Cardiovascular Systems, Inc.
Japan-US HBD East POC Update

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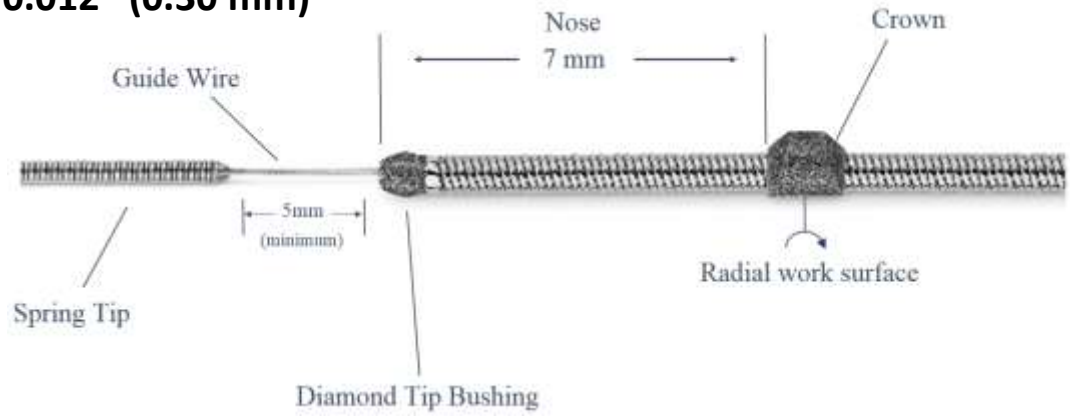
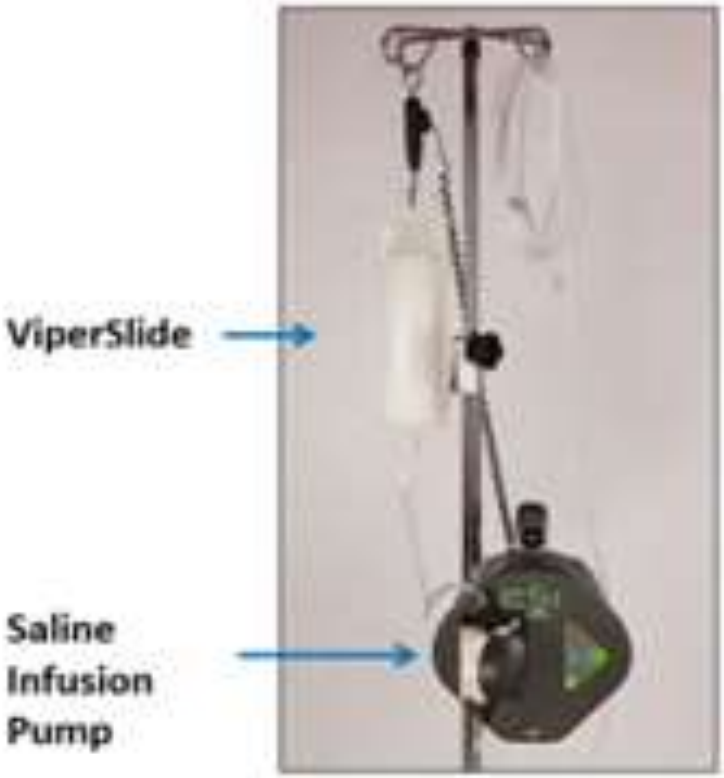
Next-Generation Coronary OAS Micro Crown

Orbital Atherectomy Device
(OAD)
6Fr Guide Compatible

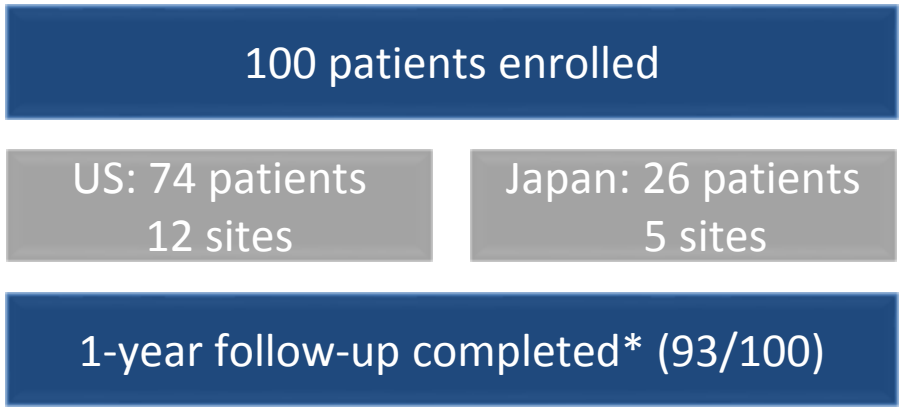
ViperWire
0.012” (0.30 mm)





COAST Trial: A HBD POC

- To evaluate the performance of the Coronary OAS Micro Crown in treating de novo, severely calcified coronary lesions
  - Prospective, single-arm, multi-center Investigational Device Exemption (IDE) study conducted in the US and Japan
  - Harmonization by Doing (Parallel Process in US and Japan)



*6 subjects died and 1 subject lost to follow-up

COAST HBD POC Timelines = A Successful Process

13 months from first PMDA meeting to enrollment completion:

Oct. 2013
- First informal meeting with PMDA

Feb. 2014
- First formal meeting with PMDA

Sept. 2014
- COAST protocol finalized with PMDA

Oct. 2014
- First Japanese COAST patient enrolled

Nov. 2014
- Last Japanese COAST patient enrolled

32 months from first FDA meeting to enrollment completion:

Nov. 2012
- 1st pre-submission meeting with FDA

Jan. 2014
- 2nd pre-submission meeting with FDA

April 2014
- IDE Conditional Approval

June 2014
- First US COAST patient enrolled

July 2015
- Last US COAST patient enrolled

Simultaneous Market Approvals and Press Releases

Cardiovascular Systems, Inc. Receives Approval for the Diamondback 360® Coronary Orbital Atherectomy System (OAS) Micro Crown in the United States

03/30/2017

- ***OAS Micro Crown Approved to Treat Severely Calcified Coronary Lesions***
- ***Only Atherectomy Device Designed to Both Pilot Tight Lesions and Treat Up to 4mm Vessels with a Single Device***

ST. PAUL, Minn.--(BUSINESS WIRE)-- Cardiovascular Systems, Inc. (CSI) (NASDAQ:CSII) announced that the United States Food and Drug Administration (FDA) has approved the Diamondback 360® Coronary OAS Micro Crown system to facilitate stent delivery in patients with coronary artery disease (CAD) who are acceptable candidates for PTCA or stenting due to *de novo*, severely calcified coronary artery lesions. 1

Cardiovascular Systems, Inc. Receives Approval for the Diamondback 360® Coronary Orbital Atherectomy System (OAS) Micro Crown in Japan

03/30/2017

- ***OAS Micro Crown Approved to Treat Severely Calcified Coronary Lesions***
- ***Attractive Japan Market Will Be CSI's First International Expansion***
- ***Only Atherectomy Device Designed to Both Pilot Tight Lesions and Treat Up to 4mm Vessels with a Single Device***

ST. PAUL, Minn.--(BUSINESS WIRE)-- Cardiovascular Systems, Inc. (CSI) (NASDAQ:CSII) announced that Japan's Ministry of Health, Labor and Welfare (MHLW) has approved the Diamondback 360 Coronary OAS Micro Crown as a frontline treatment for *de novo* severely calcified lesions and to facilitate access to the arteries for percutaneous coronary interventions (PCI) thereafter. 2

Dr. Shigeru Saito, said, "Interventional cardiologists who currently use atherectomy to perform complex PCIs for difficult-to-treat patients will have an important new alternative therapy, with a unique mechanism of action and corresponding strong clinical outcomes, to treat these patients." 2

1. http://investors.csi360.com/Investors/News-Releases/News-Release-Details/2017/Cardiovascular-Systems-Inc-Receives-Approval-for-the-Diamondback-360-Coronary-Orbital-Atherectomy-System-OAS-Micro-Crown-in-the-United-States/default.aspx. Accessed October 9, 2017.
2. http://investors.csi360.com/Investors/News-Releases/News-Release-Details/2017/Cardiovascular-Systems-Inc-Receives-Approval-for-the-Diamondback-360-Coronary-Orbital-Atherectomy-System-OAS-Micro-Crown-in-Japan/default.aspx. Accessed October 9, 2017.

Micro Crown Approvals and Indications

- Regulatory approvals were granted 3 months after final 1-year clinical report submitted

- US indication for use:

  Indicated to facilitate stent delivery in patients with coronary artery disease (CAD) who are acceptable candidates for PTCA or stenting due to de novo, severely calcified coronary artery lesions.

- Japan intended use and indication:

  The Orbital Atherectomy System (OAS) is inserted into the coronary arteries to ablate de novo, severely calcified lesions and to facilitate access to the arteries for PCI thereafter.

Current Status and Next Steps

- Initiated limited launch of Micro Crown in US
- Reimbursement application has been submitted to MHLW
- Preparing for Japan launch with Medikit (Japanese distribution partner)
- Global Post-Market Registry
  - Collect post-market data in Japan and US
  - Leverage best practices from real-world experience from both countries
  - Global PI: Dr. Shigeru Saito

COAST: HBD POC Conclusions

Keys to HBD success that led to near simultaneous market approvals:

- **Consistent communication** with FDA, PMDA, and MHLW (early and often) is key to a successful study and subsequent reimbursement.
- **Single-protocol** initiated simultaneously in Japan and US saves cost and speeds the process.
- Understanding differences with **Japan and US Good Clinical Practices (GCP)**.
- **Concurrent regulatory submission and review** in both countries.
- **Strong partnerships**: COAST Investigators, CRO (CMIC), regulatory consultant/DMAH (Vorpal Technologies) and distribution partner (Medikit).