CSI NIC Mid Term Meet: NIC 2024

THE POWER OF SUSTAINED LDL-C REDUCTION: INCLISIRAN AND THE 'LOWER FOR LONGER' APPROACH

Dr Viveka Kumar, Delhi

As a cardiologist, I strongly advocate for the "lower for longer" approach to LDL-C (low-density lipoprotein cholesterol) control as a pivotal strategy in preventing the recurrence of cardiovascular events. Achieving and maintaining low LDL-C levels over an extended period significantly diminishes the risk of these events recurring. The prolonged reduction in LDL-C helps stabilize atherosclerotic plaques, reduces inflammation, and overall contributes to improved cardiovascular outcomes.

Inclisiran has emerged as a groundbreaking therapy in this context, with its ability to maintain an LDL-C reduction of more than 50% from baseline for more than a year with just twice-yearly dosing regimen. The sustained LDL-C lowering effect of Inclisiran is highly compatible with the "lower for longer" approach, offering a reliable and convenient means to maintain low LDL-C levels.

WE GROW BY LEARNING FROM EACH OTHER

Dr Anil Dhall, New Delhi

Networking and community building are good watch-words, but it is largely peer interaction. Sometimes, we have more than one right answer for a clinical problem. So, we need to keep an open mind and we need to learn from each other…learn techniques, learn appropriate utilization of technology, learn how we can handle clinical events, how we can be prepared for disasters, which may happen. This is how this meeting helps us grow not only as individuals but also as a cardiovascular community.

We are running a very active Fellow's program this year with a lot of international representation. The live case transmissions from overseas not only help in fostering a relationship with our global peers but also help us to understand their techniques and how we can improve our technique with the resources available in our country. India is known to adapt to less advantaged situations and turn disadvantage into an advantage by a process which we call "jugad". Because we can actually innovate and think. But the whole problem is that modern medicine is not what I think or I feel. It is based on global data.

And today we have the opportunity to use multiple touch points to collect data. Over 1,200 centers have collaborated for this year's NIC Chairman's Report, which is colossal and shows a very active, ready mindset of people to collaborate and give data, for which there was a reticence to share data till now. But today, with global acceptance, and once we start generating our own data, we will be able to understand our solutions, our problems, and how we can adapt, even with marginally less resources.

So, I think collecting data in modern evidence-based medicine is the only way by which you can demonstrate that something brings value to what you do.

We have designed the Fellow's program this year on the most vexing problems, which fellows face, and that is how to deal with complications, how to think through them, how to prevent them and if they actually happen, how to deal with them. These will be exciting times and we will learn from each other's mistakes and solutions and innovations and out of the box ideation, which actually bails us out of difficult situations.

TAVI COMPLICATIONS AND MANAGEMENT

Dr Sengottuvelu G, Chennai

Chance favors the prepared mind

- Key transcatheter aortic valve implantation (TAVI) complications are device embolization, aortic root injury, paravalvular AI, coronary occlusion, stroke, pericardial tamponade, valve thrombosis, endo-carditis, myocardial stunning, and hemodynamic collapse.
- Incidence of coronary occlusion post-TAVI is low but can be catastrophic.
- Low coronary arteries, small SOV and TAV in SAV are the most common risk factors.
- Complete and detailed assessment of the CT is essential.
- In patients at high risk of coronary occlusion, consider: predilatation + contrast to assess, coronary protection with guide and stent in position, Basilica

procedure, not performing TAVI and re-discuss at Heart Team meeting regarding AVR.

Key Messages

- Complications will occur!!
- Be prepared!
- Patient selection is vital – the CT is the key!
- See as many cases as possible.
- Do as many cases as possible…. as a team!

IMAGING IN COMPLICATIONS: OPTICAL COHERENCE TOMOGRAPHY

Dr Darshan Doshi, USA

Optical coherence tomography (OCT) is an advanced imaging technology used to assess the microstructure of coronary arteries with an axial resolution of approximately 10-15 μm. Compared to intravascular ultrasound (IVUS), OCT provides superior resolution, enabling detailed characterization of the vessel wall's superficial structure. The efficacy of OCT hinges on accurate image acquisition and interpretation.

In interventional cardiology, OCT guides procedures by facilitating precise stent placement, ensuring optimal expansion and alignment. Its capacity to visualize intricate coronary details has established OCT as a vital tool in clinical settings, elevating diagnostic precision, and enhancing patient care in cardiology.

OCT images can be displayed in three primary modes: the traditional cross-sectional image, which provides a view perpendicular to the vessel wall; the longitudinal view, which shows a lengthwise section along the artery; and 3-dimensional visualization, offering a comprehensive spatial representation of the coronary anatomy. Each mode serves distinct purposes in clinical assessment, allowing cardiologists to analyze plaque morphology, assess stent deployment, and visualize vascular structures precisely. These imaging modalities enhance the utility of OCT in diagnosing and guiding interventions for coronary artery disease (CAD), contributing to improved patient outcomes in cardiology practice.

ALTERNATE ACCESSES IN TRANSCATHETER AORTIC VALVE REPLACEMENT

Dr S Nagendra Boopathy, Chennai

- Transcatheter aortic valve replacement (TAVR) has become a viable treatment option for patients with severe aortic stenosis; it is especially beneficial for those at high or prohibitive risk.
- The femoral artery is the most widely used vascular access route. Evidence is evolving in favor of transcarotid and transcaval access routes.
- TF access is key to the success of TAVR. It is essential to learn at least one alternate access route. Maintain adequate volume with one alternate access before moving on to others.
- TAVR is never a one-person procedure; it always requires a team approach.
- Keep three stents handy, each sized according to the common femoral artery, external iliac artery, and common iliac artery. Master one route and become comfortable with it before adapting to others.
- Perform a final angiogram, use a safety wire, have bailout equipment ready, and be competent in individual peripheral skills. Always call for help in cases of urgency.
- Utilize intravascular lithotripsy-assisted peripheral angioplasty to facilitate TF-TAVR, which is crucial for the success of TAVR.

LARGE-BORE VASCULAR ACCESS: CHALLENGES IN MANAGEMENT

Dr Ashishkumar Mandalay, Kozhikode

- Currently, larger bore access is employed for TAVR, left atrial appendage (LAA) occluders, MitraClip device, transcatheter mitral valve repair (TMVR) devices, aortic stent grafts, and hemodynamic support systems such as the Impella and extra-corporeal membrane oxygenation (ECMO). The incidence of vascular access site complications is 20% after TAVI and 12% to 25% after endovascular aneurysm repair (EVAR).
- Access site complications include bleeding and hematoma, vessel dissection and occlusion, pseudo-aneurysm, infection and nerve injury.
- Risk factors for vascular access site complications are female sex, extremes of weight, renal insufficiency, and anticoagulant use. The advantages of USG-guided access are differentiation between artery and vein, identification of bifurcation, avoid calcification, and posterior wall puncture.
- Manual compression is easy to learn, is safe and effective and does not require any special equipment but it is painful with prolonged mean time to achieve hemostasis. It is associated with prolonged time to ambulation, hand and arm fatigue, vascular complications and longer duration of hospitalization.

- Vascular closure device (VCD) are suture-based or collagen-based. The benefits of VCD are increased patient comfort, immediate/early mobility, reduced bleeding, and other vascular complications.
- Proglide VCD has the broadest arterial and venous indication. There is minimum inflammatory response, less blood transfusion, infection, mortality, and shorter hospital stay with minimum intravascular footprint. There are no re-access restrictions.
- MANTA VCD is the first commercially available biomechanical VCD. It is specifically designed for large-bore femoral access. It is available in two sizes: 14 Fr and 18 Fr; they can close access ranging from 12 to 15 Fr OD. No pre-closure is required.

COULD YOU ARTICULATE WHY CSI-NIC 2024 IS CRUCIAL IN ADVANCING THE FIELD OF INTERVENTIONAL CARDIOLOGY AND SHAPING ITS FUTURE TRAJECTORY?

Dr N Prathap Kumar, Kollam

Since the last 2 years, the NIC meeting has been moving to a different level, where participation as well as the people's engagement in the conference is much higher. Last year in Ahmedabad and then in Hyderabad, the total participation was over 2,500. This year we are expecting nearly 2,500 to 3,000 people. Two highlights of the scientific agenda this year are a Fellow's Course dedicated only for the complications. Secondly, for the first time in the history of interventional cardiology, we have "Death on Table". This is to understand why patients in crisis die on the table and can this be prevented in the next generation.

In 2022 and 2023, I was NIC chair. In 2022, nearly 640 senders gave NIC data, whereas in 2023, this number was 740. This year, Dr PK Sahoo got data from 1,200 hospitals. This means that people are interested in sharing data. Data is the initial entrance to the research programs in the country. This will create a lot of research activity in the country.

Lot of collaborations will happen in this NIC. One is with SCAI; we are also planning to collaborate with SOLACI in South America. We already have a collaboration with the Gulf Interventional Society. Such collaborations not only attract people from across the globe, but also facilitate exchange of knowledge.

There are 12 to 15 live cases from across the world in this meeting, except from India since Indian guidelines do not permit a live case. So globally, we are also associating to enhance the knowledge of the young crowd through live cases. From India, we have "Case in a Box" this time to attract the young people.

EMPOWERING POST-PCI CARE: INCLISIRAN FOR AGGRESSIVE LDL CONTROL IN INDIAN POPULATIONS

Dr Sarita Rao, Indore

Intensive lipid control among patients after percutaneous coronary intervention (PCI) is crucial, particularly for the Indian population. Indians often have smaller coronary arteries and experience CAD at a younger age compared to their Western counterparts. The "LOWER FOR LONGER IS BETTER" concept for LDL-C levels is a well-established principle in managing high-risk patient populations.

As a cardiologist, I emphasize that controlling LDL-C levels is paramount in preventing future cardiac complications and recurrence of cardiovascular events-which improve the quality of life of a patient. Through lifestyle modifications, **high-intensity statins**, and **innovative therapies like Inclisiran**, we can significantly reduce the risk of atherosclerosis progression, enhancing long-term cardiovascular health, and patient outcomes.

NIGHTMARE WITH ROTABLATION

Dr Yoshifumi Kashima, Japan

- Rotablation, also known as rotational atherectomy, is an advanced technique employed in PCI for patients.
- Due to its complexity and associated risks, meticulous care is essential during its execution.
  - External factors, such as cardiac motion, can affect the stability of intravascular devices like rotablation wires.
  - It is important to verify the location of the rotablation wire when the guiding catheter is removed. This checkpoint helps ensure proper wire placement and prevents potential complications during PCI.
- Even minor oversights can lead to severe complications. Hence, vigilance is crucial. Any deviations during follow-ups should prompt thorough investigation to prevent potential complications from progressing unnoticed.
- Surgical intervention may be required if the wire displacement worsens.

FEMORAL VASCULAR ACCESS: TECHNIQUE, CLOSURE DEVICES, AND COMPLICATIONS

Dr Rajaram Anantharaman, Chennai

- Access is important as arterial access starts every case and access closure ends every case. It may be

a source of unintended complication and dissatisfaction to the patient after a successful procedure.

- Consequences of non-common femoral artery (CFA) access are increased risk of RPH (high stick), PSA (low stick) but procedure can be completed. Current access techniques are not satisfactory for 100% CFA access.
- Assess the multidetector computed tomography (MDCT) thoroughly (vessel size, tortuosity, calcification, bifurcation, soft plaque burden). Predict the challenges that will be posed in that particular case. Use angiographic, guidewire, and ultrasound (AGU) technique.
- Prepare adequately technique, device, and support as required. Have the tool kit for all access complications ready (check before starting the case). Majority of the access site complications can be managed percutaneously (safely), but do not hesitate to call your vascular interventional/surgical colleague.

THE POWER OF PRECISION: MANAGING DYSLIPIDEMIA IN INDIANS WITH INCLISIRAN

Dr Dilip Kumar, Kolkata

Dyslipidemia management among the Indian population presents unique challenges due to distinct morphological and genetic factors. **Indians tend to have a more multivessel, more diffuse and multiple CAD compared to western population.** The prevalence of central obesity, insulin resistance, and atherogenic dyslipidemia, significantly high than to Western counterparts. Traditional treatment including Statin proven to be significant reduction in LDL-C control but often fall short in achieving optimal lipid levels and reducing cardiovascular risk in this demographic. Therefore, it is crucial to adopt tailored strategies that address the specific lipid abnormalities prevalent among Indians.

One promising advancement in the treatment of dyslipidemia is the use of **Inclisiran, a novel small interfering RNA (siRNA) therapy** that targets PCSK9 synthesis. It provides sustained LDL-C reduction with just **biannual dosing**, aligning well with the lipid goals for high-risk patients. Embracing such innovative treatments can potentially bridge the gap in cardiovascular disease management and improve outcomes for the Indian population.

RADIAL CHALLENGES

Dr Sanjay Kumar Chugh, Gurgaon

- The European and American Guidelines for PCI recommend transradial access (TRA) as the default procedure because of the overwhelming and irrefutable evidence of reduced risk of vascular complications, bleeding, and mortality, especially in acute and high-risk patients undergoing PCI using TRA.
- Vasovagal is common to all cath lab procedures but most relevant and crucial to radial access because of early mobilization and discharge.
- Radial artery spasms are better prevented than treated. They are responsible for up to 38% of all transradial procedure failures.
- Radial artery occlusion occurs in 3% to 10% of all transradial interventions and can be prevented by appropriate anticoagulation, proper sheath selection and nonocclusive/patient hemostasis.
- To prevent nonaccess site forearm bleed/hematoma, clinicians should have a low threshold for performing a radial artery arteriogram when any resistance to the guidewire or catheter insertion is encountered.
- Be cautious when taking a guide catheter and crossing the cubital fossa to the subclavian artery.
- Transradial procedures have low complications rates, but more complications occur in small RA-diameters. Access arteries with a diameter of ≥1.7 mm have lesser complications. A larger catheter curve size is required for aortic root. Preventing pseudoneural artery occlusion rarely requires surgery and is an outpatient procedure under local anesthesia.

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