Thursday, April 27, 2017

22nd CARDIOVASCULAR SUMMIT
TCTAP2017

DAILY NEWS

Today's Highlights

Valve Symposium
8:30 AM - 12:30 PM
Valve Theater, Level 1

Coronary Symposium
8:30 AM - 4:30 PM
Coronary Theater, Level 1

Spotlights of New Clinical Trials & 2017 New Data from AMC
8:40 AM - 12:18 PM
Presentation Theater, Level 1

TCTAP Award 2017 "Best Young Scientist Award"
12:18 PM - 12:30 PM
Presentation Theater, Level 1

Moderated Abstract & Case Competition
8:30 AM - 12:30 PM
Abstract & Case Zone, Level 3

Challenging Case Competition with Experts' Focus Review
2:00 PM - 5:50 PM
Presentation Theater, Room 105, Level 1

20th KCTA Symposium
2:00 PM - 5:30 PM
Valve Theater, Level 1

Satellite Symposia
Morning Roundtable Forum
@ 7:00 AM - 8:10 AM
Lunchtime Activities
@ 12:45 PM - 1:45 PM

Inside this Issue

2017 New Data from AMC; Novel and More

This year, six distinguished clinical trials will be presented in the session on subjects regarding left main disease, multi-vessel disease, FFR, TAVR, and CTO. All these presentations merit attention, since the studies dealt with issues of great interest in the field of interventional cardiology.

IRIS-MAIN Registry: Assessing Generalizability of EXCEL and NOBLE

Pil Hyung Lee, MD
Asan Medical Center, Korea

Dr. Pil Hyung Lee will present the results of a study that uses large-scaled IRIS-MAIN registry to assess the generalizability of the findings from recent EXCEL and NOBLE trials. These two important left main trials showed somewhat similar but also opposing comparative results of PCI and CABG; EXCEL found PCI to be comparable to CABG, while NOBLE suggested CABG to be still better than PCI. With this background, the investigators intended to compare baseline clinical and procedural characteristics of patients who were enrolled in EXCEL and NOBLE with those of patients who were enrolled in unrestricted, "all-comers" IRIS-MAIN registry, as well as to compare the relative treatment effect of PCI and CABG in EXCEL and NOBLE with the results from the real-world registry.

There were between-study differences in patient risk profiles (age, body-mass index, diabetes, and clinical presentation), lesion complexities, and procedural characteristics (stent type, the use of off-pump surgery and radial artery); the proportion of diabetes and acute coronary syndrome was particularly lower in NOBLE than in other studies. With respect to serious composite outcome (death, MI, or stroke), the risks were similar between PCI and CABG in EXCEL (HR, 1.00; 95% CI, 0.79–1.26; *p*=0.98) and in matched cohort of IRIS-MAIN (HR, 1.08; 95% CI, 0.85–1.38; *p*=0.53), while it was significantly higher after PCI than after CABG in NOBLE (HR, 1.47; 95% CI, 1.06–2.05; *p*=0.02), which was driven by more common MI and stroke after PCI (**Figure 1**). Although several issues of EXCEL and NOBLE trials exist, it appears that the baseline characteristics and results are relatively similar in EXCEL and in this large registry, and, therefore, EXCEL is more generalizable than NOBLE in terms of inclusion and outcomes.

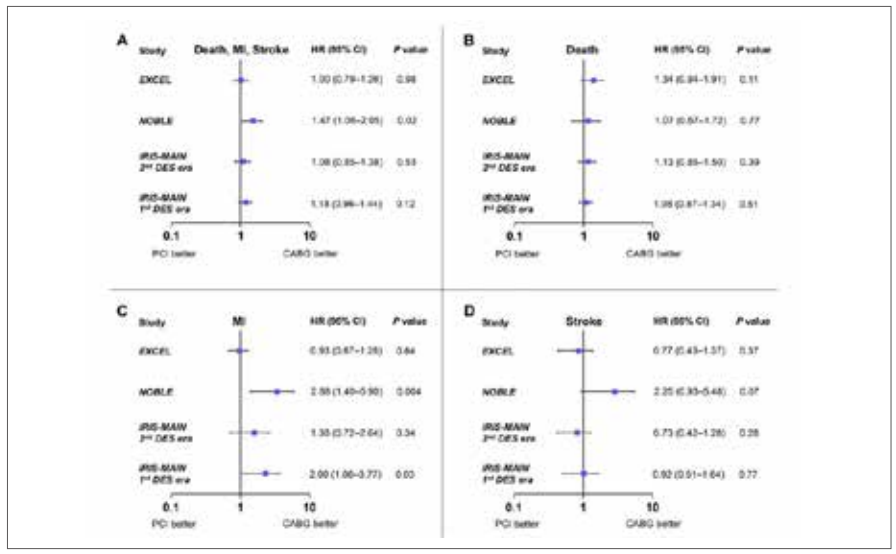

Figure 1.

Continued on page 4

Late Breaking Clinical Trial | Coronary Symposium | BRS & DES | TCTAP 2017 Wrap up Interview | The 20th KCTA Symposium
The 7th TCTAP Master of the Masters Award | Hot Abstract | Hot Case | The 5th TCTAP Best Young Scientist Award

General information

Shuttle Bus

Free shuttle bus is provided between COEX and several venue hotels. Visit the **CVRF booth** for more information.

Certificate of Attendance

Certificate of Attendance for TCTAP 2017 will be distributed along with the badge.

- Registration Booth, Level 3

Cyber Station / Free Mobile Recharge

- Lounge, Exhibition Hall, Level 3
- Lounge, Grand Ballroom Lobby, Level 1

Lost and Found / Coat Room

Hours: **8:00 AM - 6:00 PM**

- Coat Room (next to Room 1A), Level 3

Tour Information

Tour information will be provided by COSMO JIN Tour and Seoul Metropolitan Government.

- Information Booth, Grand Ballroom Lobby, Level 1
- Seoul Promotional Booth, Grand Ballroom Lobby, Level 1

The 5th TCTAP Best Young Scientist Award Ceremony

Thursday, April 27, 12:18 PM / Presentation Theater

TCTAP is rooting for young interventional cardiologists.

The award is annually bestowed to one of the young physicians to encourage their academic and clinical work experience with the amount of **5,000 USD**.

Submission Opens on July 17, 2017

Apply if you
- Have career within 5 years of the start of their fellowship or training period under the age of 40.
- Share your own patient care experience with knowledge and understanding in the clinical practice in TCTAP
- Introduce new, advanced solutions to complicated issues in TCTAP

* Applicants who were selected as best abstract/ case presenters by the scientific committee in one of the CVRF meetings will get extra points.

Contact: Emilie Cho (emliecho@sumitmd.com)

Program at a Glance: Thursday, April 27, 2017

	Valve Theater *Level 1*	CoronaryTheater *Level 1*	PresentationTheater *Level 1*	Room 105 *Level 1*	Other Session Rooms	Abstract Zone I, II *Level 3*	Case Zone I, II, III *Level 3*
07:00							
07:30	Satellite Symposia - Morning Roundtable Forum						
08:00							
08:30							
09:00							
09:30	Valve Symposium Live Cases & Lectures	Coronary Symposium Live Cases & Lectures	Sportlights of New Clinical Trials & 2017 New Data from AMC/ TCTAP Best Young Scientist Award			Moderated Abstract Competition	Moderated Complex Case Competition
10:00							
10:30							
11:00							
11:30							
12:00							
12:30							
13:00	Satellite Symposia - Lunchtime Activitie						
13:30							
14:00							
14:30		Coronary Symposium Live Cases & Lectures					
15:00							
15:30	20th KCTA Symposium		Challenging Case Competition with Experts' Review I	Challenging Case Competition with Experts' Review II			
16:00							
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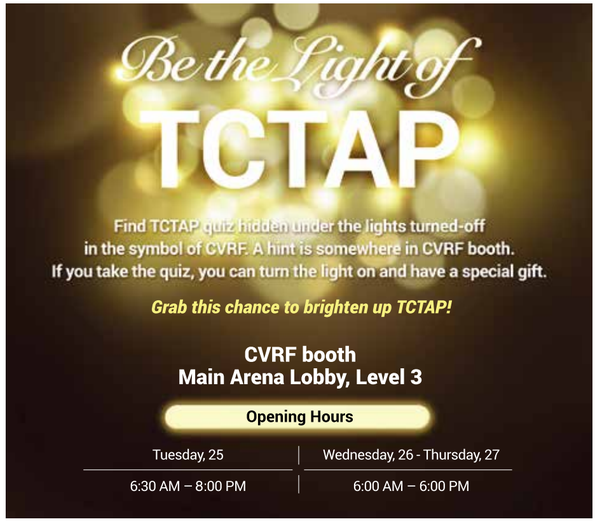
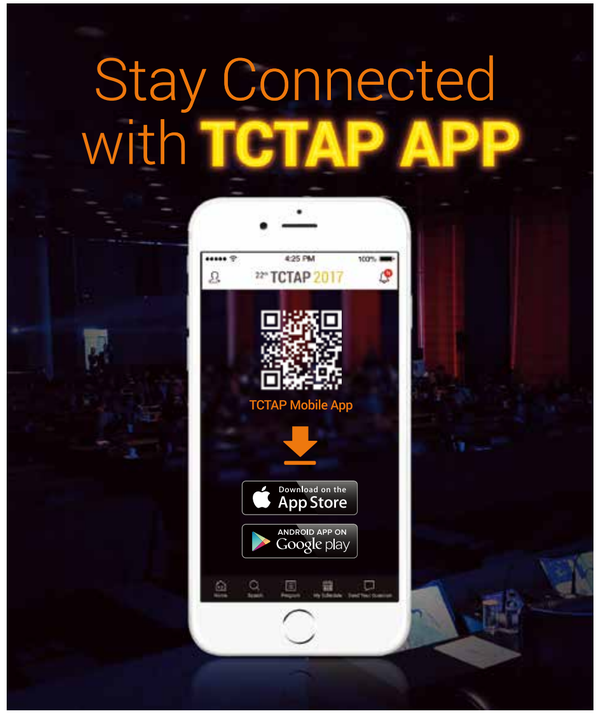




Live Case Transmission from World-Renowned Medical Centers

Asan Medical Center, Seoul, Korea
- 8:30 AM ~ 10:00 AM @ Coronary Theater, Level 1
- Operator(s): (Case #5) Jung-Min Ahn
  (Case #6) Ashok Seth, Seung-Whan Lee
- 10:00 AM ~ 11:30 AM @ Valve Theater, Level 1
- Operator(s): (Case #3) Darren L. Walters,
  (Case #4) Duk-Woo Park
- Echo Interpreter: Ran Heo
- 11:20 AM ~ 12:30 PM @ Coronary Theater, Level 1
- Operator(s): (Case #7) Thierry Lefevre
  (Case #8) Alan C. Yeung, Pil Hyung Lee
- 11:30 AM ~ 12:30 PM @ Valve Theater, Level 1
- Operator(s): (Case # 5) Duk-Woo Park
  (Case # 6) Seung-Jung Park, Jung-Min Ahn
- Echo Interpreter: Ran Heo
- 2:00 PM ~ 3:30 PM @ Coronary Theater, Level 1
- Operator(s): (Case #9) Duk-Woo Park
  (Case #10) Seung-Jung Park, Jung-Min Ahn

Severance Hospital, Seoul, Korea
- 10:00 AM ~ 11:20 AM @ Coronary Theater, Level 1
- Operator(s): Myeong-Ki Hong, Byeong-Keuk Kim, Yongsung Suh
- IVUS Interpreter: Jung-Sun Kim

St. Paul Hospital, Vancouver, Canada
- 8:30 AM ~ 10:00 AM @ Valve Theater, Level 1
- Operator(s): John Graydon Webb, David Wood

EMO Centro Cuore Columbus, San Raffaele Hospital, Italy
- 3:30 PM ~ 4:30 PM @ Coronary Theater, Level 1
- Operator(s): Antonio Colombo, Azeem Latib, Matteo Montorfano

2017 New Data from AMC; Novel and More

Continued from page 1

Asan-MV Registry: Confusing MI Definition in Studies Comparing PCI and CABG

Min Soo Cho, MD
Asan Medical Center, Korea

Next, Dr. Min Soo Cho will present the results of Asan-Multivessel Registry to assess the incidence and clinical impact of periprocedural MI according to different definitions of MI. Until recently, the protocol de-finition of MI was mostly different in recent landmark clinical trials comparing PCI with DES and CABG, which could lead to an imprecise estimate of the relative treatment effect. This issue was also highlighted in the EXCEL and NOBLE trials, since the different results of two left main trials were partly attributed to the different definition of MI used by protocol. The investigators evaluated 7,697 patients with multivessel disease who received PCI (n=4,514) or underwent CABG (n=3,183) between January 2003 and December 2013, and for whom serial measurement of CK-MB was completely available. Patients were followed for major cardiovascular events (death from cardiovascular causes and spontaneous MI) and death for a median of 4.7 years.

They found that, according to various definitions of MI, there was a substantial difference in the rates of periprocedural MI after PCI and CABG (18.6% vs. 2.9% by second universal definition; 3.2% vs. 1.9% by third universal definition; and 5.8% vs. 18.2% by SCAI definition, respectively, **Figure 2**). The presence of periprocedural MI was associated with increased risks of major cardiovascular events after both PCI and CABG regardless of MI definition. The risk-adjusted 5-year rates of future major cardiovascular events after occurrence of periprocedural MI were similar after PCI and CABG in second (16.1% vs. 20.4%; hazard ratio [HR], 0.79; 95% CI, 0.44–1.42; *p*=0.43) and third universal definitions (16.3% vs. 21.5%; HR, 0.71; 95% CI, 0.29–1.74; *p*=0.46). However, using SCAI definition, the rates of major cardiovascular events was significantly higher after PCI than after CABG (23.9% vs. 20.3%; HR, 1.50; 95% CI, 1.02–2.20; *p*=0.04).

In summary, there were substantial differences in the incidence and prognostic impact of periprocedural MI after PCI and CABG, according to various definitions of MI that are currently being used. He emphasized that, to diminish the uncertainty of any conclusions regarding the relative treatment effect in future trials comparing PCI and CABG, a more applicable definition of periprocedural MI not penalizing a specific revascularization group is warranted for future research.

How To Manage Gray Zone FFR: Data from IRIS FFR Registry

Seung-Jung Park, MD
Asan Medical Center, Korea

Finally, Dr. Seung-Jung Park will present the results from the analysis of a prospective multicenter IRIS FFR registry, a database that he used to assess the prognosis of deferred and revascularized coronary stenoses with gray zone FFR (0.76-0.80). The study was conducted on the background that the optimal cutoff value of FFR for revascularization is in debate. A total of 1,126 native coronary stenoses (in 1,126 patients) with gray zone FFR were included in this study. Among these, PCI was deferred in 623 lesions and performed in 503 lesions. The primary endpoint evaluated was MACE, defined as a composite of death, MI, and target vessel revascularization, arising from FFR measured lesions.

During a median follow-up of 3.2 years (interquartile range, 1.8-4.2 years), MACE occurred in 49 (7.9%) and 45 (8.9%) patients in deferred and revascularized groups, respectively. Revascularization was not associated with a reduced risk of MACE (adjusted HR, 0.90; 95% CI, 0.55-1.45; *p*=0.66) and was consistent across all FFR ranges (**Figure 3**). The risk of death, cardiac death, spontaneous MI, and the composite of death and spontaneous MI also did not differ between groups, while the risk of the every MI including periprocedural MI was lower (aHR, 0.29; 95% CI, 0.10-0.87; *p*=0.026) and target vessel revascularization was higher (aHR, 2.29; 95% CI, 1.17-4.50; *p*=0.016) in the deferred group. The results were consistent after adjustment by propensity-score matching and inverse probability-of-treatment weighting (**Figure 4**).

Although target vessel revascularization was significantly higher in the deferral group, procedures were generally performed in a stable clinical setting (83.3%), whereas only two of the 36 target vessel revascularizations presented with MI. Based on this study, it can be concluded that, for coronary stenoses with gray zone FFR, revascularization is not associated with better clinical outcomes, and medical treatment would be a reasonable and safe strategy.

DECISION-CTO Trial: Treat or Not Treat CTO

Seung-Whan Lee, MD
Asan Medical Center, Korea

Dr. Seung-Whan Lee will present the result of the DECISION-CTO randomized clinical trial, which focused on whether optimal medical treatment (OMT) could be a reasonable initial treat-ment strategy for CTO, as compared with PCI. DECISION-CTO was a multicenter, randomized, non-inferiority trial conducted at 19 cardiac centers in Asia. The original plan was to randomly assign 1,284 patients with coronary CTO to undergo either OMT or PCI, but unfortunately the study was terminated early due to slow recruitment after enrolling 815 analyzable patients between March 2010 and September 2016. The trial's primary endpoint was a composite of death, myocardial infarction, stroke, or any repeat revascularization at three years after randomization, with pre-specified non-inferiority margin of 0.7 for event rate ratio. In the intention-to-treat population (398 in the OMT group and 417 in the PCI group), there was no significant difference in the primary endpoint between groups (HR, 0.95; 95% CI, 0.74-1.22; *p*=0.67).

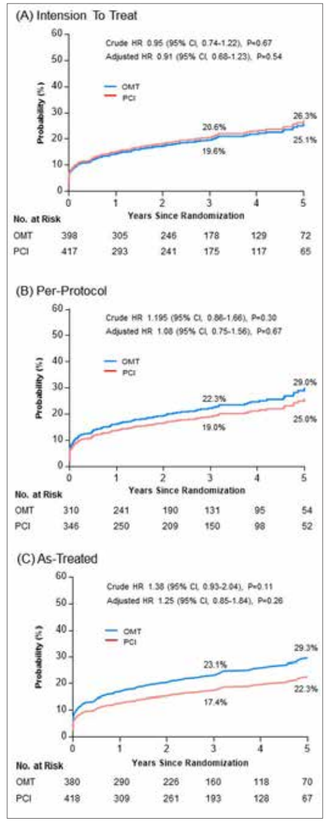


Figure 5. IRIS-DES Registry: Temporal Trend of Bifurcation Treatment and Outcome

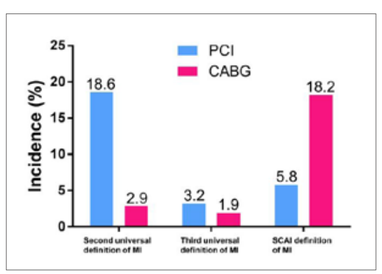


Figure 2. Differential rates of periprocedural MI after PCI and CABG, according to various definitions

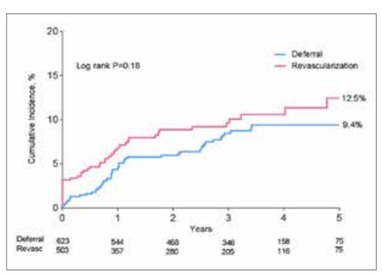


Figure 3. Kaplan-Meier curves for MACE in overall population

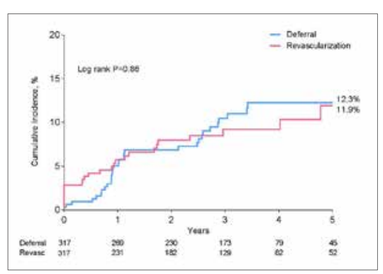
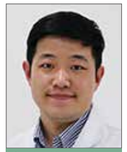


Figure 4. Kaplan-Meier curves for MACE in propensity-score matched population

The estimated event rate ratio of the PCI to the OMT group at 3 years for the primary endpoint was 1.05, which met the predefined criterion for non-inferiority (one-sided lower 97.5% confidence limit, 0.75; *p*=0.008 for non-inferiority). Measures of health-related quality of life did not differ significantly between the two groups over time. However, the per-protocol analysis for the primary endpoint did not meet the predefined criterion for non-inferiority (estimated event rate ratio, 0.86; one-sided lower 97.5% confidence limit, 0.59; *p*=0.15 for non-inferiority, **Figure 5**). There were 16.8% of overall patients who did not adhere to the assigned treatment. Compared with protocol-adherent patients, those who were initially assigned to PCI and crossed over to OMT yielded higher event rates, whereas those who were assigned to OMT and crossed over to CTO-PCI showed lower event rates in the post-hoc analysis. Excluding these patients in the per-protocol analysis relatively increased the event rate in the OMT assigned group, whereas it decreased the event rate in the PCI assigned group. Although the non-inferiority of OMT to PCI was not clearly demonstrated, the DECISION-CTO study suggests that OMT could be a reasonable treatment strategy for coronary CTO.

IRIS-DES Registry: Temporal Trend of Bifurcation Treatment and Outcome



Se Hun Kang, MD
CHA Bundang Medical Center, CHA University, Korea

Dr. Se Hun Kang will present the results of a pooled analysis of two multi-center IRIS-DES and IRIS-MAIN registry (n=7,282) and used the data to evaluate secular changes of characteristics, treatment pattern, and outcomes in the real-world population with coronary bifurcation disease. The IRIS-DES involves a prospective, multicenter recruitment of unrestricted patients undergoing PCI with DES in Korea and consists of several different DES arms of first- and second-generation devices.

The investigators found that, over the time from the first-generation DES to the second-generation DES, more patients have been treated with simple stenting strategy than complex 2-stents strategy, and this pattern was consistent for patients with non-LM bifurcation lesions and those with LM bifurcation lesions (**Figure 6**). Regarding the clinical outcomes, the 3-year risks for target-vessel failure (TVF) declined from 19.4% (95% CI, 17.3–21.5) in the first-generation DES to 17.1% (95% CI, 16.1–18.1) in the second-generation DES (*p*=0.03). Overall, complex stenting strategy was associated with a higher risk of TVR compared with simple stenting strategy (adjusted hazard ratio [HR], 1.28, 95% CI, 1.12–1.47; *p*<0.001). However, the risk of TVR with complex strategy relative to simple strategy have gradually decreased from the first-generation DES (HR, 1.56; 95% CI, 1.22–1.99; *p*<0.001) to the second-generation DES (HR, 1.12; 95% CI, 0.94–1.34; *p*=0.19). From first-generation DES to the second-generation DES, stenting strategy has been more simplified, and PCI outcomes have improved for patients with bifurcation disease. Such changes of our daily practices are progressing toward the appropriate direction to benefit our patients.

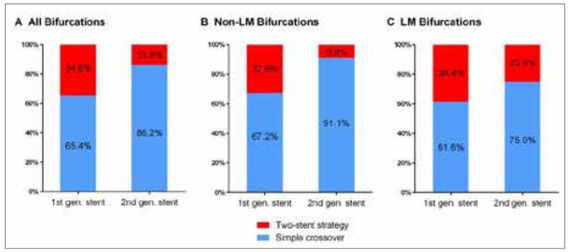


Figure 6. Proportion of bifurcation stenting strategy over time

2017 New Data from AMC; Novel and More
›› Thursday, April 27, 9:54 AM ~ 11:06 AM
›› Presentation Theater, Level 1

2017 Late Breaking Clinical Trials

Breaking Trials session at TCTAP 2017, the 22nd annual cardiovascular summit-TCTAP meeting, sponsored by CVRF and held April 25th-27th, 2017 at COEX Convention Center in Seoul. Many large randomized control trials and registries have shown significant reduction of revascularization with the first generation of drug eluting stents (DES). Later, the second generation DES relieved the late or very late stent thrombosis of the first generation DES by developing biocompatible or biodegradable polymers and thinner struts. Despites these improvements, the new DES has not overcome all the limitations due to the following: (1) persistent risk of in-stent restenosis, (2) hindrance of late lumen gain, (3) lack of physiological motion of a native vessel, and (4) risk of very late stent thrombosis. Therefore, interventional cardiologists felt the need for a new device, and, as a result, bioresorbable vascular scaffolds (BVS) began to appear in the limelight. BVS has been designed to endure the mechanical force, such as acute recoil, for a certain period of time, and to prevent neointimal proliferation by eluting immuosuppressive agents. With these ideal designs and theoretical concepts, BVS has many advantages (1) reduction of long-term adverse events from permanent metal, (2) maintenance of vascular physiology, (3) ability to use computed tomography or magnetic resonance image, (4) suitable to select availability of a second (surgery or percutaneous), and (5) efficacy in young patients. Although long-term follow-up data from Absorb BVS support these benefits, relatively high incidence of thrombosis is emerging. We need to discuss how to reduce the rate of clinical events with evaluation of procedural technique and selection of device. Today, the Late-Breaking Clinical Trial session will focus on the real world data of BVS and discuss the current limitations and solutions.

Early Clinical Outcomes Following "Off-" Versus "On-label" Indications of Bioresorbable Vascular Scaffolds for the Treatment of 1505 Patients with Coronary Artery Disease: Results from the Prospective "Registro Absorb Italiano" (RAI Registry)

Alfonso Ielasi, MD
Bolognini Hospital, Seriate, Italy

LBCT

Dr. Alfonso Ielasi (Bolognini Hospital, Seriate, Italy) and Dr. Elisabetta Moscarella (Second University of Naples AO Dei Colli, Italy) will present three data from the Registro Absorb Italiano (RAI Registry, **Figure 1**).

RAI (Clinical Trials. Gov Identifier: NCT02298413) is an Italian, prospective, multicentre registry, not funded by the manufacturer, whose aim is to investigate the BVS performance through a 5-year follow-up of all consecutive patients who have undergone successful implantation of 1 or more BVS in different lesions subsets. Co-primary endpoints were target lesion revascularization (TLR) and BVS definite/probable thrombosis. The secondary endpoint was the occurrence of device-oriented cardiac events (DOCE). The registry started in October 2012 and the last patient was enrolled in December 2015.

Dr. Ielasi will present interesting data about off-label using of BVS in real-world practice from the RAI registry. The purpose of the early clinical outcomes following "off-" versus "on-label" indications of BVS was to evaluate the 30-day clinical outcome, following BVS (Absorb BVS, Abbott Vascular, Santa Clara, CA) implantation in real-world patients with complex lesions. BVS appears to be an attractive alternative to metallic DES and has rapidly extended its off-label usage (**Figure 2**). However, recent studies have reported the risk of scaffold thrombosis that may be related to procedural factors, as well as to patients' characteristics. After hearing today's presentation, we wonder if the audience will be able to accept the use of off-label with treating BVS in complex coronary artery.

A Hybrid Strategy with Bioresorbable Vascular

Figure 1. "Registro ABSORB Italiano" RAI registry

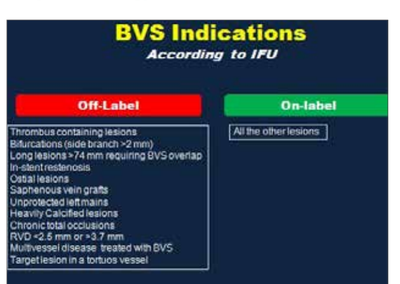


Figure 2. BVS indications

Scaffolds and Drug Eluting Stents for Treating Complex Coronary Lesions

The second presentation of Dr. Ielasi will be "A Hybrid Strategy with Bioresorbable Vascular Scaffolds and Drug Eluting Stents for Treating Complex Coronary Lesions". Although interventional cardiologists widely use BVS for various coronary lesions, they still find it difficult to use it because of its structural limitations or problems of the vessel itself. In this situation, the physicians could choose a hybrid approach that allows DES and BVS to operate on the appropriate lesions. Dr. Ielasi and investigators studied the feasibility and results following the use of a hybrid approach using BVS (Absorb BVS, Abbott Vascular, Santa Clara, CA) and DES for the treatment of complex coronary artery lesions (**Figure 3**). This study was a retrospective, multicenter, cohort study. The primary endpoint was target lesion failure (TLF) defined as a composite of cardiac death, target-vessel myocardial infarction (MI) and TLR at 12 months. The audience will have the opportunity to discover how to overcome diffuse long lesions with different vessel size and side branch lesion, as well as the results after using the hybrid approach with BVS and DES.

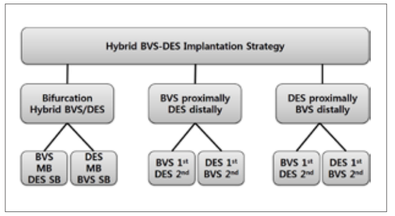


Figure 3. Hybrid BVS-DES implantation strategy

Bioresorbable Vascular Scaffold in Real World Practice: Single Center Experiences

Jing-Yi Jhang, MD
National Taiwan University Hospital, Taiwan

Dr. Jing-Yi Jhang (National Taiwan University Hospital, Taiwan) will present on the findings regarding the procedural features, efficacy, and safety of using BVS in real world cases (**Figure 4**). The ischemia-driven TLR, target vessel failure (TVF: cardiac death, myocardial infarction, TLR), and definite/probable scaffold thrombosis were assessed at 30 days, 6 months, and 12 months. Dr. Wang evaluated not only the frequency of using optical coherence tomography (OCT), intravascular ultrasound (IVUS), but also various technique for delivering BVS.

Early Experience and Favorable Clinical Outcomes of Everolimus-eluting Bioresorbable Scaffolds for Coronary Artery Disease in Korea; Excellent Procedural Outcome with Intravascular Imaging Support

Anthony Yiu Tung Wong, MD
Queen Mary Hospital, China

Dr. Anthony Yiu Tung Wong (Queen Mary Hospital, China) will report the 1-year outcome of the IRIS-BVS Registry (**Figure 5**). This registry was designed as a multicenter, prospective and observational study in Korea. The objective of IRIS-BVS was to compare the outcomes of BVS with other DES in "real world practice". Target number of patients was a total of 2,000 and the follow-up duration was 5 years. The primary endpoint was TVF at 1 year. With good insurance coverage in Korea, it is relatively easy to use non-compliance balloon for pre- and post-dilatation and intravascular image during procedure. It is worth noting whether following the company's guidelines of BVS will produce better results compared to those of clinical trials. Today's presentation

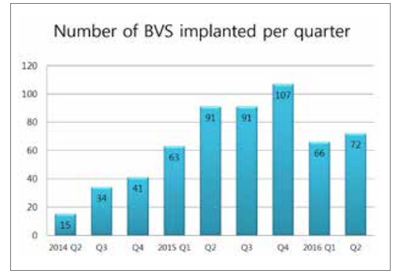


Figure 4. Number of BVS implanted per quarter

will provide better understanding of the difference between the real-world and clinical trial setting practice with BVS.

30-day Clinical Outcomes Following Bioresorbable Vascular Scaffold Implantation in Patients Presenting with Acute Coronary Syndromes Versus Stable Coronary Artery Disease: Results from the Italian RAI Registry

Elisabetta Moscarella, MD
Second University of Naples AO Dei Colli, Italy

Dr. Moscarella will present the 30-day clinical outcomes following BVS implantation in acute coronary syndrome (ACS) versus stable coronary artery disease from the RAI registry. ACS has shown to increase the risk of DES thrombosis and, to date, data on percutaneous coronary intervention with BVS implantation in patients presenting with ACS are still li- mited. BVS would be a more attractive choice in ACS because the patients are generally younger with a longer life expectancy, and have soft plaque to expand the BVS. However, the use of BVS in ACS could be dangerous because of higher pro-thrombotic state and lager strut of BVS compared with DES. We need to pay attention to the frequency of using vascular image and potential antithrombotic agent like glycoprotein IIb/IIIa inhibitors in the RAI registry.

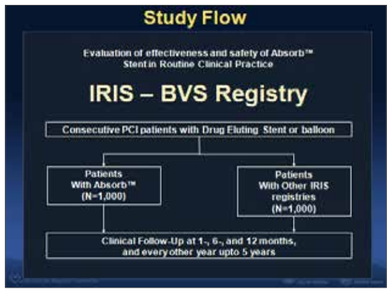


Figure 5. IRIS-BVS registry study flow

First-in-human Evaluation of a Novel Poly-L-lactide Based Sirolimus-eluting Bioresorbable Vascular Scaffold for the Treatment of De Novo Native Coronary Artery Lesions: MeRes-1 Trial

Ashok Seth, MD
Fortis Escorts Heart Institute, India

Dr. Ashok Seth (Fortis Escorts Heart Institute, India) will present data from the MeRes-1 trial. The MeRes-1 is a prospective, multicenter, first-in-human trial of MeRes100 Sirolimus-eluting bioresorbable vascular scaffolds (BRS) (Meril Life Science, Vapi, India, **Figure 6**), which evaluated BRS as the solution to overcome the limitations of DES, which interferes with the restoration of vasomotion and restricts quality lesion imaging during repeat surgical or percutaneous treatment.
The primary endpoint was major adverse cardiac events (MACE) at six months, defined as a composite of cardiac

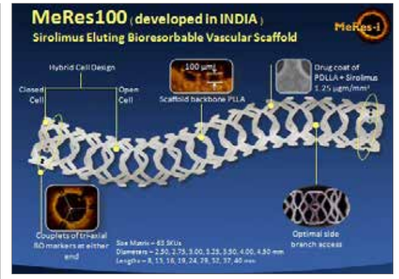


Figure 6. MeRes100 (developed in India)

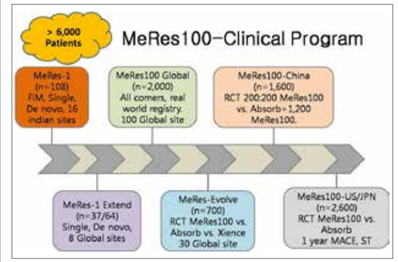


Figure 7. MeRes100-Clinical program

death, myocardial infarction, and ischemia driven-target vessel revascularization (TVR). The secondary endpoints were MACE, scaffold thrombosis (ST), in-scaffold late lumen loss (LLL) and device-related serious adverse events at subsequent follow-ups. Clinical follow-ups were scheduled at 1, 6, 12, 24 and 36 months. Angiographic, OCT and IVUS follow-ups were scheduled at 6 and 24 months. This new BRS has a low profile delivery system with thinner struts (100 µm) and three radiopaque markers at each end. We can see the results of the first step among several studies that will be conducted in the future (**Figure 7**). We hope that the new BRS can successfully remain in the hands of physician through these future trials.
The BRS has shown the possibility to repair coronary artery. However, recent large trials raised concerns about the safety and efficacy. The investigators should conduct well-designed research for development of the next generation of BRS, and clinicians should pay attention to select suitable lesion for treating with BRS. So far, we have had a rapid evolution of the DES, and the next BRS with further development would replace the position of the DES.

TCTAP 2017-Late Breaking Clinical Trials from Abstracts

›› Thursday, April 27, 11:06 AM ~ 12:18 PM
›› Presentation Theater, Level 1

Hot Topic

BRS & DES

What is the optimal duration of DAPT after PCI with DES?

David J. Cohen, MD
Saint Luke's Mid America Heart Institute, USA

Coro

Dual antiplatelet therapy is recommended after coronary stenting to prevent thrombotic complications, yet the benefits and risks of treatment beyond 1 year were uncertain. The Dual Antiplatelet Therapy (DAPT) study was the largest international, multicenter, randomized, placebo-controlled trial to determine the benefits and risks of continuing dual antiplatelet therapy beyond 1 year after the placement of a coronary stent.

Patients were enrolled 72 hours after stent placement and were given open-label aspirin and thienopyridine for 12 months. At 12 months, patients without an ischemic or bleeding complication and with documented compliance were randomized in a 1:1 fashion to receive additional 18 months of DAPT or matching placebo. A total of 9,961 patients were randomized at 452 sites in 11 countries: 5,020 to prolonged DAPT and 4,941 to placebo. Approximately two thirds of the patients received clopidogrel, whereas the rest received prasugrel. The primary endpoint of major adverse cardiac and cerebrovascular events (MACCE) was significantly lower in the continued DAPT arm compared with placebo (4.3% vs. 5.9%, hazard ratio 0.71, 95% confidence interval 0.59-0.85, p<0.001, **Figure 1**). There were reductions in all MI (2.1% vs. 4.1%, p<0.001) and stent thrombosis (0.4% vs. 1.4%, p<0.001), but all-cause mortality was higher (2.0% vs. 1.5%, p=0.05), driven mostly by an increase in non-cardiovascular deaths (1% vs. 0.5%, p=0.002), including cancer-related death (0.62% vs. 0.28%, p=0.02) and bleeding-related death (0.22% vs. 0.06%, p=0.06). GUSTO moderate and severe bleeding was also higher with DAPT (2.5% vs. 1.6%, p=0.001), as was BARC 2, 3, or 5 bleeding (5.6% vs. 2.9%, p<0.001).

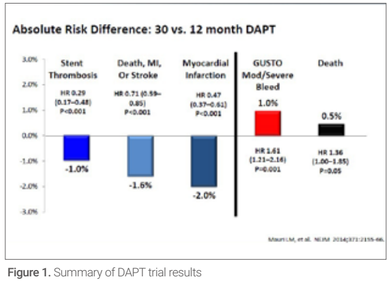


Figure 1. Summary of DAPT trial results

In addition, based on the relative risks of ischemia (stent thrombosis and MI) and bleeding (GUSTO moderate or severe) between 12 and 30 months, a prediction score (DAPT score) was created (**Figure 2**). Final variables were age, prior PCI or MI, stent diameter <3 mm, chronic heart failure or left ventricular ejection fraction <30%, MI at presentation, PES, smoking and diabetes (range for score: 3-8). Patients with lower scores (<2) had a lower ischemic risk and a higher bleeding risk, while patients with higher scores (≥2) had a higher ischemic risk and a lower bleeding risk (For DAPT <2: stent thrombosis or MI: 1.7% vs. 2.3%, p=0.07; bleeding: 3% vs. 1.4%, p<0.001. For DAPT ≥2: stent thrombosis or MI: 2.7% vs. 5.7%, p<0.001; bleeding: 1.8% vs. 1.4%, p=0.26.).

The results of the DAPT trial indicated that prolonged duration of DAPT up to 30 months following index PCI with a DES results in lower rates of stent thrombosis and recurrent MIs compared with a 12-month duration of DAPT, although bleeding and all-cause mortality were higher with prolonged therapy.

Based upon current investigations including the DAPT trial, the optimal duration of DAPT could be summarized as the following.

For most patients undergoing PCI with current-generation DES, 6-12 months of DAPT represents a reasonable balance between safety and efficacy. For selected patients at very high risk of bleeding, shorter durations of DAPT (3-6 months) are likely sufficient. For patients who present with ACS and have additional risk factors for recurrent events, longer term therapy (>2 years) should be strongly considered as long as bleeding risk is not excessive. Finally, the DAPT score may be a useful tool for individualizing decisions regarding dual antiplatelet duration in patients post-PCI, but it will need further validation.

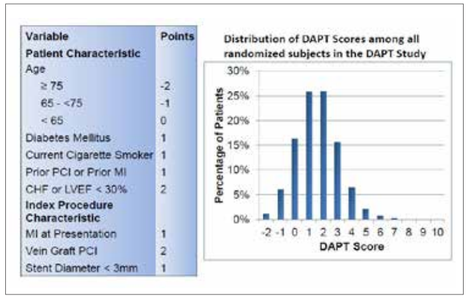


Figure 2. DAPT Score

Coronary Symposium
›› Thursday, April 27, 8:30 AM ~ 4:30 PM
›› Coronary Theater, Level 1

Update on BRS 2017: ABSORB III

Stephen G. Ellis, MD
The Cleveland Clinic, USA

BD

ABSORB III was a multicenter, single-blind, active-treatment, controlled clinical trial. After successful predilatation, patients were randomly assigned in a 2:1 ratio to receive one of the two study devices (the Absorb everolimus-eluting bioresorbable scaffold or the Xience everolimus-eluting cobalt–chromium stent). The trial had randomized 2008 patients with stable or unstable angina and up to two lesions in separate coronary arteries to receive either the Absorb BVS (n=1,322) or Xience (n= 686). One-year results from the ABSORB III trial in New England Journal of Medicine in late 2015 showed the BVS to be non-inferior to the DES on the study's primary end point — target lesion failure as measured by a composite of cardiac death, target lesion MI and ischemia-driven target lesion revascularization — at 12 months.

The new results show that the two treatment arms remained statistically similar for the primary endpoint during the period between years 1 and 2; however, at the end of year 2, the BVS was associated with a significantly higher risk of target lesion failure (10.9 %) compared with the DES (7.8 %) among the trial's 2,008 patients (hazard ratio, 1.42; 95% CI, 1.04–1.94; p=0.03; **Figure 3**). The difference at year 2 was driven primarily by target vessel MI, which occurred in 7.3 % of BVS recipients versus 4.9 % of DES recipients. Rates of cardiac death, ischemia-driven target vessel revascularization, and device thrombosis were not significantly different between treatment arms.

A post-hoc analysis of 2-year data suggested that the increased event rate was concentrated in the patients with the smallest-caliber target vessels—that is, treated lesions with a reference vessel diameter (RVD) of <2.25 mm by quantitative angiography (**Figure 4**). It was reported that 19% of the patients in the trial received treatment for vessels smaller than the size range (2.5 to 3.75 mm in diameter). These patients had significantly poorer outcomes than the rest of the study sample, and a sub-analysis excluding these patients demonstrated the BVS to be non-inferior to the DES on the primary endpoint at two-year follow-up.

Post-dilatation with high pressure (at least 16 to 18 atmospheres) has been mandated in the new ABSORB IV trial. Longer-term data from the ABSORB III/IV program will determine whether better patient selection and technique improves short-term outcomes, and whether Absorb improves late outcomes compared to Xience. In addition, Longer-term data from the ABSORB III/IV program will determine whether better patient selection and technique improves short-term outcomes, and whether Absorb improves late outcomes compared to Xience.

Figure 3. TLF by 2 years (25 months)

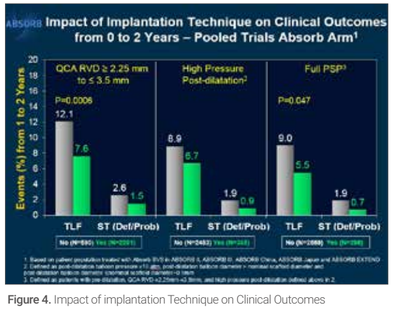
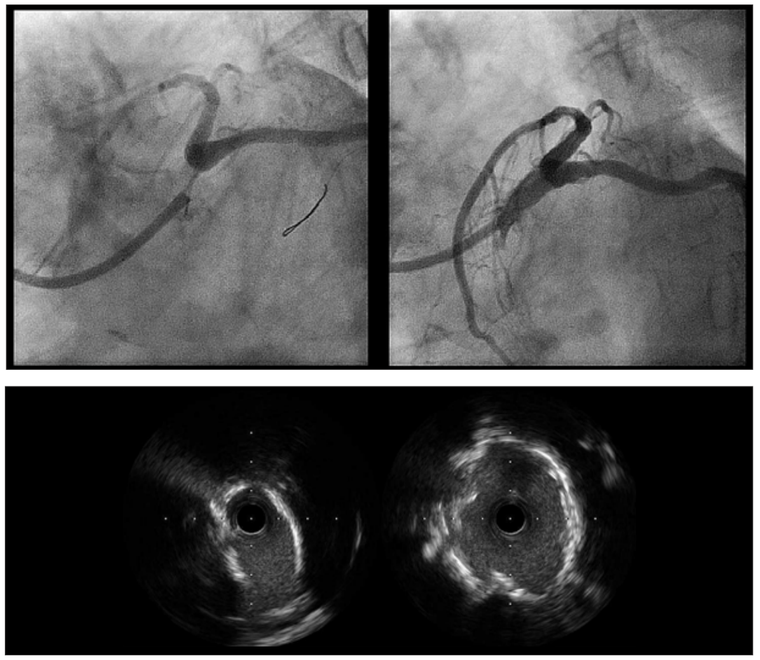


Figure 4. Impact of implantation Technique on Clinical Outcomes

Morning Roundtable Forum: BRS and DES
›› Thursday, April 27, 7:00 AM ~ 8:10 AM
›› Presentation Theater, Level 1

Yesterday's Hot Lives

A 71 year-old female was admitted for effort-induced chest pain 1 year ago. Thallium SPECT findings show normal gated myocardial perfusion. Coronary angiography was performed, which revealed very tight stenosis at the left main ostial lesion and diffuse moderate stenosis at the mid LAD. A 7F sheath was inserted through the right femoral artery. To prevent damage to the LM ostium, we first passed a wire through the LCX near the LM ostium. The left coronary ostium was engaged with a 7F XB 3.5 guiding catheter according to LCX wire. After two 0.014 inch BMW wires were inserted into the LAD and LCX, we tried to pass IVUS. But the IVUS failed to enter the LM due to heavy calcification. After the LM was predilated with Pantera LEO 3.0x15 mm, we could pass the IVUS. IVUS findings show severe stenosis with heavy circular calcification at the LM ostial lesion (RVD 6.0 mm, MLA 2.7 mm^2). Xience Alpine 4.0x12 mm was then impanted at the LM ostium and Sapphire NC 5.0x10 mm upto 24 atm. Fin lal IVUS and angiogram showed a good result with a well-expanded stent. After the PCI at the LM, we measured an FFR value in the mid LAD, and the FFR value was 0.79 (grey zone) during maximal hyperemia. We decided to defer PCI for the mid LAD lesion.



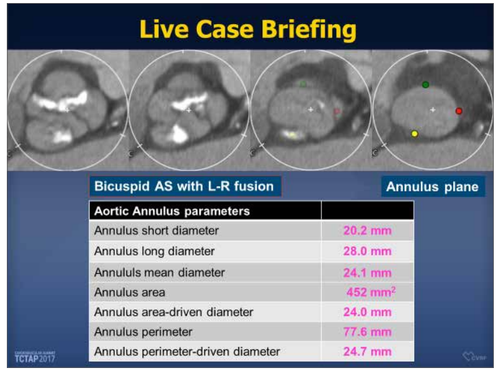
A 67-year-old male was admitted with chest pain. He had a history of hypertension, diabetes, end-stage renal disease on hemodialysis, hypothyroidism, coronary artery disease with stent implantation at the right coronary artery, stroke, arteriosclerosis obliterans, and traumatic epidural hematoma.

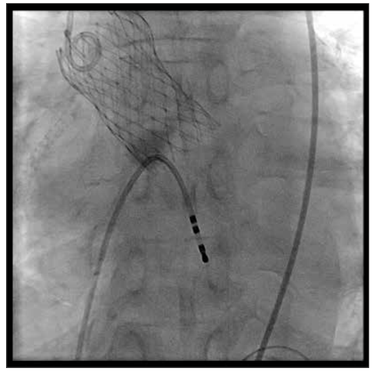
Electrocardiography showed normal sinus rhythm and left ventricular hypertrophy. Coronary angiography showed intermediate disease at left anterior descending and left circumflex artery with functional insignificance on fractional flow reserve measurement, and right coronary artery stent.

Transthoracic echocardiography showed bicuspid aortic valve (AV) and severe aortic stenosis with normal LV systolic function (ejection fraction [EF]=48%). Aortic valve area by continuity equation was 0.55 cm². Maximal transAV flow velocity was 4.2 m/s. Mean and peak pressure gradient were 42 and 69 mmHg, respectively. His STS score was 9.977% and EuroSCORE was 4.60%.

Annulus size on the CT was about 24 mm, and perimeter was 77.6 mm. Distance from annulus to LM and RCA ostium were 11 mm and 18 mm, respectively. The lowest diameter of the right femoral artery was 5.0 mm. After discussion, we decided to implant the 29 mm Medtronic Evolut R heart valve.

Under general anesthesia, 6F sheath and temporary pacemaker were inserted through the left femoral vein, and 7F sheath and 6F pig-tail catheter were inserted through the left femoral artery. 8F sheath was inserted through the right femoral artery, and the right femoral artery was dilated with 14F Ultimum sheath. An AL 1 diagnostic catheter with a 0.035 inch amplatz stiff wire was used to cross the aortic valve and pre-ballooning was performed with the 18 mm-size balloon. Then, Evolut R 29 mm valve was introduced without sheath to pass the narrow femoral artery. Under fluoroscopy control, a 29-mm Evolut R prosthesis was placed at the best position of the aortic annulus, and was successfully deployed. After valve implantation, final fluoroscopy showed well-positioned Evolut R valve without significant AR. After the intervention, puncture site was sutured with single Proglide.





Yesterday's Highlights

TCTAP 2017 Wrap-up Interview: Bioresorbable Vascular Scaffolds: Current Status & Future Perspectives

Moderators: David J. Cohen
Interviewees: Adnan Kastrati, Ashok Seth, Alan C. Yeung

Bioresorbable scaffolds were developed to overcome some of the disadvantages of metallic stents in that they gradually degrade in the body over time and leave no residual implant. Up to now, the majority of data including large randomized trials and patient-level, pooled meta-analyses assessing 1-year clinical outcomes had demonstrated promising results; cardiac death, target vessel-related myocardial infarction (MI), or ischemia-driven target lesion revascularization did not differ significantly between BVS and CoCr-EES.

However, in recent months, multiple reports examining the performance of Absorb BVS beyond 1 year suggest that it carries an increased risk of stent thrombosis as well as higher incidences of target-vessel MI. In ABSORB II, the 3-year data showed that the Absorb BVS was associated with a two-fold increased risk of target-vessel MI. That trial also showed an increased risk of scaffold thrombosis beyond 1 year with Absorb compared with Xience. In the 2017 meeting of the American College of Cardiology, Dr. Gregg W. Stone, who led the ABSORB III trials, reported concerning 2-year clinical outcomes; the rate of target-lesion failure was significantly higher in the BVS group than in the metallic-stent group (11.0% vs. 7.9%, *p*=0.03 for superiority of the stent). The two-year results from the Amsterdam Investigator-Initiated Absorb Strategy All-Comers Trial (AIDA) showed that the use of Absorb BVS is associated with a significantly increased risk of scaffold thrombosis, (3.5% vs. 0.9%; hazard ratio, 3.87; 95% confidence interval [CI], 1.78 to 8.42; *p*<0.001) and of target-vessel MI (2-year cumulative event rates, 5.5% and 3.2%), compared with patients who received CoCr-EES.

Thus, investigators have increasingly recognized the importance of adequate lesion preparation, proper vessel sizing, and postdilatation to achieve success with the device **(Figure 1)**. Expertise noted that the Absorb BVS is a first-generation technology, with thicker struts and different expansion, and structural characteristics than the contemporary drug-eluting stents. The first five studies were done before the learning curve and that is reflected by the fact that a lot of very small vessels were treated, and there were very low rates of postdilatation. Indeed, in the ABSORB III trial, additional analysis of the data showed that when physicians followed the PSP protocol (predilatation, appropriate sizing, and postdilatation), the rates of TLF and ST in the Absorb BVS arm were much closer to the rates observed with the Xience stent **(Figure 2)**.

While there are presently concerns about the early risks of stent thrombosis, long-term outcomes are lacking. Complete degradation of the polymer takes as long as 32 months in animal models and inflammation is observed for 1 year. The thicker stent struts means the vessel heals less quickly, leaving some unanswered questions about the optimal use of dual antiplatelet therapy. We are still learning how this is all going to work and the vascular responses. Next-generation BRS with thinner struts and more durable platform could be more widely applicable for real-world patients with diverse clinical and angiographic characteristics. In addition, long-term safety and efficacy should be continuously addressed in the real-world practice.

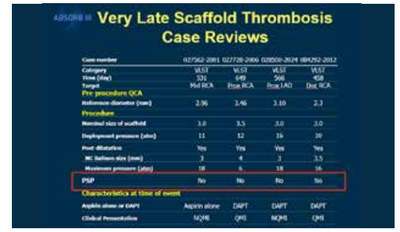


Figure 1. All 4 patients who had experienced very late stent thrombosis underwent BVS implantation without PSP technique

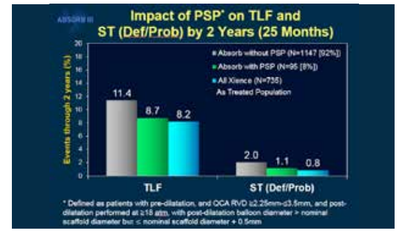


Figure 2. The impact of PSP on TLF and ST by 2 years of the ABSORB III trial

TCTAP 2017 Wrap-up Interview: Bioresorbable Vascular Scaffolds: Current Status & Future Perspectives

›› Wednesday, April 26, 11:00 AM - 11:30 AM

Dr. Eberhard Grube, MD Is Presented the 7th TCTAP Award "Master of the Masters"

MasterA

Dr. Eberhard Grube, MD, a Professor of Medicine at University Hospital Bonn, Germany and a Consulting Professor of the Division of Medicine at Stanford University School of Medicine, has been selected as the recipient of the 7th TCTAP Award "Master of the Masters" for his achievement to the field of interventional cardiology and the growth of CardioVascular Summit-TCTAP as well. The award ceremony was held on Wednesday, April 26 at the Main Arena.

TCTAP Award "Master of the Masters" is bestowed annually upon the most distinguished cardiologist who has made meritorious contributions and played a significant leading role in the field of interventional cardiology as well as in TCTAP over the years.

Dr. Eberhard Grube was born in Hamburg, Germany in 1944. After graduation from the Rhenish Friedrich-Wilhelm University in Bonn, Germany, he started his career as a physician at University hospital Bonn from 1979 until now. Over the past decade, Dr. Grube has taken lead in the initial clinical testing of drug-eluting stents, percutaneous closure devices, new atherectomy techniques, catheter-based valve surgery, and treatment of vulnerable plaque. He has been well-known as an early investigator in the field of TAVR. His study for improving the performance of TAVR devices and developing new treatment for valvular heart disease laid the groundwork for future development.

In recognition of his outstanding achievement, he received a Geoffrey Hartzler Master Clinical Operator Award in the annual Transcatheter Cardiovascular Therapeutics (TCT) scientific symposium sponsored by the Cardiovascular Research Foundation (CRF) in 2009.

Dr. Martin Bert Leon, who is his friend and the 2nd recipient of TCTAP Award "Master of the Masters", said, *"He is truly an unique individual with an intuitive understanding of how devices work, how they can be applied for specific new clinical applications and has both the technical skills and the cognitive understanding to be able to make the connection so that we can begin the complex process of innovative new devices development".*

As a wise teacher and leader, his effort to contribute to the medical advance and the growth of next generation in interventional cardiology continues even now.

TCTAP Award 2017 "Master of the Masters"

›› Wednesday, April 26, 9:35 AM ~ 9:55 AM
›› Main Arena, Level 3

Stabbing Wire Technique as a Novel Conventional Initial Strategy for Percutaneous Coronary Intervention of Chronic Total Occlusion

Khaled Mandour, MD
National Heart Institute, Egypt

Hot Ab

PCI for chronic total occlusion (CTO) lesion generally require more resource and time because of the greater complexity of having to cross the lesion first with a guide wire. The most common reason for the failure of a CTO revascularization is an inability for the guide wire to successfully cross into the distal true lumen. The number of guide wires, balloon angioplasty catheters, and stents that we use is greater than what we commonly use for a non-CTO PCI. This morning, Khaled Mandour *et al*. (National Heart Institute, Egypt) will share their experience of the recently modified the CTO antegrade strategy to overcome the technical limitations, time consumption, and economic burden. In the present study, they describe a novel variant of the penetrating wire technique, called "STABBING."

The stabbing wire technique is described below **(Figure 1)**:

- Make one or two curves (depending on the anatomy) for the hydrophilic coating tapered (enabling it to engage in small micro-channels and navigate through to the distal true lumen) with medium support wire, then direct it to the culprit artery and reach the site of a total occlusion.
- If the total occlusion site has a stump or a nipple, insert the wire into the nipple.
- If the total occlusion site shows a blunt end, choose the center of the occlusion in 2 perpendicular views, and insert the wire to be locked inside the lesion.
- If the total occlusion is at a bifurcation site, insert the wire to be wedged in between the two bifurcating vessels until you feel resistance.
- Hold the wire firmly 2 cm outside the Y connector, and push the wire into the total occlusion like a stab or a pistol shot (only controlled push with less than 2 cm of the wire).
- If fails, you can straighten the distal end of the wire by a 1.0 mm balloon or a microcatheter and stab it again.

A total of 92 patients with CTO were recruited and prospectively evaluated for the study endpoints. These patients were divided into two groups: group A, comprising 46 patients (PCI done with the stabbing wire technique as a conventional initial strategy) and group B, comprising 46 patients (PCI done with standard techniques). Dr. Mandour will show the following results: 1) The stabbing wire technique offered higher antegrade recanalization and revascularization success rates compared to the other wire techniques. 2) Stabbing wire technique as a conventional initial strategy reduce time consumption and, therefore, reduces radiation dose, compared to the other wire techniques. Compared to the other group, the stabbing wire technique as a conventional initial strategy consumed significantly less time (p=0.02). 3) The stabbing wire as a conventional initial strategy reduces contrast use compared to the other wire techniques (p=0.01). 4) The stabbing wire technique as a conventional initial strategy reduces equipment usage and, therefore, reduces economic burden, compared to the other wire techniques. This study describes the potential protective effects of the new stabbing wire technique in patients with CTO undergoing PCI with stenting. These findings may have implications for clinical trials investigating agents and equipment designed to reduce CTO PCI complications. This implies that modifying our techniques, upgrading our practice, and promoting education should be emphasized in the future, which may further shorten the time of CTO PCI and reduce the hazards it carries.

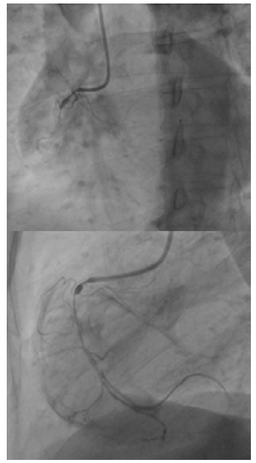


Figure 1. Stabbing wire technique

Moderated Abstract Competition I

›› Thursday, April 27, 11:40 AM ~ 11:50 AM
›› Abstract Zone I, Level 3

Sac Regression after Endovascular Relining of Perigraft Seroma after Open Repair of Abdominal Aortic Aneurism with PTFE Graft

Jang Yong Kim, MD
Seoul St. Mary's Hospital, Korea (Republic of)

Hot Ca

Today, Dr. Jang Yong Kim (from Seoul St. Mary's Hospital, Korea) presented a unique case, titled "Sac Regression after Endovascular Relining of Perigraft Seroma after Open Repair of Abdominal Aortic Aneurism with PTFE Graft." A 75-year-old man presented with growing aneurysm after open surgical repair of AAA with PTFE bifurcated graft six years ago. He complained of abdominal discomfort and a palpable mass in the absence of tenderness, pulse, and bruit. The patient had a history of PCI for coronary heart disease and a 10-year history of hypertension. Blood chemical examinations were normal without creatinine (1.5 mg/dL). Contrast-enhanced computed tomography (CT) showed a huge perigraft seroma measuring approximately 111 mm in diameter, starting from the infrarenal aorta to the middle of both iliac arteries. PET-CT proved no evidence of infection in the seroma. Abdominal aortography showed no graft leak and communication between the sac and the arterial blood flow. Relining of PTFE graft with Excluder cuff (23 mm) and Viabahn (10 mm x 10 cm) was performed. Simple puncture and aspiration on the aneurysm sac were not performed. Endovascular relining of PTFE graft was performed with 23 mm Aortic extender, Excluder (W.L. Gore & Associates Inc. Flagstaff, Arizona, USA) and 10 mm x 10 cm sized stent-grafts, Viabahn. Excluder was deployed in the trunk of PTFE graft (**Figure 1**). After the relining of two Excluders, 10 mm x 10 cm sized Viabahn was successfully implanted within the both iliac limb with the chimney technique (**Figure 2**). The ancillary attachment between the original and the new stent-grafts was successfully made with a 6 mm x 12 cm compliant balloon. Simple puncture and aspiration were not performed. The final aortogram was performed and there was no endoleak or flow disturbance. During the 2-year follow-up, the symptoms disappeared and the CT scan showed decreased aneurysm sac size (45 mm x 60 mm). Dr. Kim said that "Endovascular relining should be considered to perigraft seroma after AAA open repair with PTFE graft."

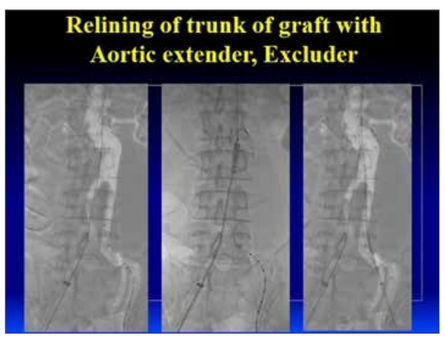


Figure 1. Relining of trunk of graft with aortic extender, Excluder

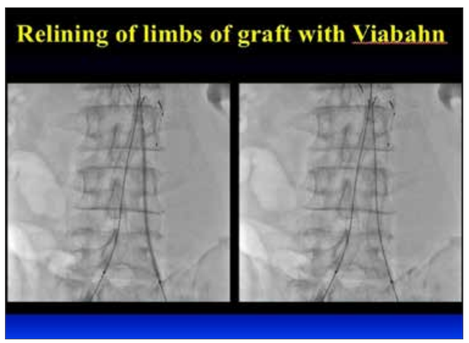


Figure 2. Relining of limbs of graft with Viabahn

Moderated Complex Case Competition III

›› Thursday, April 27, 11:20 AM ~ 11:30 AM
›› Case Zone III, Level 3

First Human Cases of New Self-expandable Percutaneous Pulmonary Valve Implantation Using Knitted Nitinol-wire Stent Mounted with a Trileaflet Porcine Pericardial Valve

Gi-Beom Kim, MD
Seoul National University Children's Hospital, Korea (Republic of)

Hot Ab

Severe pulmonary regurgitation (PR) and associated right ventricular (RV) dilatation in native right ventricular outflow tract (RVOT) is challenging and still being studied in clinical trials. Today, Gi-Beom Kim (from Seoul National University Children's Hospital, Korea) reported the first human cases of new self-expandable percutaneous pulmonary valve implantation (PPVI) using newly made knitted nitinol-wire stent mounted with a trileaflet porcine pericardial valve developed in South Korea. He reviewed 10 cases of new self-expandable PPVI at the Seoul National University Children's Hospital. This self-expandable, valved stent was newly developed by his research team with the cooperation of the TaeWoong medical company in South Korea. This valved stent was made by knitted nitinol-wire backbone with tissue valve using porcine pericardium with multiple steps for tissue preservation, including decellularization and alpha-galactosidase treatment. Ten patients underwent total correction of Tetralogy of Fallot previously and showed severe PR (mean PR fraction: 44.6%, range: 35.4-56) with enlarged RV volume (mean indexed RV end-diastolic volume; 184.1 mL/m^2, range: 161–209.8). Their median age at PPVI was 21.8 years old (range: 13-36). At the targeted RVOT area, 5 patients were implanted with a 28 mm diameter valved stent, and 5 patients were implanted with a 26 mm diameter valved stent loaded in the 18F delivery cable. There were no significant peri-procedural complications in all patients. After the procedure, there was no significant pulmonary stenosis or PR from cine-angiography and echocardiography in all patients. Chest X-ray showed good valved stent position at targeted RVOT area. All patients were discharged 4 days after PPVI without any problem. Two patients completed 6-month follow-up after PPVI and showed decreased indexed RV end-diastolic volume from 181.7 to 126.7 mL/m^2 and 167.5 to 112.6 mL/m^2, respectively, from cardiac MRI. Dr. Kim said that *"First human implantation of the new self-expandable percutaneous pulmonary valve using knitted nitinol wire mounted with a trileaflet porcine pericardial valve developed in South Korea was feasible and effective at short-term follow-up. A clinical trial for feasibility to evaluate the safety and short-term effectiveness of this self-expandable valved-stent for 10 patients is complete for the congenital heart disease with pulmonary valve disease in South Korea."*

Moderated Abstract Competition II

›› Thursday, April 27, 10:00 AM ~ 10:10 AM
›› Abstract Zone II, Level 3

IVUS-guided PTA in Claudicant with Renal Insufficiency

Sang-Ho Park, MD
Soon Chun Hyang University Cheonan Hospital, Korea

Hot Ca

Using the best measures to minimize contrast administration and radiation exposure is recommended for intervention of chronic total occlusive lesion, especially for patients with renal insufficiency. This morning, Dr. Sang-Ho Park (Soonchunhyang University Cheonan Hospital, Korea) is presenting a case of peripheral intervention which attempts to minimize contrast amount by using intravascular ultrasound (IVUS). A 77 year-old man with a history of hypertension, dyslipidemia, and smoking presented with claudication of Rutherford category 3 in the right leg. His creatinine level was 1.5 to 2.0 mg/dL, and creatinine clearance was 20 to 35 mL/min. His ankle-brachial index was 0.54. His symptoms did not improve despite intensive medical treatment including cilostazol. Lower extremity angio CT showed a chronic total occlusion of right superficial femoral artery with collaterals to distal superficial femoral artery from deep femoral artery and an intermediate stenotic lesion in the P2 area. The cross-over approach was chosen, and the left femoral artery was punctured with a 6F sheath. The baseline angiography was consistent with the angio CT findings **(Figure 1)**. An Astato 20 g and a Command were used as guide wires. As shown in **Figure 2**, intra-lumen of CTO lesion was confirmed by IVUS. Finally, the passage of the guide wire was successfully performed. Balloon angioplasty with a plain balloon was done, but the result was sub-optimal. Next, stent deployment with a bare self-expandable stent was successfully done without immediate complications. Dr. Sang-Ho Park used less than 30 mL of contrast at the time of baseline angiography, after ballooning, after stenting, and adjutant ballooning. The diameter of the vessel and the length of the lesion were measured with IVUS. IVUS can be useful for reducing the amount of contrast-dye and the accurate measurement of the diameter of the vessel and the length of the lesion in SFA CTO lesions with renal insufficiency. However, the use of IVUS in more complex lesions such as heavily calcified lesions may still be limited.

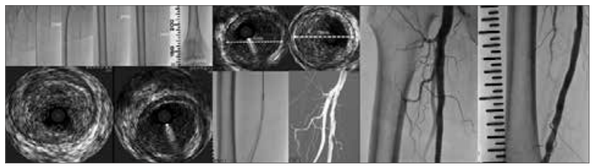


Figure 2. Peri- and post-procedural IVUS and angiographic findings.

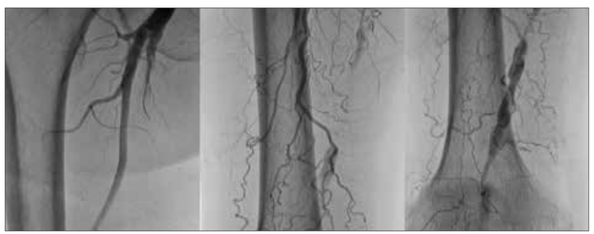


Figure 1. Pre-interventional angiography of right femoral artery.

Moderated Complex Case Competition I

›› Thursday, April 27, 9:00 AM ~ 9:10 AM
›› Case Zone I, Level 3

The 5th TCTAP Best Young Scientist Award Given to Dr. Babu Ezhumalai

Babu Ezhumalai, MD
MIOT International, India

BVSA

Dr. Babu Ezhumalai is a talented, passionate, qualified, and trustworthy cardiologist from India. After the completion of his undergraduate medical degree, he has pursued a career as both general and interventional Cardiologists. He served as Assistant Professor of Cardiology and Consultant Interventional Cardiologist at several high-volume tertiary-care centers in India. In addition, he has been actively participating in recognized international scientific meetings; he was an Indian National Ambassador for European Association of Cardiovascular Imaging Club 35, a winner of best presentation award at The Society for Cardiovascular Angiography and Interventions (SCAI) conference 2015, and has been an active presenter at TCTAP meetings. He has abundant experience in coronary artery intervention using Absorb Bioresorbable Vascular Scaffold, pulmonic valvuloplasty, and endovascular procedures. Nowadays, his focus is moving onto transcatheter aortic and mitral valvular procedures.

Moderator: Martin B. Leon
Interviewees: Alain G. Cribier, Eberhard Grube, Susheel Kodali

How did you choose to specialize in cardiology?

The rapidity of relief in a patient with STEMI obtained with emergent revascularization therapy attracted me to choose cardiology.

How do you think your wide range of experience in general cardiology affect your current practice?

The knowledge of general cardiology is important in treating patients with heart failure, arrhythmia, and associated systemic diseases.

What do you think about the role BVS in complex coronary artery disease?

My mentor, Dr. Ashok Seth from India, has used BVS to treat all possible complex coronary lesions with a negligible scaffold thrombosis rate. BVS is a new device altogether with different properties than the current metallic DES, so paying attention to technical details such as adequate pre-dilation, selection of optimally sized scaffold, high-pressure post-dilatation, and meticulous antiplatelet regimen will ensure less scaffold thrombosis and TLR rate, and thereby might improve the outcomes in most complex CAD.

What attracted you to the interventions for structural heart disease?

Although I was trained in basic interventions for structural heart disease during my DM cardiology course, it is my research work on balloon pulmonary valvuloplasty that triggered my attraction towards these interventions. This attraction is currently sustained by my endeavor for procedures like TAVR, Mitraclip, LAA closure etc.

Any advice for a young cardiologist?

There is a general misconception that research is time-consuming. Young cardiologists in pursuit of excellence must overcome this myth and realize that research work provides additional mileage to a professional career. It is high time to have an adequate balance of working in all fields, including research.

TCTAP Award 2017 "Best Young Scientist Award"

›› Thursday, April 27, 12:18 PM ~ 12:30 PM
›› Presentation Theater, Level 1

Yesterday's Highlights

Glorious Best Presenters from Competition Session

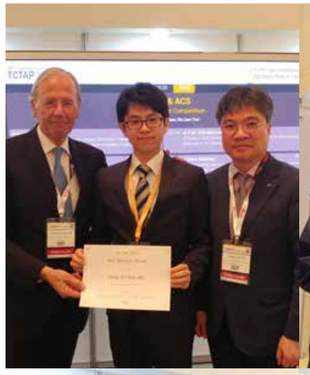
A number of interesting abstracts were submitted from all over the world to TCTAP 2017 this year, and then a few abstracts, and cases were selected to be presented in Moderated Competition after being strictly reviewed by the scientific committee. Approximately 140 authors made presentation in in Moderated Abstract & Case Competition Session and only 15 presenters were selected as the Best Presenters by evaluation. Here is the list of the glorious best abstract presenters.

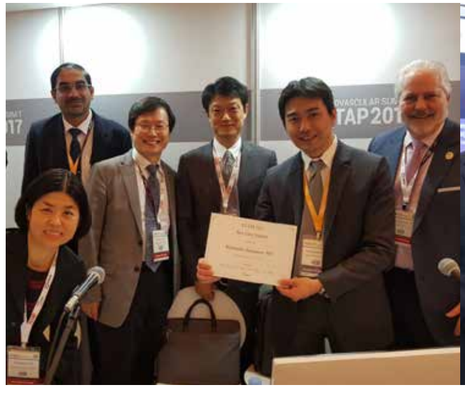
Best Abstract Presenter from Abstract Zone

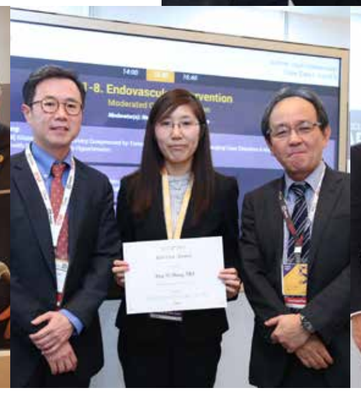
1-4. AMI & ACS: **Hieu Ba Tran, MD** (Vietnam)
1-5. AMI & ACS: **Dong-Yi Chen, MD** (Taiwan)
1-6. AMI & ACS: **Doo Sun Sim, MD** (Korea)
2-4. Complex PCI: **Hyun Kuk Kim, MD** (Korea)
2-5. Endovascular Intervention: **Mu-Yang Hsieh, MD** (Taiwan)
2-6. Endovascular Intervention: **I-Ming Chen, MD** (Taiwan)

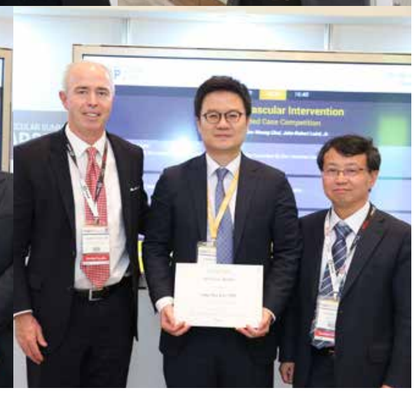
Best Case Presenter from Case Zone

1-7. Imaging & Physiology: **Katsuyuki Hasegawa, MD** (Japan)
1-8. Endovascular Intervention: **Jing-Yi Jhang, MD** (Taiwan)
1-9. AMI & ACS: **Chi Yen Voon, MD** (Malaysia)
2-7. Endovascular Intervention: **Dattatreya PV Rao, MD** (India)
2-8. Endovascular Intervention: **Jung-Hee Lee, MD** (Korea)
2-9. Complex PCI: **Hsin Fu Lee, MD** (Taiwan)
3-7. AMI & ACS: **Yuzo Akita, MD** (Japan)
3-8. Complex PCI: **Chun Hung Su, MD** (Taiwan)
3-9. Endovascular Intervention: **Ahmed Mashaly, MD** (Egypt)









Which Study Did You 'LIKE' the Most?

Give a thumbs-up to the best study and find out the **Best Presenter!**

E-Science Station *or* **TCTAP App**

20th KCTA Symposium

Annual Conference for Cardiovascular Nurse & Technologist Joint Program with TCTAP 2017

KCTA

This year is a special year that celebrates the 20th anniversary of Nurse & Technologist session held by KCTA at TCTAP. Before the session, President Min-Suk Lee of KCTA has expressed his excitement for the growth of the KCTA session into a key session involving around 1,000 members and 400 participants per year and the collaboration with China and Japan that established the KCTA session as an international co-medical session dealing with up-to-date clinical data in interventional cardiology.

The TCTAP 2017 KCTA symposium is held on April 27, 2017, at 2:00 PM at Endovascular & Structural Heart Theater, Level 1 and provides lectures on cutting-edge topics such as BVS and CTEPH to nurses and technologists.

In Part I: Featured Lecture 1, two lecturers will provide their expert opinion and discuss the clinical significance of new technologies and their indication as well as tips & tricks. Dr. Chang will present recent data on the much debated topic of bioresorbable scaffold and its difference from traditional stents. Dr. Park will give a lecture on CTEPH; Diagnosis & Treatment Indication, where he will discuss interventional treatment options for pulmonary artery embolism.

In Part II: Invited Lectures from China & Japan session, two lecturers China are invited to speak on Digital Construction of Cardiac Cath Lab as well as share their experience on radiation protection in cath lab workers. 2 lecturers from Japan are also invited to speak on the new IVUS system, and the management of ACS patients. The annual joint Korea-China-Japan session is an excellent opportunity for academic development and exchange through sharing of experience in each country.

Part III is a deep dive session held in honor of the 20th anniversary of the TCTAP KCTA session, where expert insights on all aspects of TAVAR, including aortic valve anatomy & function, current and future TAVI devices, and complications.

Part IV provides educational lectures on ECHMO, medication, patient care, radiation hazard, and new devices for nurses and technicians. Through these lectures, the participants would gain up-to-date knowledge on each topic, including recent data, clinical application, and significance.

The TCTAP 2017 KCTA symposium awards ten KCTA continuing studies points.

We hope that the TCTAP 2017 KCTA symposium provides an opportunity for nurses and technologists to share their knowledge and experience through lectures and debates.

The session will be held in the Valve Theater, Level 1 between 2:00 - 6:00 PM on April 27, 2017.

We hope to see you at the session.

20th KCTA Symposium

›› Thursday, April 27, 2:00 PM ~ 6:00 PM
›› Valve Theater, Level 1

1st COMPLEX PCI: Make it Simple!

The 1st Complex PCI 2016, which was held on December 1–2, 2016 at Sheraton Grande Walkerhill has been successfully wrapped up with a large delegate of 690 participants from 21 countries.

This meeting was newly designed to provide young interventionists of the Asia Pacific region with practical and comprehensive knowledge of interventional techniques from the bottom up to the newest trend in Complex Coronary Intervention field.

Over 2 days, 20 live cases were demonstrated at Asan Medical Center, and, as one of the key features of the meeting, this live session provided the attendees with technical tips for applying Rotablation, Cutting Balloon, Angioscope, Angiographic-Guided BVS, Imaging & Physiology-Guided PCI, DES, BVS, TRI, etc. to each lesion subset.

In addition, the session was even more distinguished with 13 valuable lectures from leading international experts. Interactive Q & A and panel discussions also added a more academic atmosphere to each session.

82 cases were submitted from 19 countries, and, among them, 52 challenging cases were accepted and enthusiastically presented by interventional cardiologists from various countries in the case presentation sessions.

16 medical companies attended the exhibition and introduced their latest products to attendees.

The 2nd complex PCI will take place in Sheraton Grande Walkerhill, Seoul on November 30–December 1, 2017.

Thanks to All Editors
Who dedicated their time to
TCTAP 2017 Daily Newspaper

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TCTAP Daily Newspaper is published during TCTAP 2017 as a service to all who attend.

CVRF
CardioVascular Research Foundation

The Voices of TCTAP 2017

Helen Eltchaninoff, MD
C. Nicolle, France

This is my first visit to TCTAP, and I am impressed by the organization, which is wonderful, the scientific level of sessions and the level presentations by the younger physicians from many countries. In the future, it would be nice to see more speakers from abroad. Also, maybe this meeting should be demonstrated more in Europe because we're not well aware of this meeting, which is very large and interesting.

Khramaz Mounia, MD
CHU Mohamed VI, UCAM, FMPM, PCIM, Morocco

I am a cardiology fellow from Morocco coming here for the first time to present a case. It is still only the first day, but so far I like it. I hope I get a lot of information, seeing the level of knowledge being exchanged here.

Iman Suhartono, MD
Mitra Keluarga Cikarang Hospital, Indonesia

I am participating as a moderator for the e-poster presentation. I think it went smoothly. I am particularly interested in the CTO sessions this year. I am enjoying my time in Korea and at the TCTAP – I would like to participate again.

Chi Kin William Chan, MD
Premier Medical Centre, China

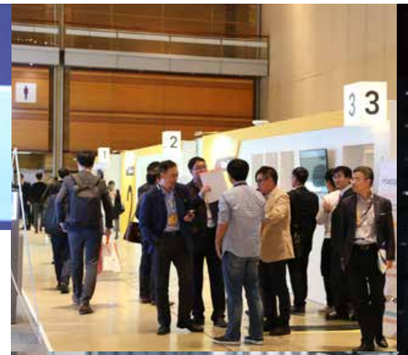
I've been here at the TCTAP for 10 years now and my focus is in coronary intervention. Of course, more recently, the development of valves or structural heart disease is gaining more popularity. As part of cardiology, we still have to keep abreast of the development in other areas.

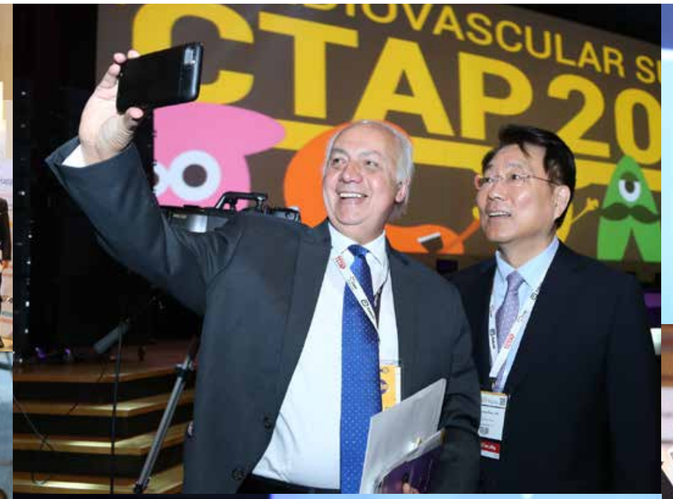
Markus Stoehr
ACIST, the Netherlands

I am a marketing manager for the ACIST medical systems based in the Netherlands. We are sponsoring the conference for the second year. We don't have a direct presence in Asia but have many partnering distributors. So, the TCTAP is very helpful on one hand for meeting our distributors and on the other for meeting their direct customers and explain briefly about our portfolio.

Abdullah M.A. Shehab, MD
UAE University, United Arab Emirates

Everything at the meeting is interesting. Especially coronary is very interesting, the CTO. There are also new things in the field of structural heart. So, quite interesting topics are being handled.





23rd CARDIOVASCULAR SUMMIT

TCTAP2018

April 28 – May 1

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