Healthy Heart

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Honorary Editor :
Dr. Keyur Parikh

From the Desk of Hon. Editor:

Dear Friends,
The field of percutaneous coronary intervention remains extremely active, with major advances involving revascularisation strategies and techniques, adjuvant antithrombotic therapy (with a particular emphasis this year on the optimal duration of antiplatelet therapy after drug-eluting stent stenting), concerns regarding the importance and risks of bleeding and methods to decrease those risks and a strong focus on the study of newer generation drug-eluting stent and bioresorbable/bioabsorbable scaffolds devices with some concerns regarding the safety of the later. Given the improved clinical outcomes of newer generation drug-eluting stent, comparisons between these and coronary artery bypass graft surgery are important. At the same time we should not forget enormous advances in Percutaneous valve replacements , Thoracic Endovascular stent grafting, endovascualr interventions, Structural Heart Interventions, Electrophysiology advances and so on . At CIMS Hospital we are pioneers in almost all the percutaneous multi modality interventions that are done in India.This article gives a brief synopsis and update in the area of Coronary Artery Intervention.

- Dr. Keyur Parikh

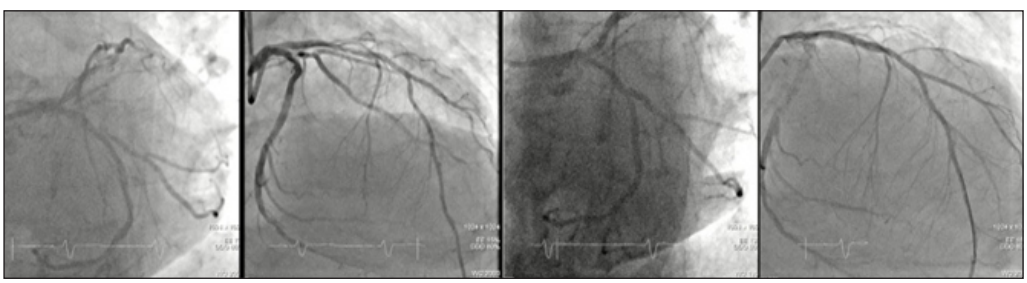
The year in cardiology 2016: Coronary Intervention (Part-1)

PERCUTANEOUS CORONARY INTERVENTION MAKES A COMEBACK

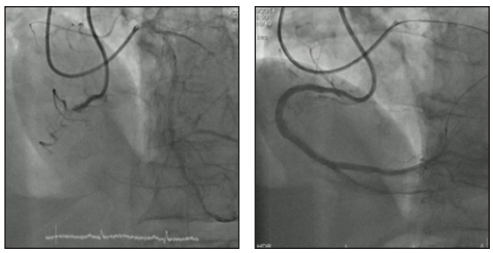
In recent years, the focus in interventional cardiology shifted towards new procedures with transcatheter aortic valve replacement, mitral valve repair, and peripheral interventions dominance. coronary intervention (PCI) still stands as an effective treatment option for myocardial infarction world over making this treatment profile extremely dynamic with major advances occurring annually. Scope of advances range from revascularisation strategies and techniques; adjuvant antithrombotic therapy (with a particular emphasis this year on the optimal duration of antiplatelet therapy after drug-eluting stent stenting);overcoming risks of bleeding; advent of newer generation drug-eluting stent and bioresorbable devices with lingering concerns regarding the safety of the latter. This year, bioresorbable stents have made waves with new data showing equivalent outcomes compared to standard drug-eluting stents and the FDA approval of the first partially bioresorbable stent.

Complex Percutaneous Coronary Intervention

Several factors have contributed to the increase in complexity of PCI. Recent modifications to appropriate use criteria decipher that patients often times do not reach the cath lab unless their condition has developed to a point that warrants intervention. In addition, the cath lab now has access to technologies that enable them to treat more complex cases without the need for open heart surgery. Hospitals are developing programs to treat chronic total occlusions (CTOs) and adopting ventricular assist devices such



Before After



Before After

Fig 1: PCI outcomes in complex cases

as the Impella 2.5 to treat high-risk patients.

Percutaneous Coronary Intervention in Bifurcation Lesions

The optimal management of bifurcation lesions remain uncertain. The TRYTON trial randomly assigned 704 patients with bifurcation lesions to either a bifurcation stent (the TRYTON stent) or stenting of the main vessel with provisional stenting of the side branch. At 9 months, target vessel failure was numerically more frequent with the bifurcation stent, largely due to a higher periprocedural myocardial infarction rate, and the bifurcation stent failed to achieve non-inferiority with the strategy of provisional stenting, illustrating once more that, in interventional cardiology, 'less is more'.

Percutaneous Coronary Intervention in the Management of Chronic Total Occlusion(CTO)

Coronary CTO is characterized by heavy atherosclerotic plaque burden within the artery, resulting in complete (or nearly complete) occlusion of the vessel. Although duration of the occlusion is

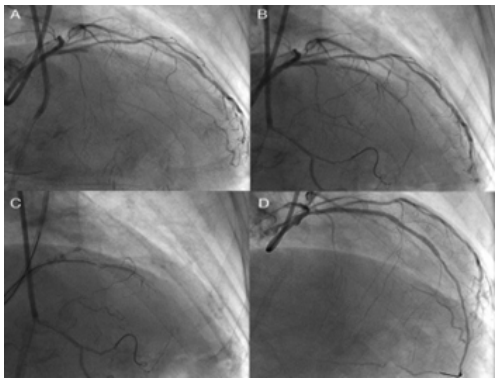


Fig 2 :PCI with Chronic Total Occlusio

difficult to determine on clinical grounds, a total occlusion must be present for at least 3 months to be considered a true CTO. Patients with CTO typically have collateralization of the distal vessel on coronary angiography, but these collaterals may not provide sufficient blood flow to the myocardial bed, resulting in ischemia and anginal symptoms. CTO is clinically distinct from acute coronary occlusion, which occurs in the setting of ST-segment–elevation myocardial infarction, or subacute coronary occlusion, discovered with delayed presentation after ST-segment–elevation myocardial infarction. Clinical features and treatment considerations of these entities differ considerably from CTO (Fig 2).

Radial Access Adoption on the Rise

Across the globe, transradial access has become the standard of care for PCI.

Data presented in 2015 continued to back up the benefit of radial percutaneous coronary intervention for patients but several studies showed slight increase in radiation exposure for operators during left radial procedures.

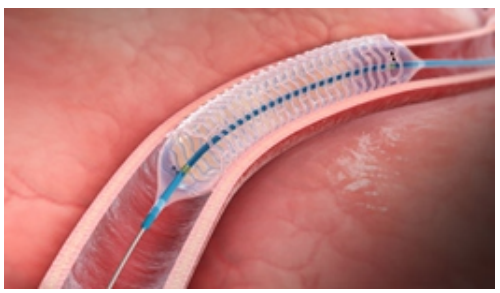
With the appropriate training and equipment including proper shielding, disposable drapes, and robotic systems, these risks can be reduced for physicians and their staff.

At CIMS ,of the total angiographic investigations, about 30-35 % underwent Percutaneous Coronary Intervention (PCI), and out of total angioplasty, and over 99%underwent transradial access PCI - highest Radial procedures in India and the highest in a private set up in Gujarat.

Devices in Percutaneous Coronary Intervention

cutaneous Coronary Intervention

a) Drug Eluting Stents in PCI



Number of clinical studies (Table 1) suggest that indications for bare metal stents may be rapidly disappearing, as newer drug-eluting stents provide superior efficacy without safety concerns with no longer requirement of protracted antiplatelet therapy. The trials also conclude that definite or probable stent thrombosis was also reduced in drug-eluting stents-treated patients (2.0 vs. 4.1%; P = 0.019) (Fig 3).

Table 1:Clinical Studies in Use of Stents in Percutaneous Coronary Intervention

Trial	Objective	Conclusion
BASKET-PROVE II	To evalute the long-term performance of a BP-DES compared to the most widely used DP-DES for efficacy and safety - compared to a last-generation thin-strut BMS for late safety	By intention-to-treat, biolimus-eluting Biodegradable polymer drug eluting stents (BP-DES) were non-inferior to everolimus-eluting durable-polymer drug-eluting stents (DP-DES) after 2 years in a real-world population of patients in need for large-vessel stenting.
SORT OUT-VI	To perform a randomized comparison between the BioMatrix Flex™ and the Resolute Integrity® stents in the treatment of unselected patients with ischemic heart disease.	The SORT OUT VI trial found that both zotarolimus-eluting and the biolimus-eluting stents were associated with low major adverse cardiac events,
LEADERS FREE trial	The BioFreedom drug-coated stent demonstrated superiority to bare metal stents in patients undergoing percutaneous coronary intervention (PCI) with a high risk of bleeding, according to the results of the LEADERS FREE trial	In spite of the short course of dual antiplatelet therapy, the rate of BARC types 3-5 bleeding was high (7.2%) and similar in both groups.
ZEUS trail	This study sought to compare a hydrophilic polymer-based, second-generation zotarolimus-eluting stent (ZES) with a unique drug fast-release profile versus bare-metal stents (BMS) under similar durations of dual-antiplatelet therapy (DAPT).	Compared with BMS, DES implantation using a stent with a biocompatible polymer and fast drug-eluting characteristics, combined with an abbreviated, tailored DAPT regimen, resulted in a lower risk of 1-year MACE in uncertain candidates for DES implantation.

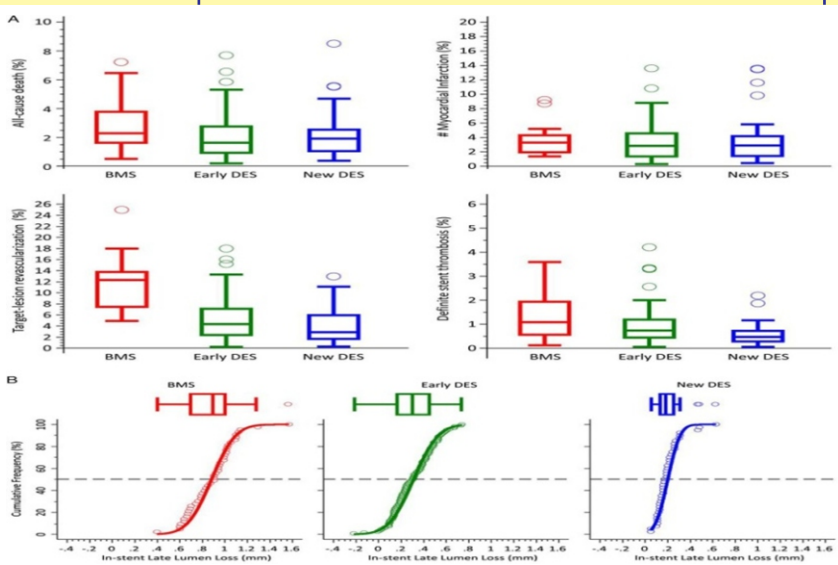
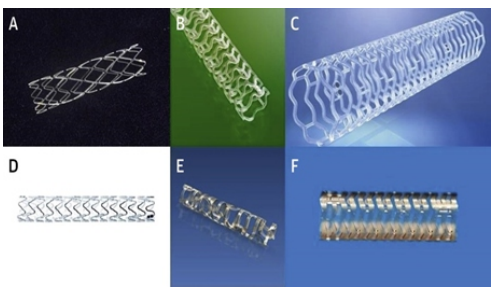


Fig 3.(A)Results of a systematic review regarding clinical outcomes at 9–12 months for bare metal stents early and new drug-eluting stents —median rates per 100 person-years. Median rates and inter-quartile range per 100 person-year for the clinical endpoints all-cause death, myocardial infarction, target-lesion revascularization, and definite stent thrombosis. (B) Systematic review of median, inter-quartile range, and cumulative frequency of in-stent late lumen loss for bare metal stents, early and new drug-eluting stents

b) Different model of Bioresorbable scaffolds



The **Absorb II** trial compared Absorb [Abbott Vascular, Santa Clara, CA, USA (n = 335 patients, 364 lesions)] to Xience [Abbott Vascular, Santa Clara, CA, USA (n = 166 patients, 182 lesions)].Cumulative rates of new or worsening angina were lower in the bioresorbable scaffold group(BVS); whereas performance during maximum exercise and rate of composite device-oriented endpoint were similar.

Data from **Absorb III** trial support the non-inferiority of Absorb to Xience in terms of 1-year target lesion failure, although superiority (which was also targeted in the study design) was not achieved. There was no statistical difference between groups in rates of cardiac death, target-vessel myocardial infarction, ischemia-driven target-lesion revascularization, or device thrombosis (1.5 vs. 0.7%) within 1 year.

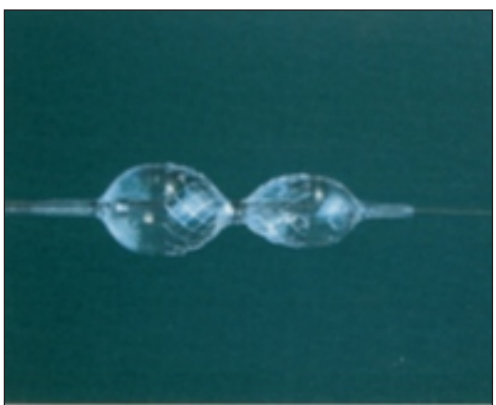
While trials have fulfilled statistical non-inferiority for BVS compared with drug-eluting stents; the non-inferiority margin remains wide with several important clinical outcomes numerically worse with BVS. Numerous studies indicate that the issues of stent thrombosis and clinical efficacy (at least equivalent to that of newer drug-eluting stents) have to be addressed critically for bioresorbable scaffolds to be widely adopted in current clinical practice.

CIMS cardiologists implant both drug eluting stents and bioresorbable scaffolds and outcomes are comparable to international centres.

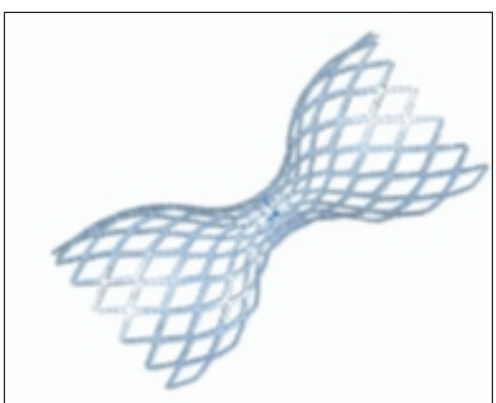
c) Reducer Stents for Refractory Angina

Management of patients with refractory angina not amenable to revascularization is difficult. A new balloon-expandable device to reduce the coronary sinus was used in 104 refractory angina patients. Implantation led to an improvement of at l

east two angina classes in 35% and of one class in 71% of patients at 6 months. In the control group (received a sham procedure), angina class improved by two or one class in 15% and 42% of the patients, respectively (P < 0.05 for both). More mechanistic markers of ischaemia reduction in conditions like exercise time or wall-motion index remained unchanged between the two groups. Six-month event rates were low in both groups. This device may represent a future option for patients with refractory angina.



(A) The Reducer stent on the inflated designated balloon.



(B) The Reducer stent.

The Cardiology team at CIMS had pioneered for NEOVASC study which was a multicenter, nonrandomized, open-label prospective study that evaluated the safety and feasibility of the Coronary Sinus Reducer. The results at 10 years follow up were presented at Society of Cardiac Angiography and Interventions (SCAI)conference in Orlando, US 2016. A research manuscript was also published in reputed international Journal of American College of Cardiology.

To be continued...

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Scientific Session - Program at a Glance

Day-1, January 6, 2017, Friday

Main Session

1. Introduction Session
2. Coronary Artery Disease / Acute Coronary Syndrome
3. Interventional Cardiology
4. All You Need to Know: Valvular Heart Disease / Hypertension / Lipids & Cardiovascular Risk Management
5. Plenary Lectures
6. Clinical Case Based Approach : Hypertension / Lipids & Cardiovascular Risk Management
7. Plenary Lectures

Satellite Session

1. An Evening of Pharmacology & Therapeutics – I
2. An Evening of Pharmacology & Therapeutics – II
3. An Evening of Cardiology Guidelines (15 Points to Remember for Physicians)
4. Focus Update & Guidelines

Day-2, January 7, 2017, Saturday

Main Session

1. Interactive ECGs / Arrhythmia
2. Arrhythmia & Heart Failure
3. Clinical Cases
4. Case Presentations
5. CIMS JIC Oration
6. Structural / Imaging
7. Live Case Session – Case Presentation

Satellite Session

1. STEMI
2. Hypertension
3. Valvular Heart Disease

Day-2 & 3, January 7-8, 2017 Saturday & Sunday

1 Oncology Symposium

Day-3, January 8, 2017, Sunday - Certification Courses

1 Internal Medicine Symposium / Clinical Cardiology Symposium

2 Pediatric Cardiology & Pediatric Cardiac Symposium

- Pediatric Cardiology
- Pediatric Cardiac Surgery
- Oration
- Intensive Care
- Panel Discussion / Cost Containment

3 Pulmonary Medicine Symposium

- Obstructive Airway Disease(OAD)
- Interstitial Lung Disease (ILD)
- Pulmonary Hypertension (PHT)
- Interventional Pulmonology
- Pulmonary Infection
- Pulmonary Embolism

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25 best posters will be awarded prizes.

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The abstract should be single spaced, justified typed in MS Word Document

Abstract Title: Font Type: Times New Roman, Size 12 Points, Bold. Each word should begin with a capital letter except transition words.

Author(s) Details: Font Type: Times New Roman, Size 11 Points, Regular

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- Affiliations: Institute / Hospital, Department, City and Country (Superscripted numerically, if more than one)
- Presenting author's name should be placed first.
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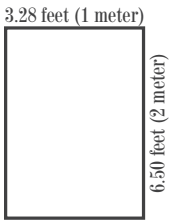
Abstract Body: Font Type: Times New Roman, Size 11 Points, Regular, Word count: up to 350 words.

POSTER DETAILS

- Poster dimensions: Height: 6.50 feet (2 meter) x Width: 3.28 feet (1 meter)
- Footer of the poster should mention: **"Poster presented at JIC 2017, Ahmedabad, India."**
- Posters should be displayed half an hour before the commencement of the session.
- Presenting author should remain present throughout the presentation session.



POLICIES

- There is no fee for submission of abstract .
- The research should not have been presented earlier.
- All abstracts/posters must be in English.
- Complimentary registration will be extended to the accepted abstracts presenting authors.
- Poster presentation date and time will be notified on acceptance.
- Presenting author should mandatorily be present during the conference. Failure to remain present may jeopardize future acceptance of abstracts.
- Decision of the JIC 2017 Scientific Committee for the awards of the posters will be final and abiding to all participants.
- Accepted abstracts will be available for review on www.jicindia.org

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TIMELINES

Abstracts must be e-mailed by
Tuesday, November 15, 2016 to
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Accepted abstracts will be notified by
Thursday, December 15, 2016.

FOR MORE DETAILS, PLEASE CONTACT:

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