CSI NIC Mid Term Meet 2023

LIMA INTERVENTIONS: HOW TO DO – STEP BY STEP?

Dr Rajpal KA, Coimbatore

LIMA, which stands for left internal mammary artery, is a commonly used artery for coronary artery bypass grafting (CABG) procedures. The LIMA is a conduit that can be used to bypass a blocked or narrowed coronary artery, typically the left anterior descending (LAD) artery.

In LIMA interventions, the LIMA is harvested from the chest wall and then used as a graft to bypass the diseased coronary artery.

Here are 10 commandments of LIMA interventions: Tortuosity of the LIMA looks worse than what it actually is; use nitroglycerin (NTG) liberally; beware of iatrogenic dissections of the LIMA, especially LIMA ostium; concertina effect; anatomical landmarks to guide stent replacement; LIMA restenosis is not common; do not lose time between steps; choose a stent wisely with features, such as good deliverability, little longer and good radio-opacity; look at the subclavian region too; LIMA can withstand complex work.

However, there are several tips to overcome some of these commandments of LIMA intervention. For instance, during iatrogenic dissections of the LIMA, keeping a wire in the subclavian and liberal dose of NTG is helpful. Although, tortuosity of the LIMA looks worse, but the tortuosity is never in one plane. Hence, it is much easier to negotiate.

LIMA is prone to spasms, but liberal use of NTG can help in visualizing the true size of the LIMA, and distal vessel. It can also help in inhibiting the concertina effect.

SACUBITRIL/VALSARTAN DELAYS USAGE OF ICD BY REVERSE REMODELING

Dr Kajal Ganguly, Kolkata

Heart failure management with reduced ejection fraction (HFrEF) has evolved significantly over the past two decades, with the introduction of implantable cardioverter-defibrillators (ICDs) and cardiac resynchronization therapy (CRT) in the first decade, followed by the incorporation of angiotensin-receptor neprilysin inhibitor (ARNI) therapy in optimal medical treatment (OMT) for HFrEF in the second decade.

The PARADIGM-HF trial, which involved 8,399 patients, assessed patterns of ICD implantation and eligibility based on clinical guidelines while also examining the impact of ICD utilization and sacubitril/valsartan therapy (ARNI) on the risk of sudden cardiac death (SCD) using cause-specific Cox models and competing risk analysis.

The study revealed that only 15% of the 7,145 patients eligible for ICD implantation had actually received an ICD at baseline. The use of ICDs varied across different regions, with the highest utilization rates in North America and the lowest in the Asia-Pacific region. Notably, the study demonstrated that a 56% reduction in the risk of SCD is attributed to ICD use among eligible patients, regardless of the underlying cause of heart failure (ischemic or nonischemic cardiomyopathy).

Moreover, sacubitril/valsartan therapy reduced the risk of SCD in patients who either had an ICD or were eligible for ICD but did not receive one. This effect was particularly significant in patients with nonischemic cardiomyopathy. The study did not identify a significant interaction between the cause of heart failure and the impact of sacubitril/valsartan therapy on SCD risk.

In conclusion, this study highlights the underutilization of ICDs in eligible HFrEF patients worldwide. Additionally, it demonstrates that sacubitril/valsartan therapy reduces the risk of SCD, regardless of ICD use or eligibility, with a more pronounced effect observed in patients with nonischemic cardiomyopathy.

ARNI therapy with sacubitril/valsartan may lead to reverse remodeling and attenuation of myocardial fibrosis, potentially reducing the risk of ventricular arrhythmias.

Clinically, sacubitril/valsartan has shown efficacy in reducing the burden of ventricular arrhythmias and appropriate ICD therapy.

LEFT MAIN STENTING VS. CABG: A COMPARATIVE REVIEW

Dr Mrinal Kanti Das, Kolkata

Factors determining the choice of percutaneous coronary intervention (PCI) and CABG:

- Feasibility of both types of vascularization – HEART Team, equipment, patient's preference

- SYNTAX score; Atherosclerotic burden; Need for surgical intervention
- Evaluation of completeness of vascularization
- Age – In younger patients, CABG is preferred; in patients with advanced age, PCI is preferred.

Revascularization for symptomatic left main (LM) coronary artery disease (CAD) is considered the standard of care. Data on recent advances in drug-eluting stents show similar outcomes with CABG and PCI. Nevertheless, long-term outcomes are better with CABG in cases with complex anatomic LM disease. Whereas, PCI is a short-term solution and is preferable in patients with simple anatomy and noncardiac comorbidities only.

CROSSING THE MITRAL VALVE IN DIFFICULT SITUATION

Dr Manjunath CN, Bengaluru

Balloon mitral valvuloplasty (BMV) is a minimally invasive procedure used to treat mitral valve stenosis, characterized by narrowing the mitral valve opening. It involves using a specialized balloon catheter to dilate the narrowed valve and improve blood flow through the mitral valve.

Some key points about BMV: BMV is safe and effective across a broad spectrum of clinical subsets with mitral stenosis. BMV is a guided, graded and gated procedure. BMV can provide positive outcomes in the long-term and is associated with a low rate of restenosis. Echocardiography during the procedure can optimize the outcomes in complex cases.

Additionally, the over-the-wire technique is helpful in difficult entry situations and left atrial thrombus, including type la, lb and lla.

INTRAVASCULAR LITHOTRIPSY IN THE REAL WORLD: THE REVOLUTION CONTINUES

Dr Sridhar Kasturi, Hyderabad

Advantages of intravascular lithotripsy (IVL):

- IVL offers an effective disruptive action on calcium – very low complication rate
- No debris – Less chances of slow-flow or no-flow phenomenon
- Prevents coronary dissection or perforation
- Selectively interacts with calcified plaque – even in the inner adventitial layer.

Rotablation is preferred over IVL for:

- Severely calcified balloon uncrossable lesions
- Long-segment calcified lesions as it requires multiple IVL balloons of different sizes.

In patients with severe coronary calcification, IVL is safe and effective with minimal complications compared to other techniques like:

- Cutting/scoring balloons
- High pressure balloons or
- Atherectomy devices.

LEFT MAIN BIFURCATION STENTING IN OSTIAL LAD ISR

Dr Tapan Kumar, Jamshedpur

A male patient (87 years old) was admitted with a history of acute-onset chest pain and breathing difficulty. The medical history of the patient showed that he was hypertensive. Additionally, he underwent an s/p percutaneous transluminal coronary angioplasty (PTCA) to ostio-proximal left anterior descending coronary artery (LAD) and proximal left circumflex coronary artery (LCX) in 2018.

The ECG reports of the patient showed that he had an increased level of troponin. Also, the deep T wave was in the lead. The results of the Echo indicated mild hypokinesia of LAD territory. Based on the results, it was diagnosed that the patient suffered from acute coronary syndrome in post-PTCA status. The treatment of the patient included a coronary angiogram and possible PCI.

The following points were highlighted in the case study:

- Ideally, left main bifurcation with LAD ostial in-stent restenosis (ISR) and involvement of other vessels should be considered for CABG surgery.
- Proper selection of bifurcation techniques and adequate planning can result in optimal PCI outcomes.
- It is important to optimize the results by intravascular imaging in LM bifurcation.

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