post-Procedure to 3 Years Follow-Up (Intent-to-Treat Patients)

	In-Hospital		9 Months*		1 Year*		2 Years*		3 Years*	
	POBA N=349	TRYTON N=355	POBA N=349	TRYTON N=355	POBA N=349	TRYTON N=355	POBA N=349	TRYTON N=355	POBA N=349	TRYTON N=355
TVF (Primary Endpoint)[1**]	9.5% (33/349)	12.4% (44/355)	12.6% (43/341)	17.2% (60/348)	15.3% (52/339)	20.1% (69/344)	16.8% (56/333)	21.9% (74/338)	18.2% (59/325)	24.5% (80/326)
TLF[2**]	9.5% (33/349)	12.4% (44/355)	12.0% (41/341)	16.7% (58/348)	14.2% (48/339)	19.0% (65/343)	15.0% (50/333)	20.2% (68/337)	16.0% (52/324)	23.1% (75/325)
All Death	0.0% (0/349)	0.0% (0/355)	1.2% (4/343)	1.1% (4/351)	1.5% (5/340)	1.7% (6/346)	1.8% (6/334)	3.2% (11/344)	3.7% (12/327)	4.8% (16/331)
Cardiac Death	0.0% (0/349)	0.0% (0/355)	0.0% (0/339)	0.0% (0/347)	0.3% (1/336)	0.3% (1/342)	0.3% (1/330)	0.6% (3/335)	0.9% (3/318)	1.6% (5/320)
Non-Cardiac Death	0.0% (0/349)	0.0% (0/355)	1.2% (4/343)	1.1% (4/351)	1.2% (4/340)	1.4% (5/345)	1.5% (5/333)	2.6% (9/342)	2.8% (9/324)	3.4% (11/326)
Modified ARC MI[3,4]	9.5% (33/349)	12.4% (44/355)	11.1% (38/342)	14.9% (52/348)	11.2% (38/340)	15.5% (53/343)	12.6% (42/333)	17.6% (59/336)	14.5% (47/325)	20.2% (65/322)
Peri-procedural PCI MI[5]	9.5% (33/349)	12.4% (44/355)	10.0% (34/340)	12.9% (45/348)	10.1% (34/338)	13.2% (45/342)	10.3% (34/331)	13.8% (46/334)	10.6% (34/320)	14.4% (46/320)
Target Vessel MI[**]	9.5% (33/349)	12.4% (44/355)	10.6% (36/341)	14.4% (50/348)	10.6% (36/339)	14.9% (51/343)	11.4% (38/332)	15.5% (52/336)	12.4% (40/323)	16.8% (54/322)
Q-Wave	0.3% (1/349)	0.6% (2/355)	0.3% (1/339)	0.6% (2/347)	0.3% (1/336)	0.9% (3/342)	0.9% (3/329)	0.9% (3/334)	1.3% (4/316)	0.9% (3/317)
Non Q-Wave	8.9% (31/349)	11.8% (42/355)	10.0% (34/341)	13.8% (48/348)	10.0% (34/339)	14.0% (48/342)	10.2% (34/332)	14.6% (49/335)	10.6% (34/321)	15.9% (51/320)
Clinically Driven TVR	0.3% (1/349)	0.6% (2/355)	3.5% (12/340)	4.9% (17/347)	5.9% (20/338)	7.9% (27/343)	7.3% (24/331)	9.2% (31/336)	8.2% (26/319)	10.7% (34/319)
Clinically Driven TLR	0.3% (1/349)	0.6% (2/355)	2.9% (10/340)	4.3% (15/347)	4.7% (16/338)	6.5% (22/341)	5.1% (17/331)	7.2% (24/334)	5.7% (18/318)	8.8% (28/317)
Stent Thrombosis (ARC Definite or Probable)	0.0% (0/349)	0.6% (2/355)	0.3% (1/340)	0.6% (2/347)	0.3% (1/337)	0.6% (2/341)	0.6% (2/330)	0.6% (2/333)	1.3% (4/318)	0.6% (2/316)
Acute Stent Thrombosis	0.0% (0/349)	0.6% (2/355)	0.0% (0/349)	0.6% (2/355)	0.0% (0/349)	0.6% (2/355)	0.0% (0/349)	0.6% (2/355)	0.0% (0/349)	0.6% (2/355)
Subacute Stent Thrombosis	N/A	N/A	0.3% (1/347)	0.0% (0/355)	0.3% (1/347)	0.0% (0/355)	0.3% (1/347)	0.0% (0/355)	0.3% (1/347)	0.0% (0/355)
Late Stent Thrombosis	N/A	N/A	0.0% (0/340)	0.0% (0/347)	0.0% (0/337)	0.0% (0/341)	0.0% (0/337)	0.0% (0/341)	0.0% (0/337)	0.0% (0/341)
Very Late Stent Thrombosis	N/A	N/A	N/A	N/A	N/A	N/A	0.3% (1/327)	0.0% (0/333)	0.9% (3/318)	0.0% (0/316)

Abbreviations: ARC = Academic Research Consortium, MI = Myocardial Infarction, PCI = Percutaneous Intervention, POBA = Side branch balloon angioplasty (Control), TLF = Target Lesion Failure, TLR=Target Lesion Revascularization, TVR= Target Vessel Revascularization.

Acute stent thrombosis: ≤24 hours post stent implantation

Subacute stent thrombosis: >24 hours to 30 days post stent implantation

Late stent thrombosis: >30 days to 1 year post stent implantation

Very late stent thrombosis: >1 year post stent implantation

[*] Combined in and out of hospital complications.

[**] If the relationship to the target vessel could not be determined, the MI was considered a target vessel MI.

[1] Target Vessel Failure (TVF- cardiac death, target vessel MI (modified ARC definition) and clinically driven target vessel revascularization)

[2] Target Lesion Failure (TLF- cardiac death, target vessel MI (modified ARC definition) and clinically driven target lesion revascularization)

[3] Pt. 231-0003 had a TVMI with unknown Q-wave vs. non Q-wave status

[4] Modified ARC MI: CK-MB elevation with value >3 times the upper range limit (Baseline value <URL). Modified to remove troponin biomarker criteria.

[5] Peri-Procedural PCI MI: CK-MB elevation with value >3 times the upper range limit within the first 48 hours after PCI (Baseline value <URL). Modified to remove troponin biomarker criteria.

Note: For 9 month results, denominators reflect the number of patients with an adjudicated event through 240 days or follow-up through the 270 days window. For 1 year results, denominators reflect the number of patients with an adjudicated event in 335 days or follow-up through the 365 days window. For 2 year results, denominators reflect the number of patients with an adjudicated event in 700 days or follow-up through the 730 days window. For 3 year results, denominators reflect the number of patients with an adjudicated event in 1,065 days or follow-up through the 1,095 days window.

Table 3: TRYTON Extended Access (EA) Confirmatory Study Major Clinical Events from Post-Procedure to 1 Year Follow-Up

	In-Hospital	30 Days*	1 Year*
TVF[1**]	10.5% (14/133)	10.6% (14/132)	16.5% (21/127)
TLF[2**]	10.5% (14/133)	10.6% (14/132)	16.5% (21/127)
All Death	0.0% (0/133)	0.0% (0/132)	2.3% (3/128)
Cardiac Death	0.0% (0/133)	0.0% (0/132)	0.0% (0/125)
Non-Cardiac Death	0.0% (0/133)	0.0% (0/132)	2.3% (3/128)
Modified ARC MI[3]	10.5% (14/133)	11.4% (15/132)	12.6% (16/127)
Peri-procedural PCI MI[4]	10.5% (14/133)	10.6% (14/132)	11.0% (14/127)
Target Vessel MI**	10.5% (14/133)	10.6% (14/132)	11.8% (15/127)
Q-Wave	1.5% (2/133)	3.0% (4/132)	3.2% (4/126)
Non Q-Wave	6.8% (9/133)	8.3% (11/132)	9.5% (12/126)
Clinically Driven TVR	1.5% (2/133)	2.3% (3/132)	8.8% (11/125)
Clinically Driven TLR	1.5% (2/133)	2.3% (3/132)	8.8% (11/125)
Stent Thrombosis (ARC Definite or Probable)	2.3% (3/133)	2.3% (3/132)	2.4% (3/125)
Acute Stent Thrombosis	2.3% (3/133)	2.3% (3/133)	2.3% (3/133)
Subacute Stent Thrombosis	N/A	0.0% (0/132)	0.0% (0/132)
Late Stent Thrombosis	N/A	N/A	0.0% (0/125)

Abbreviations: ARC = Academic Research Consortium, MI = Myocardial Infarction, PCI = Percutaneous Coronary Intervention, TLR=Target Lesion Revascularization, TVR= Target Vessel Revascularization.

Acute stent thrombosis: ≤24 hours post stent implantation

Subacute stent thrombosis: >24 hours to 30 days post stent implantation

Late stent thrombosis: >30 days to 1 year post stent implantation

*Combined in and out of hospital complications.

**If the relationship to the target vessel could not be determined, the MI was considered a target vessel MI.

[1] Target Vessel Failure (TVF- cardiac death, target vessel MI (modified ARC definition) and clinically driven target vessel revascularization)

[2] Target Lesion Failure (TLF- cardiac death, target vessel MI (modified ARC definition) and clinically driven target lesion revascularization)

[3] Modified ARC MI: CK-MB elevation with value >3 times the upper range limit (Baseline value <URL). Modified to remove troponin biomarker criteria.

[4] Peri-Procedural PCI MI: CK-MB elevation with value >3 times the upper range limit within the first 48 hours after PCI (Baseline value <URL). Modified to remove troponin biomarker criteria.

Note: For 30-day results, denominators reflect the number of patients with an adjudicated event through 30 days or follow-up through 23 days. For 1 year results, denominators reflect the number of patients with an adjudicated event in 335 days or follow-up through 365 days window.

Note: Events in this table have final adjudication by the clinical events committee.

Potential Complications and Adverse Effects

Potential complications and adverse effects due to the use of this product include, but are not limited to, the following:

- Acute or subacute closure of the coronary artery
- Acute myocardial infarction
- Aneurysm
- Arrhythmia, including ventricular fibrillation
- Arteriovenous fistulas
- Coronary artery spasm
- Coronary vessel dissection, perforation, rupture or injury
- Death
- Drug reactions, allergic reactions to contrast medium
- Emergent Coronary Artery Bypass Graft (CABG)
- Fever
- Hematoma or hemorrhage
- Hypo- / hypertension
- Hypersensitivity reactions
- Infection
- Myocardial ischemia
- Non-cardiac chest pain
- Pseudoaneurysm
- Restenosis of the dilated vessel
- Stent embolism or migration
- Stroke or cerebral vascular accident
- Total occlusion of the coronary artery or bypass graft
- Unstable or stable angina pectoris
- Vascular thrombosis or embolism

Clinical Studies
Two clinical studies were conducted to demonstrate the safety and effectiveness of the TRYTON Side Branch Stent:

- **TRYTON Pivotal RCT Study** - a prospective, multicenter, single blind controlled study. Subjects requiring treatment of native coronary artery bifurcation disease were randomized 1:1 to the TRYTON Side Branch Stent plus implantation of an approved drug-eluting stent (DES) in the main branch vs. side branch balloon angioplasty (POBA) plus implantation of an approved DES in the main branch.

- **TRYTON Extended Access (EA Confirmatory) Study** - a single arm study of the TRYTON Pivotal RCT study. Subjects were implanted with the TRYTON Side Branch Stent plus implantation of an approved DES in the main branch for treatment of native coronary artery bifurcation disease.

TRYTON Pivotal RCT

Primary Objective: To demonstrate the safety and effectiveness of the TRYTON Side Branch Stent plus implantation of an approved DES in the main branch compared to side branch balloon angioplasty plus implantation of an approved DES in the main branch in the treatment of de novo native coronary artery bifurcation lesions with side branch diameters ranging from ≥2.5 mm to ≤3.5 mm and main branch diameters ranging from ≥2.5 mm to ≤4.0 mm.

Design: The TRYTON Pivotal RCT Study is a prospective, multicenter, randomized, single blind controlled study that enrolled 769 subjects with ischemic heart disease (enrolled at 66 sites in the U.S., Europe, and Israel) requiring treatment of native coronary artery bifurcation disease. Key inclusion criteria included: true bifurcation lesions (Medina classification 1.1.1; 0.1.1; or 1.0.1); side branch RVD ≥2.5 mm and ≤3.5 mm by visual estimate; side branch diameter stenosis of ≥50%; side branch lesion length ≤5.0 mm; and the operator's intent to treat the side branch of the target bifurcation based on angiographic evaluation. Subjects were randomized 1:1 to the TRYTON Side Branch Stent plus main branch approved DES implantation (N=355) vs. side branch balloon angioplasty (POBA control) plus main branch approved DES implantation (N=349). The first 187 subjects enrolled in each treatment group underwent angiographic follow-up at 9 months. Sixty-five (65) roll-in subjects underwent implantation of the TRYTON Side Branch Stent in the US at sites that had not previously used the device (maximum 3 subjects per site and maximum of 2 subjects per investigator). Roll-in subjects were not part of the angiographic or IVUS subgroup, and their clinical outcomes were analyzed separately from the randomized cohorts.

The primary endpoint was Target Vessel Failure (TVF, a composite of cardiac death, target vessel MI, and clinically driven target vessel revascularization of the main or side branch) at 9-months follow-up. The hypothesis for the primary endpoint was that the TVF rate at 9 months in subjects treated with the TRYTON stent was non-inferior to POBA.

The major secondary endpoint was side branch in-segment percent diameter stenosis (%DS) at 9 months post procedure. The hypothesis for the major secondary endpoint was that the TRYTON was superior to POBA with respect to mean side %DS at 9 months.

Baseline and post-procedure angiographic data were collected and assessed by quantitative analysis at a designated core laboratory. An independent Clinical Events Committee adjudicated major adverse clinical events, including angiographic evidence of stent thrombosis.

Of the 704 randomized subjects included in the intent-to-treat analysis set, 689 subjects (348 TRYTON and 341 POBA) were evaluable for the 9-month primary endpoint.

Follow-up assessments were conducted at 30 days, 6 months, 9 months, 1 year, 2 years, and 3 years post-index procedure.

Demographics: Baseline characteristics of study subjects indicated that 71.8% of TRYTON subjects and 73.4% of POBA subjects were male with an average age of 64.5±10.6 (TRYTON) and 64.6±9.4 (POBA) years. 23.9% of TRYTON subjects and 28.1% of POBA subjects had diabetes mellitus, 74.1% of TRYTON subjects and 77.3% of POBA subjects had hypercholesterolemia, 17.5% of TRYTON subjects and 15.2% of POBA subjects were current smokers, and 73.2% of TRYTON subjects, 73.6% of POBA subjects had hypertension, and 30.0% of TRYTON subjects and 37.8% of POBA subjects had a prior MI. Overall, no statistical differences were observed between the groups for any of the baseline characteristics, with the exception of race (95.8% of TRYTON subjects were white compared to 89.1% of POBA subjects, P=0.026), and there were fewer subjects with prior MI in the TRYTON group compared to the POBA group (30.0% vs. 37.8%, respectively, P=0.031).

Baseline Lesion Characteristics: When assessed by the angiographic core laboratory, true bifurcation lesions (Medina Classification 1.1.1; 0.1.1; 1.0.1) were present at randomization in 89.8% (318/354) of the lesions in the TRYTON group and 86.2% (301/349) of the lesions in the POBA group (Table 4), with no difference between groups in the type of bifurcation (P=0.212). The mean (±SD) main branch lesion length was 16.8 (±7.3) mm in the TRYTON

group and 16.0 (±6.8) mm in the POBA group (P=0.109). The mean side branch RVD was 2.25 (±0.30) mm in the TRYTON group and 2.21 (±0.33) mm in the POBA group. At baseline, the side branch lesions in the TRYTON group were slightly more severe vs POBA: the mean (±SD) side branch lesion length was 4.84 (±1.56) mm in the TRYTON group vs. 4.43 (±1.12) mm in the POBA group (P<0.001); the mean minimum lesion diameter (MLD) in the TRYTON group was 0.95 (±0.34) mm vs. 1.02 (±0.34) mm in the POBA group (P=0.009); and the mean percent diameter stenosis (%DS) in the TRYTON group was 58.0% (±14.3) vs. 54.0% (±14.5) in the POBA group (P<0.001).

Table 4: TRYTON Pivotal RCT Medina Classification (Intent-to-Treat Patients)

Medina Classification	Site Reported		Core Lab	
	POBA	TRYTON	POBA	TRYTON
1,1,1	68.7% (239/348)	73.2% (260/355)	42.1% (147/349)	49.2% (174/354)
1,1,0*	0.0% (0/348)	0.0% (0/355)	4.9% (17/349)	2.3% (8/354)
1,0,1	12.4% (43/348)	11.5% (41/355)	16.0% (56/349)	15.8% (56/354)
0,1,1	18.7% (65/348)	14.6% (52/355)	28.1% (98/349)	24.9% (88/354)
1,0,0*	0.0% (0/348)	0.3% (1/355)	2.6% (9/349)	1.4% (5/354)
0,1,0*	0.0% (0/348)	0.0% (0/355)	4.0% (14/349)	2.8% (10/354)
0,0,1*	0.3% (1/348)	0.3% (1/355)	2.3% (8/349)	3.4% (12/354)
0,0,0*	0.0% (0/348)	0.0% (0/355)	0.0% (0/349)	0.3% (1/354)

*Protocol violation

Primary Endpoint Results: The 9-month TVF rate was 17.2% (60/348) in the TRYTON group compared to 12.6% (43/341) in the POBA group. The difference in 9-month TVF rates between the groups was 4.6% with two-sided 95% CI of [-0.7%, 10.0%]. Since the upper bound of this CI is higher than 5.5% (the delta for non-inferiority), the null hypothesis is not rejected and the TRYTON Stent is not considered non-inferior to POBA with regards to the primary endpoint of 9-month TVF (non-inferiority endpoint not met).

Summary of Cardiac Events: Event rates for the primary endpoint and rates for other important clinical events are shown in Table 5.

Table 5: TRYTON Pivotal RCT Study 9 Month Clinical Results (All Intent-to-Treat Patients)

	Intent-to-Treat Patients	
	POBA (N=349)	TRYTON (N=355)
Primary Endpoint (TVF)	12.6% (43/341)	17.2% (60/348)
All death	1.2% (4/343)	1.1% (4/351)
Cardiac death	0.0% (0/339)	0.0% (0/347)
Target vessel MI	10.6% (36/341)	14.4% (50/348)
Peri-procedural MI*	10.0% (34/340)	12.9% (45/348)
Peri-CABG MI	0.0% (0/339)	0.3% (1/347)
Clinically driven TVR	3.5% (12/340)	4.9% (17/347)
Clinically driven TVR Main Branch	2.9% (10/340)	4.0% (14/347)
Clinically Driven TVR Side Branch	1.5% (5/340)	2.6% (9/347)
Clinically Driven TLR	2.9% (10/340)	4.3% (15/347)
Clinically Driven TLR Main Branch	2.4% (8/340)	3.5% (12/347)
Clinically Driven TLR Side Branch	1.5% (5/340)	2.6% (9/347)
Stent Thrombosis (ARC definite, probable)	0.3% (1/340)	0.6% (2/347)
Acute Stent Thrombosis	0.0% (0/349)	0.6% (2/355)
Subacute Stent Thrombosis	0.3% (1/347)	0.0% (0/355)

Late Stent Thrombosis	0.0% (0/340)	0.0% (0/347)
Stent Thrombosis Main Branch	0.3% (1/340)	0.6% (2/347)
Stent Thrombosis Side Branch	0.0% (0/339)	0.6% (2/347)
Lesion Success (per lesion)	88.1% (304/345)	100% (337/337)
Device Success (per lesion)	39% (135/346)	90.8% (316/348)
Procedural Success (per patient)	70.5% (244/346)	80.3% (281/350)

*In-Hospital complication tables used for PPMI (Peri-procedural PCI)
Abbreviations: ARC = Academic Research Consortium, MI = myocardial infarction, PCI = percutaneous coronary intervention, TLR=target lesion revascularization, TVR= target vessel revascularization, Target Vessel Failure (TVF- cardiac death, target vessel MI (modified ARC definition) and clinically-driven target vessel revascularization)
Acute stent thrombosis: ≤24 hours post stent implantation
Subacute stent thrombosis: >24 hours to 30 days post stent implantation
Late stent thrombosis: >30 days to 1 year post stent implantation
Device success: Attainment of <30% residual stenosis within the side branch using the assigned device only and without a device malfunction.
Lesion success: Attainment of <50% residual stenosis using any percutaneous method.
Procedure success: Lesion success without the occurrence of in-hospital MACE.

Major Secondary Endpoint Results: Among ITT subjects with qualified 9-month angiograms, the side branch in-segment %DS was significantly lower in the TRYTON group compared to the POBA group: 31.6 ± 22.9% vs. 38.6 ± 16.16%, P=0.002); the TRYTON stent met the major secondary endpoint. The side branch %DS and in-segment binary restenosis rates at 9 months in the angiographic follow-up cohort are shown in Table 6.

Table 6: TRYTON Pivotal RCT Side Branch Percent Diameter Stenosis and In-Segment Binary Restenosis Rate at 9 Months

	Intent-to-Treat Subjects		P-value
	POBA (N=168)	TRYTON (N=158)	
% Diameter Stenosis	38.6±16.2 (168)*	31.6±22.9 (155)*	0.002
In-Segment Binary Restenosis Rate	26.8% (45/168)	22.6% (35/155)	NS

*Subjects with qualified 9-month angiograms. NS = non-significant

Post Hoc Analysis of Clinical Results Stratified By Side Branch Diameter: An angiographic analysis revealed that the majority of the ITT population had smaller side branch reference vessel diameters than intended per the angiographic inclusion criteria. Only 41% of the ITT population met study criterion for side branch diameter ≥2.25 mm per QCA assessment, which is generally equivalent to a ≥2.5 mm diameter by visual estimation. A post-hoc analysis was performed to evaluate the interaction between treatment and the side branch QCA-assessed RVD at baseline (≥2.25 mm vs. <2.25 mm) on the primary endpoint and its components.

Among ITT subjects with a QCA-assessed side branch RVD ≥2.25 mm (referred to as the Intended Population in the Pivotal RCT), the 9-month TVF rate was 10.5% (15/143) in the TRYTON group compared to 14.8% (21/142) in the POBA group. The difference in 9-month TVF rates between the groups was -4.3% with two-sided 95% CI of [-12.7%, 4.1%]. Given the post-hoc nature of this analysis, a conclusion of non-inferiority of TRYTON vs. POBA cannot be made for the QCA-assessed side branch RVD ≥2.25 mm subgroup.

Among subjects with undersized side branches (QCA-assessed RVD <2.25 mm), the 9-month TVF rate was 22.1% (45/204) in the TRYTON group compared to 10.6% (21/198) in the POBA group. The difference in 9-month TVF rates between the groups was 11.5% with two-sided 95% CI of [4.2%, 18.6%].

Clinical results for the Intended Population of ITT subjects (QCA-assessed side branch RVD ≥2.25 mm) are shown in Table 7. Clinical results for ITT subjects with undersized side branches (QCA-assessed RVD < 2.25 mm) are shown in Table 8. The side branch %DS and in-segment binary restenosis rates at 9 months in the angiographic follow-up cohort, stratified by QCA-assessed side branch RVD ≥2.25 mm or <2.25 mm are shown in Table 9.

Table 7: TRYTON Pivotal RCT Study Clinical Results for Side Branch RVD ≥2.25 mm (Intended Population)

	9 Months		1 Year		2 Years		3 Years	
	POBA (N=143)	TRYTON (N=146)	POBA (N=143)	TRYTON (N=146)	POBA (N=143)	TRYTON (N=146)	POBA (N=143)	TRYTON (N=146)
Primary Endpoint (TVF)	14.8% (21/142)	10.5% (15/143)	16.9% (24/142)	13.4% (19/142)	18.6% (26/140)	15.1% (21/139)	20.3% (28/138)	18.3% (24/131)
All death	0.7% (1/143)	1.4% (2/145)	0.7% (1/143)	2.1% (3/144)	1.4% (2/141)	4.2% (6/142)	3.6% (5/139)	5.9% (8/135)
Cardiac death	0.0% (0/142)	0.0% (0/143)	0.0% (0/142)	0.7% (1/142)	0.0% (0/140)	1.4% (2/138)	1.5% (2/136)	2.3% (3/130)
Target vessel MI	11.3% (16/142)	8.4% (12/143)	11.3% (16/142)	9.2% (13/142)	11.4% (16/140)	9.4% (13/138)	13.0% (18/138)	10.9% (14/129)
Peri-procedural MI*	11.3% (16/142)	7.7% (11/143)	11.3% (16/142)	7.8% (11/141)	11.4% (16/140)	8.1% (11/136)	11.8% (16/136)	8.7% (11/127)
Peri-CABG MI	0.0% (1/142)	0.7% (1/143)	0.0% (0/142)	0.7% (1/141)	0.0% (0/140)	1.5% (2/137)	0.0% (0/134)	1.6% (2/128)
Clinically driven TVR	4.2% (6/142)	3.5% (5/143)	6.3% (9/142)	6.3% (9/142)	7.9% (11/140)	7.2% (10/138)	8.9% (12/135)	9.3% (12/129)
Clinically driven TVR Main Branch	3.5% (5/142)	2.8% (4/143)	4.9% (7/142)	4.2% (6/142)	6.4% (9/140)	5.1% (7/138)	7.4% (10/135)	7.0% (9/129)
Clinically Driven TVR Side Branch	1.4% (2/142)	2.8% (4/143)	2.1% (3/142)	4.3% (6/141)	2.1% (3/140)	4.4% (6/137)	3.0% (4/135)	6.3% (8/128)
Clinically Driven TLR	2.8% (4/142)	3.5% (5/143)	4.9% (7/142)	5.0% (7/141)	5.0% (7/140)	5.1% (7/137)	5.9% (8/135)	7.8% (10/128)
Clinically Driven TLR Main Branch	2.1% (3/142)	2.8% (4/143)	3.5% (5/142)	2.8% (4/141)	3.6% (5/140)	2.9% (4/137)	4.4% (6/135)	4.7% (6/128)
Clinically Driven TLR Side Branch	1.4% (2/142)	2.8% (4/143)	2.1% (3/142)	4.3% (6/141)	2.1% (3/140)	4.4% (6/137)	3.0% (4/135)	6.3% (8/128)

Stent Thrombosis (ARC definite, probable)	0.0% (0/142)	0.7% (1/143)	0.0% (0/142)	0.7% (1/141)	0.0% (0/140)	0.7% (1/136)	1.5% (2/136)	0.8% (1/127)
Acute Stent Thrombosis	0.0% (0/143)	0.7% (1/146)	0.0% (0/143)	0.7% (1/146)	0.0% (0/143)	0.7% (1/146)	0.0% (0/143)	0.7% (1/146)
Subacute Stent Thrombosis	0.0% (0/143)	0.0% (0/146)	0.0% (0/143)	0.0% (0/146)	0.0% (0/143)	0.0% (0/146)	0.0% (0/143)	0.0% (0/146)
Late Stent Thrombosis	0.0% (0/142)	0.0% (0/143)	0.0% (0/142)	0.0% (0/141)	0.0% (0/142)	0.0% (0/141)	0.0% (0/142)	0.0% (0/141)
Very Late Stent Thrombosis	N/A	N/A	N/A	N/A	0.0% (0/140)	0.0% (0/136)	1.5% (2/136)	0.0% (0/127)
Stent Thrombosis Main Branch	0.0% (0/142)	0.7% (1/143)	0.0% (0/142)	0.7% (1/141)	0.0% (0/140)	0.7% (1/136)	1.5% (2/136)	0.8% (1/127)
Stent Thrombosis Side Branch	0.0% (0/142)	0.7% (1/143)	0.0% (0/142)	0.7% (1/141)	0.0% (0/140)	0.7% (1/136)	0.7% (1/135)	0.8% (1/127)
Lesion Success (per lesion)	84.5% (120/142)	100% (141/141)						
Device Success (per lesion)	35.9% (51/142)	94.4% (135/143)						
Procedural Success (per patient)	66.9% (95/142)	87.4% (125/143)						

*In-Hospital complication tables used for PPMI (Peri-procedural PCI)
Note: Two patients (one from the Tryton arm, one from the POBA arm) were missing angiographic core lab data; therefore, they were not included in this table since Side Branch RVD could not be calculated.
Acute stent thrombosis: ≤24 hours post stent implantation
Subacute stent thrombosis: >24 hours to 30 days post stent implantation
Late stent thrombosis: >30 days to 1 year post stent implantation
Very late stent thrombosis: >1 year post stent implantation
Device success: Attainment of <30% residual stenosis within the side branch using the assigned device only and without a device malfunction.
Lesion success: Attainment of <50% residual stenosis using any percutaneous method.
Procedure success: Lesion success without the occurrence of in-hospital MACE.
Note: For 9 month results, denominators reflect the number of patients with an adjudicated event through 240 days or follow-up through the 270 days window. For 1 year results, denominators reflect the number of patients with an adjudicated event in 335 days or follow-up through the 365 days window. For 2 year results, denominators reflect the number of patients with an adjudicated event in 700 days or follow-up through the 730 days window. For 3 year results, denominators reflect the number of patients with an adjudicated event in 1,065 days or follow-up through the 1,095 days window.

Table 8: TRYTON Pivotal RCT Study Clinical Results for Side Branch RVD <2.25 mm

	9 Months		1 Year		2 Years		3 Years	
	POBA (N=205)	**TRYTON (N=208)**	**POBA (N=205)**	**TRYTON (N=208)**	**POBA (N=205)**	**TRYTON (N=208)**	**POBA (N=205)**	**TRYTON (N=208)**
Primary Endpoint (TVF)	10.6% (21/198)	22.1% (45/204)	13.8% (27/196)	24.8% (50/202)	15.1% (29/192)	26.6% (53/199)	16.1% (30/186)	28.7% (56/195)
All death	1.5% (3/200)	1.0% (2/205)	2.0% (4/197)	1.5% (3/202)	2.1% (4/193)	2.5% (5/202)	3.7% (7/188)	4.1% (8/196)
Cardiac death	0.0% (0/197)	0.0% (0/203)	0.5% (1/194)	0.0% (0/200)	0.5% (1/190)	0.0% (0/197)	0.5% (1/182)	1.1% (2/190)
Target vessel MI	9.6% (19/198)	18.6% (38/204)	9.7% (19/196)	18.9% (38/201)	11.0% (21/191)	19.7% (39/198)	11.4% (21/184)	20.7% (40/193)
Peri-procedural MI*	8.6% (17/197)	16.7% (34/204)	8.7% (17/195)	16.9% (34/201)	8.9% (17/190)	17.7% (35/198)	9.3% (17/183)	18.1% (35/193)
Peri-CABG MI	0.0% (0/197)	0.0% (0/203)	0.0% (0/194)	0.0% (0/200)	0.0% (0/189)	0.0% (0/197)	0.0% (0/181)	0.0% (0/188)
Clinically driven TVR	3.0% (6/198)	5.9% (12/203)	5.6% (11/196)	9.0% (18/201)	6.8% (13/191)	10.6% (21/198)	7.6% (14/184)	11.6% (22/190)
Clinically driven TVR Main Branch	2.5% (5/198)	4.9% (10/203)	5.1% (10/196)	7.5% (15/201)	6.3% (12/191)	8.6% (17/198)	7.1% (13/184)	9.5% (18/190)
Clinically Driven TVR Side Branch	1.5% (3/198)	2.5% (5/203)	2.0% (4/196)	4.0% (8/200)	2.1% (4/191)	5.1% (10/197)	2.2% (4/183)	5.8% (11/189)
Clinically Driven TLR	3.0% (6/198)	4.9% (10/203)	4.6% (9/196)	7.5% (15/200)	5.2% (10/191)	8.6% (17/197)	5.5% (10/183)	9.5% (18/189)
Clinically Driven TLR Main Branch	2.5% (5/198)	3.9% (8/203)	4.1% (8/196)	6.0% (12/200)	4.7% (9/191)	6.6% (13/197)	4.9% (9/183)	7.4% (14/189)
Clinically Driven TLR Side Branch	1.5% (3/198)	2.5% (5/203)	2.0% (4/196)	4.0% (8/200)	2.1% (4/191)	5.1% (10/197)	2.2% (4/183)	5.8% (11/189)
Stent Thrombosis (ARC definite, probable)	0.5% (1/198)	0.5% (1/203)	0.5% (1/195)	0.5% (1/200)	1.1% (2/190)	0.5% (1/197)	1.1% (2/182)	0.5% (1/189)
Acute Stent Thrombosis	0.0% (0/205)	0.5% (1/208)	0.0% (0/205)	0.5% (1/208)	0.0% (0/205)	0.5% (1/208)	0.0% (0/205)	0.5% (1/208)

Subacute Stent Thrombosis	0.5% (1/205)	0.0% (0/208)	0.5% (1/205)	0.0% (0/208)	0.5% (1/205)	0.0% (0/208)	0.5% (1/205)	0.0% (0/208)
Late Stent Thrombosis	0.0% (0/198)	0.0% (0/203)	0.0% (0/195)	0.0% (0/200)	0.0% (0/195)	0.0% (0/200)	0.0% (0/195)	0.0% (0/200)
Very Late Stent Thrombosis	N/A	N/A	N/A	N/A	0.5% (1/190)	0.0% (0/197)	0.5% (1/182)	0.0% (0/189)
Stent Thrombosis Main Branch	0.5% (1/198)	0.5% (1/203)	0.5% (1/195)	0.5% (1/200)	1.1% (2/190)	0.5% (1/197)	1.1% (2/182)	0.5% (1/189)
Stent Thrombosis Side Branch	0.0% (0/197)	0.5% (1/203)	0.0% (0/194)	0.5% (1/200)	0.0% (0/189)	0.5% (1/197)	0.0% (0/181)	0.5% (1/189)
Lesion Success (per lesion)	90.6% (184/203)	100% (196/196)						
Device Success (per lesion)	41.2% (84/204)	88.3% (181/205)						
Procedural Success (per patient)	73.4% (149/203)	75.4% (156/207)						

*In-Hospital complication tables used for PPMI (Peri-procedural PCI)
Note: Two patients (one from the Tryton arm, one from the POBA arm) were missing angiographic core lab data; therefore, they were not included in this table since Side Branch RVD could not be calculated.
Acute stent thrombosis: ≤24 hours post stent implantation
Subacute stent thrombosis: >24 hours to 30 days post stent implantation
Late stent thrombosis: >30 days to 1 year post stent implantation
Very late stent thrombosis: >1 year post stent implantation
Device success: Attainment of <30% residual stenosis within the side branch using the assigned device only and without a device malfunction.
Lesion success: Attainment of <50% residual stenosis using any percutaneous method.
Procedure success: Lesion success without the occurrence of in-hospital MACE.
Note: For 9 month results, denominators reflect the number of patients with an adjudicated event through 240 days or follow-up through the 270 days window. For 1 year results, denominators reflect the number of patients with an adjudicated event in 335 days or follow-up through the 365 days window. For 2 year results, denominators reflect the number of patients with an adjudicated event in 700 days or follow-up through the 730 days window. For 3 year results, denominators reflect the number of patients with an adjudicated event in 1,065 days or follow-up through the 1,095 days window.

Table 9: TRYTON Pivotal RCT Percent Diameter Stenosis at 9 Months (Powered Secondary Endpoint)

	Intended Population Side Branch RVD ≥2.25 mm		**Side Branch RVD <2.25 mm**	
	POBA (N=81)	**TRYTON (N=64)**	**POBA (N=87)**	**TRYTON (N= 94)**
% Diameter Stenosis	40.6±17.2 (81)*	30.4±22.5 (63)*	36.8±15.0 (87)*	32.4±23.3 (92)*
In-Segment Binary Restenosis Rate	32.1% (26/81)	22.2% (14/63)	21.8% (19/87)	22.8% (22/92)

*Subjects with qualified 9-month angiograms.

Kaplan-Meier survival curves for up to two years for ITT subjects and the Intended Population of ITT subjects (QCA-assessed side branch RVD ≥2.25 mm) and ITT Subjects with undersized side branches (QCA-assessed side branch RVD <2.25 mm) are shown in Figures 2 and 3, respectively.

Figure 2: Survival Free From Target Vessel Failure (Intent-to-Treat Subjects)

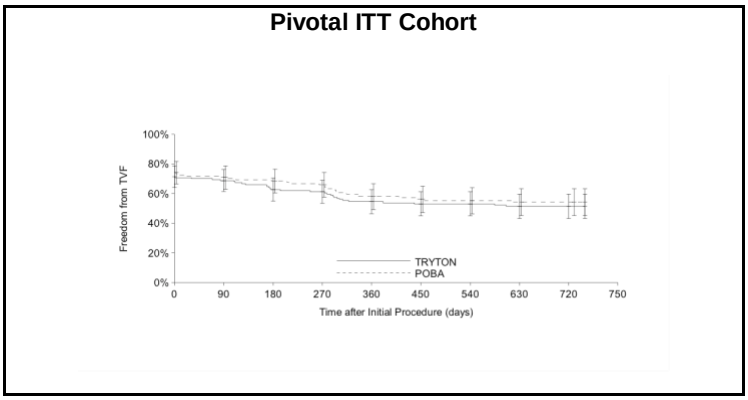
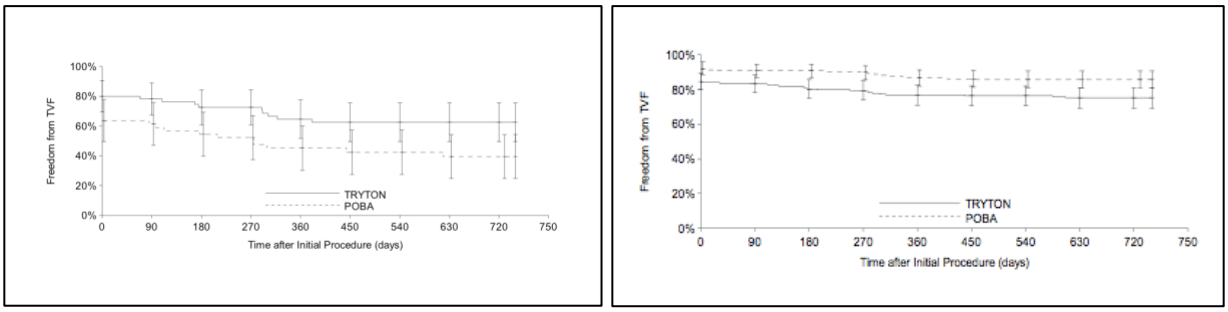


Figure 3: Survival Free From Target Vessel Failure (QCA-Assessed Side Branch RVD ≥2.25 mm (left panel) and <2.25 mm (right panel)



Results in Males and Females: An analysis of the association of gender on the primary endpoint of 9-month TVF and the secondary powered angiographic endpoint of side branch in-segment %DS is presented in Table 10. Among ITT subjects, no significant interactions were detected in regard to 9-month TVF or 9-month side branch in-segment %DS and whether the subject was a man or a woman.

Table 10: TRYTON Pivotal RCT Gender Analysis of the Primary and Powered Secondary Endpoints – ITT Population

	Male			Female		
Endpoint	**TRYTON (N=255)**	**POBA (N=256)**	**Difference [95% CI]**	**TRYTON (N=100)**	**POBA (N=93)**	**Difference [95% CI]**
TVF*	15.9% (40/251)	13.1% (33/251)	2.8% [-3.4%,9.0%]	18.6% (18/97)	11.1% (10/90)	7.4% [-2.7%,17.5%]
In-Segment Side-Branch Percent Diameter Stenosis at 9 months** Mean±SD (N)	31.2±22.3 (116)	38.5±16.4 (123)	-7.3 [-12.3,-2.3]	32.8±24.9 (39)	39.1±15.6 (45)	-6.3 [-15.4,2.7]

*Denominators are the number of patients with follow-up of at least 270 days or a TVF event within 270 days.
Events presented in this table have been adjudicated by the CEC.
**Subjects in the angiographic follow-up cohort with qualified 9-month angiograms. Angiographic data presented in this table were provided by the Angiographic Core Laboratory.

TRYTON Extended Access (EA) Confirmatory Study

Primary Objective: To assess the ability of operators to select bifurcation lesions with side branches of appropriate size (minimum RVD 2.5 mm by visual estimate or 2.25 mm by QCA), to assess the periprocedural safety of the TRYTON Side Branch Stent, and collect data to confirm the results of the post-hoc analysis of the Intended Populating (QCA-assessed side branch RVD ≥2.25 mm) observed in the Pivotal RCT.

Design: The TRYTON Extended Access (EA) Confirmatory Study is a single arm study, which enrolled 133 subjects treated with the TRYTON Side Branch Stent plus implantation of an approved DES in the main branch for treatment of native coronary artery bifurcation disease. The EA Confirmatory study mirrored the TRYTON Pivotal RCT study protocol enrollment criteria supplemented with an emphasis on proper side branch size selection, targeting patients with a side branch RVD ≥2.5 mm by visual estimate and ≥2.25 mm by QCA as assessed by the angiographic core laboratory.

The primary endpoint of the EA Confirmatory study was periprocedural MI after PCI (PPMI) defined as a CK-MB elevation >3 times the upper range limit within the first 48 hours after percutaneous coronary intervention (PCI).

A total of 133 subjects were enrolled at 28 sites in the U.S. and Europe. All 133 patients were included in the intent-to-treat analysis set and evaluable for the primary endpoint. Follow-up assessments were conducted at 30 days and 1 year post-index procedure.

Demographics: Subjects had a mean (±SD) age of 65.6 (±9.5) years and 69.9% (93/133) were men. A total of 25.8% (34/132) of the subjects were diabetics, 82% (109/133) were hypertensive, and 71.2% (94/132) had hypercholesterolemia, 21.1% (28/133) were current smokers, 32.3% (43/133) had prior MI, 39.8% (53/133) had previous PCI, and 2.3% (3/133) had prior CABG.

Baseline Lesion Characteristics: As assessed by the angiographic core laboratory, true bifurcation lesions (Medina Classification 1.1.1; 0.1.1; 1.0.1) at enrollment were present in 100% (133/133) of the subjects (Table 11). The mean (±SD) main branch lesion length was 17.23 (±7.89) mm, and side branch lesions had a mean length at baseline of 5.94 (±2.53) mm. The mean (±SD) QCA-assessed side branch RVD was 2.49±0.20 mm. Operators were able to select bifurcation lesion side branches ≥2.25 mm in diameter by QCA in 99.2% (132/133) of subjects.

Table 11: TRYTON EA Confirmatory Study Medina Classification (Intent-to-Treat Subjects)

Medina Classification	Site Reported	Core Lab
1,1,1	71.4% (95/133)	50.4% (67/133)
1,1,0*	0.0% (0/133)	0.0% (0/133)
1,0,1	11.3% (15/133)	15.0% (20/133)
0,1,1	17.3% (23/133)	34.6% (46/133)
1,0,0*	0.0% (0/133)	0.0% (0/133)
0,1,0*	0.0% (0/133)	0.0% (0/133)
0,0,1*	0.0% (0/133)	0.0% (0/133)
0,0,0*	0.0% (0/133)	0.0% (0/133)

*Protocol deviation

Primary Endpoint Results: The observed PPMI rate in TRYTON stent treated subjects was 10.5% (14/133). The one-sided 95% upper confidence bound was 16.0%, which met the pre-specified performance goal of 17.9% (P=0.014). In-hospital, 30-day, and 1-year event rates for the primary endpoint and rates for other important clinical events are shown in Table 12.

Table 12: TRYTON EA Confirmatory Study Clinical Results Through 1 Year Follow-Up (Intent-to-Treat Subjects)

	In-Hospital (N=133)	30 Days (N=133)	1 Year (N=133)
TVF	10.5% (14/133)	10.6% (14/132)	16.5% (21/127)
All death	0.0% (0/133)	0.0% (0/132)	2.3% (3/128)
Cardiac death	0.0% (0/133)	0.0% (0/132)	0.0% (0/125)
Target vessel MI	10.5% (14/133)	10.6% (14/132)	11.8% (15/127)
Peri-procedural MI*	10.5% (14/133)	10.6% (14/132)	11.0% (14/127)
Peri-CABG MI	0.0% (0/133)	0.0% (0/132)	0.0% (0/125)
Clinically driven TVR	1.5% (2/133)	2.3% (3/132)	8.8% (11/125)
Clinically driven TVR Main Branch	0.8% (1/133)	2.3% (3/132)	5.6% (7/125)
Clinically Driven TVR Side Branch	1.5% (2/133)	1.5% (2/132)	5.6% (7/125)

Clinically Driven TLR	1.5% (2/133)	2.3% (3/132)	8.8% (11/125)
Clinically Driven TLR Main Branch	0.8% (1/133)	2.3% (2/132)	5.6% (7/125)
Clinically Driven TLR Side Branch	1.5% (2/133)	1.5% (2/132)	5.6% (7/125)
Stent Thrombosis (ARC definite, probable)	2.3% (3/133)	2.3% (3/132)	2.4% (3/125)
Acute Stent Thrombosis	2.3% (3/133)	2.3% (3/133)	2.3% (3/133)
Subacute Stent Thrombosis	N/A	0.0% (0/132)	0.0% (0/132)
Late Stent Thrombosis	N/A	N/A	0.0% (0/125)
Stent Thrombosis Main Branch	1.5% (2/133)	1.5% (2/132)	1.6% (2/125)
Stent Thrombosis Side Branch	2.3% (3/133)	2.3% (3/132)	2.4% (3/125)
Lesion Success (per lesion)	100.0% (130/130)		
Device Success (per lesion)	93.8% (122/130)		
Procedural Success (per patient)	89.3% (117/131)		

The ITT population includes all enrolled subjects.
*There were 3 ITT subjects with missing CKMB measures that had sufficient follow-up (≥2 days) and 8 ITT subjects with CKMB measures at 12 hours that did not have sufficient follow-up (≥2 days); all of them are included in the denominator.
Myocardial infarction was defined using a modified version of the Joint ESC/ACC/AHA/WHF Task Force for the Redefinition of Myocardial Infarction and Academic Research Consortium criteria.
Acute stent thrombosis: ≤24 hours post stent implantation
Subacute stent thrombosis: >24 hours to 30 days post stent implantation
Late stent thrombosis: >30 days to 1 year post stent implantation
Device success: Attainment of <30% residual stenosis within the side branch using the assigned device only and without a device malfunction.
Lesion success: Attainment of <50% residual stenosis using any percutaneous method.
Procedure success: Lesion success without the occurrence of in-hospital MACE.

Patient Selection and Treatment

The risks and benefits should be considered for each patient before use of the TRYTON Side Branch Stent System. Patient selection factors to be assessed should include an evaluation regarding risk of long-term antiplatelet therapy. Stenting is generally avoided in patients at heightened risk of bleeding (e.g. those patients with recently active gastritis or peptic ulcer disease) in whom anti-platelet therapy would be contraindicated.

Premorbid conditions (i.e. diabetes mellitus, renal failure, severe obesity) that increase the risk of poor initial results or the need for emergency bypass surgery should be considered.

Recommended Additional Materials

- Radiographic contrast media diluted 1:1 with sterile saline
- An appropriate vascular sheath introducer and dilator set
- A guiding catheter of appropriate size, (as indicated on the product label), tip shape and length
- A guide wire with maximum diameter of 0.014”
- A hemostatic Y-adapter (I.D. of at least 0.096” is recommended)
- An inflation device with manometer readings from 0 to 20 ATM in 1 ATM increments
- An appropriately sized PTCA pre-dilation catheter
- 20 cc syringe
- Sterile heparinized normal saline
- Balloon Expandable Coronary Stent (main vessel)

Clinical Procedure

Use of this coronary stent and delivery system requires advanced angioplasty skills. The following instructions provide technical guidance but do not obviate formal training for the physician in the use of coronary stents and delivery systems. Only physicians who have received adequate training should perform implant of the TRYTON Side Branch Stent.

1. Choose the appropriate stent/balloon size using the results of diagnostic angiography and the stent matrix in Table 1 above. The TRYTON stent is mounted on balloon delivery systems with 2.5 mm Side Branch regions and larger.

It is important to insure that the TRYTON Stent is deployed in Side Branches of appropriate size, i.e., RVD ≥2.5 mm by visual estimate or ≥2.25 mm by QCA. Side branch measurement can be achieved by online QCA or utilizing the diameter of the pre-dilation balloon as a bench mark, e.g., 2.5 mm balloon inflated to nominal pressure provides an accurate reference to determine if a SB is >2.5 mm in diameter.

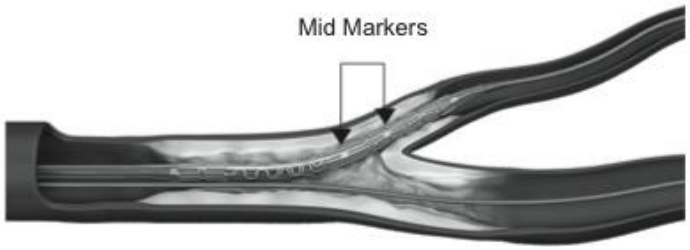
2. Remove the stent delivery system from the packaging and place in a sterile area using sterile technique.
3. Prior to using this device, all equipment, including the entire TRYTON Side Branch Stent/Stent Delivery System should be visually examined carefully for defects. Specifically, examine the distal balloon region for kinks or bends in the catheter and damage to the stent. Do not use any defective equipment.
4. Utilize standard techniques and the manufacturer's instructions to place the vascular sheath, guiding catheter, coronary stent (main vessel), and guide wire.
5. Stent Delivery System Preparation
   a. Utilize standard technique for the preparation of the TRYTON Side Branch Stent Delivery System
   b. Visually inspect the balloon/stent assembly to assure proper placement of the stent between the most distal and most proximal marker bands. Do not use any defective equipment.
      Note: You may not be able to see the two middle markerbands as they are located under the stent.
      Do not wipe the balloon / stent assembly as this may cause damage or dislodgement of the stent.
   c. Remove the protective mandrel from the guide wire lumen by pulling on the loop end of the mandrel at the guide wire exit port.

Use of the TRYTON Side Branch Stent/Stent Delivery System

Note: The physician(s) should consider and select an appropriate anticoagulation regimen.

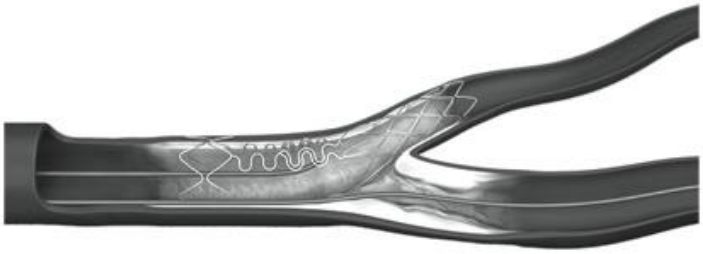
1. Place a guidewire across the lesion into the side branch and a second guidewire across the lesion into the distal main vessel.
2. Pre-dilate the side branch lesion with an appropriately-sized balloon in order to facilitate the tracking of the stent across the lesion. Note that the pre-dilation balloon when inflated can provide a reliable benchmark to aid in the visual assessment of the Side Branch RVD.
3. Advance the TRYTON Side Branch Stent/Stent Delivery System prepared in the CLINICAL PROCEDURE over the side branch guidewire to the treatment site.
4. Position TRYTON Side Branch Stent at the lesion site.
   Pay special attention to ensure that the mid markers on TRYTON Stent Delivery System straddle side branch origin.

   The two mid markers should straddle the ostium of the side branch.



   Caution: Do not apply excessive force to advance the TRYTON Side Branch Stent/ Stent Delivery System. If the advancement of the system is not possible in spite of adequate guiding catheter support, consider removing the TRYTON Side Branch Stent/ Stent Delivery System to perform additional pre-dilatation.
5. Do not attempt to pull an unexpanded stent back into the guiding catheter, as stent damage or stent dislodgement may occur. Movement in and out through the distal end of the guiding catheter should not be performed as the stent may be damaged when retracting the undeployed stent back into the guiding catheter. To withdraw the TRYTON Side Branch Stent system, the entire system with the guiding catheter should be removed as a single unit.
6. When removing the delivery system as a single unit:
   a. Do not retract the delivery system into the guiding catheter.
   b. Position the proximal balloon marker just distal to the tip of the guiding catheter.
   c. Advance the guidewire into the coronary anatomy as far distally as safely possible.
   d. Tighten the rotating hemostatic valve to secure the delivery system to the guiding catheter, then remove the guiding catheter and delivery system as a single unit.

7. If removal of the entire system with the guiding catheter as a single unit is not clinically feasible, prior to retracting the TRYTON Side Branch Stent/Stent Delivery System, all efforts should be made to ensure the **guiding catheter** is:
    a. **Coaxial** with the TRYTON Side Branch Stent/Stent Delivery System,
    b. **Disengaged** from the coronary artery, and
    c. **Withdrawn** into the aorta as far as feasible.
8. Failure to follow these steps and/or applying excessive force to the delivery system can potentially result in loss or damage to the stent and/or delivery system components.
9. Inflate the TRYTON Side Branch Stent Delivery System balloon, expanding the stent to optimize strut apposition against the arterial wall. Do not exceed the rated burst pressure of the balloon provided in the Compliance Chart included with the device
10. After stent deployment, deflate the balloon catheter and withdraw it while maintaining the guide wire position.
    Caution: Do not begin withdrawal of the delivery catheter until the balloon is fully deflated. Using fluoroscopic guidance, observe the withdrawal of the TRYTON Side Branch Stent Delivery System to ensure that the catheter does not catch onto the stent. If resistance is encountered, carefully advance the TRYTON Side Branch Stent Delivery System and gently withdraw.
11. Select an angioplasty balloon catheter using the proximal main branch reference vessel diameter as a guide. Position the catheter with the distal marker at the side branch origin and dilate the balloon to a maximum of 1:1 balloon to artery ratio.
12. Perform post TRYTON Side Branch Stent deployment angiography following administration of intracoronary nitroglycerin unless contraindicated. Confirm the position of the TRYTON Side Branch Stent within the artery and its proper apposition against the arterial wall.



13. Retract the post-dilation balloon while maintaining both guide wires.
14. With the assistance of fluoroscopy, re-position guide wire previously in side branch into main vessel distal to the side branch origin.
    - Use special attention to avoid guide wire retraction proximal to TRYTON Stent.
15. Select an appropriate Balloon Expandable Coronary Stent to treat the main vessel.
    -- Select stent with sufficient length to cover the entire lesion as well as to cover proximal portion of the TRYTON Side Branch Stent.
16. Prepare the Balloon Expandable Coronary Stent to treat main vessel according to its Instructions for Use.
17. Track Balloon Expandable Coronary Stent to lesion site within the main vessel such that the distal portion of the main vessel stent extends through the TRYTON Side Branch Stent. In addition, the proximal portion of the main vessel stent should cover the main vessel region of the TRYTON Side Branch Stent.
    a. If resistance is encountered when tracking the Balloon Expandable Coronary Stent across the proximal portion of the TRYTON Side Branch Stent, do not use excessive force.
        - Consider removal of Balloon Expandable Coronary Stent (main vessel) and perform ‘post-dilation’ of the main vessel portion of the TRYTON Side Branch Stent.
18. Remove initially placed ‘trapped’ main vessel guide wire after the Balloon Expandable Coronary Stent is positioned within the main vessel but before it is deployed.
19. Deploy Balloon Expandable Coronary (main vessel) Stent.
20. Retract Stent Delivery Balloon Catheter while maintaining guide wire position.
21. Select an additional guide wire and prepare according to Instructions for Use.
22. Under fluoroscopic guidance, advance the guide wire through proximal portion of the main vessel stent and into the side branch.
    - Use special attention to ensure that the guide wire enters the proximal portion of the main vessel stent via the lumen.
23. Utilizing appropriately sized balloon catheters, perform simultaneous balloon inflations in both the side branch and main vessel stent.
    a. Use special attention to ensure that both balloons are positioned within the stented arterial segments.
    b. Do not exceed the rated burst pressure for each balloon as specified in the Instructions for Use.
24. Remove both angioplasty balloon catheters.
25. Repeat angiography to confirm adequate stent expansion. Remove the guide wires.

26. Repeat angiography to re-confirm angiographic result.
27. Remove guiding catheter, using standard technique.
28. Discard all disposable devices used during this procedure per local requirements for medical device waste disposal.

MRI Safety Information

Non-clinical testing has demonstrated the TRYTON Side Branch Stent (19 mm stent alone and in combination with four 20 mm drug-eluting stainless steel stents, tested for a total stent length of 73 mm) is MR Conditional. A patient with this device can be safely scanned in an MR system meeting the following conditions:

- Static magnetic field of 3-Tesla or 1.5-Tesla
- Maximum spatial field gradient of 720 gauss/cm (7.2 T/m)
- Maximum MR system reported, whole body averaged specific absorption rate (SAR) of 2.0 W/kg (Normal Operating Mode)

Under the scan conditions defined above, the TRYTON Side Branch Stent is expected to produce a maximum temperature rise of less than 2.7°C after 15 minutes of continuous scanning.

In non-clinical testing, the image artifact caused by the device extends a maximum of 11 mm from the TRYTON Side Branch Stent when imaged with a gradient echo pulse sequence and a 3T MRI system.

References

The physician should consult recent literature on current medical practice on coronary stent procedures and balloon dilatation, such as those published by the American College of Cardiology and the American Heart Association.

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