

# 72nd Annual Cardiology Conference

## THROMBOLYSIS IN INTERMEDIATE RISK PULMONARY EMBOLISM: YES, I WILL LYSE

Dr Shibba Takkar Chhabra, Ludhiana

Submassive pulmonary embolism accounts for 20% of pulmonary embolism cases, with in-hospital mortality of 2-5%. Systemic thrombolysis should be reserved for high risk intermediate pulmonary embolism patients with clinical and hemodynamic deterioration in presence of low bleeding risks. Half dose thrombolysis as one time bolus can be considered with strenuous clinical monitoring. Catheter directed thrombolysis can be considered in patients with failed systemic thrombolysis, clinical deterioration and increased bleeding risks.

## EXERCISE IS GOOD AND SAME IRRESPECTIVE OF GENDER

Dr M Jyotsna, Hyderabad

Regular physical exercise improves the cardiovascular health, both directly and indirectly, in both sexes. Exercise improves effects of the traditional risk factors for cardiovascular disease (CVD). In addition, exercise improves vascular endothelial function, vascular remodeling in favor of angiogenesis, improves cardiac preconditioning and decreases the sympathetic tone in both sexes. There are differences in the occurrence and prognosis of different CVDs in men and women. Not only there are physiological differences in the male and female heart, but also difference in the response to pressure overload. Men and women differ in exercise habits. Recommendations for exercise and physical activity by ACC/AHA guidelines 2019 are same for both sexes.

## WHEN TO INTERVENE IN MYOCARDIAL BRIDGE?

Dr Vijayachandra Reddy Y, Chennai

Myocardial bridge is common, benign and rarely necessitates testing or intervention. Beta-blockers or calcium channel blockers are useful treatment options. Document ischemia before intervention by dobutamine stress echocardiography (DSE), DS-myocardial perfusion imaging (MPI), DS-diastolic fractional flow reserve (dFFR). Minimally invasive surgical unroofing (myotomy) can help in some patients. Coronary stenting is likely deleterious.

## CORONARY INTERVENTION IN WOMEN

Prof (Dr) Lekha Adik-Pathak, Mumbai

- ⇒ Interventions in women is no more a dilemma. All women should be diagnosed properly from their atypical symptoms.
- ⇒ Noninvasive tests have poor sensitivity.
- ⇒ Coronary angiography is a better alternative.
- ⇒ Intravascular ultrasound (IVUS) and optical coherence tomography (OCT) are useful.
- ⇒ Society and family should consider for interventions for women.

## CORONARY IMAGING IN CONTEMPORARY CLINICAL PRACTICE: IVUS IS THE WAY FORWARD

Dr Gary S Mintz, USA

From more than 100 randomized trials, meta-analyses and registries, there is overwhelming evidence that IVUS-guidance improves percutaneous coronary intervention (PCI) outcomes (death, myocardial infarction [MI], ST and repeat revascularization) in simple as well as complex patients and lesions. While there are specific situations in which IVUS-guidance is preferred (left main coronary artery [LMCA], chronic total occlusion [CTO], chronic kidney disease [CKD], etc.), there are also situations when OCT is preferred. However, in the vast majority of cases, IVUS and OCT can be used interchangeably. The argument is not IVUS vs. OCT, but intravascular imaging guidance vs. angiography-guided PCI.

## BALLOON EXPANDABLE VS. SELF-EXPANDING VALVES

Dr Sengottuvelu G, Chennai

Transcatheter aortic valve implantation (TAVI) is a well-established treatment for severe symptomatic aortic stenosis. Both balloon expandable and self-expanding valves are widely used. Balloon expandable valve was the first system used for TAVI and has unique advantages: ease of doing, good results with low gradients, minimal paravalvular leak (PVL), excellent safety profile with low permanent pacemaker implantation (PPI) rates, stroke and patient-prosthesis mismatch (PPM).

With increasing TAVI numbers and longevity of patients, future coronary access becomes very important and

clearly balloon expandable valves do not interfere with successful coronary cannulation as opposed to self-expanding valves.

### SALT, NUTRITION AND HYPERTENSION

Dr T Govindan Unni, Thrissur

Understanding of the sodium handling by the human body is slowly changing. Role of skin and muscle as reservoirs for salt has been accepted. Long-term and short-term high salt intake elicit different response from human body. Spot sample of urine does not reflect daily salt intake. This understanding questions the findings of major epidemiological studies so far. Role of reduced potassium intake in 21st century diet is also important. The Dietary Approaches to Stop Hypertension (DASH) and Mediterranean diet are considered the best for preventing hypertension. Finally, role of gut microbiome is also increasingly discussed in the pathogenesis of hypertension.

### PATHOPHYSIOLOGY AND MANAGEMENT OF SUBCLINICAL ATRIAL FIBRILLATION: KNOWN AND UNKNOWN

Dr Bernard Gersh, USA

- Undetected or silent atrial fibrillation (AF) is relatively common. It is associated with risk of stroke, related to AF burden and risk factors.
- Temporal relationship between both timing of AF and stroke is variable (>30 days in the majority). Whether oral anticoagulation (OAC) has overall benefit is being investigated in trials (ARTESIA, NOAH, Danish Loop). How much AF is too much is not known.
- In the interim – Treat if duration >24 hours, depending on risk factors and individualized risk assessment; Duration of 6-24 hours is a subject of ongoing trials; After cryptogenic stroke, generally treat if >30 seconds-2 mins of AF (recent trials may question this approach).
- Whether, when, whom and how to screen is the subject of ongoing studies.

### PERIPARTUM CARDIOMYOPATHY – AN UPDATE

Dr Sarita Rao, Indore

The diagnosis of peripartum cardiomyopathy (PPCM) should be considered in any pregnant or postpartum woman with symptoms concerning for HF. An elevated brain natriuretic peptide (BNP) level should always be followed by an echocardiogram to assess

for systolic dysfunction. Prompt treatment with medications tailored for pregnancy and lactation may prevent adverse outcomes. Limited studies suggest breastfeeding is safe. Acutely ill women should be managed by specialized multidisciplinary teams, and may require advanced heart failure therapies. Women considering a subsequent pregnancy should be counseled and monitored by physicians familiar with PPCM. Long-term follow-up is important, but the optimal duration of medications following recovery is unknown. Despite many advances in our understanding of PPCM, questions remain about the pathogenesis and complex interaction of genetics with the vascular and hormonal milieu of late pregnancy.

### COMPLEX CORONARY INTERVENTION

Dr Amisha Patel, USA

High-risk PCI can be done safely in patients with severe aortic stenosis by doing balloon valvuloplasty followed by plaque modification with atherectomy.

### BLOOD PRESSURE-LOWERING COMBINATION THERAPY: PUSHING THE BOUNDARIES FOR BETTER ADHERENCE, EFFICACY AND EFFICIENCY

Dr Mark Huffman, USA

Massive scale of hypertension burden requires a response that is effective and efficient, and combination therapy can help. Combination therapy serves as the backbone for many hypertension control programs around the world, including in the US, much like HIV, TB and malaria care. Triple-drug half-dose and quadruple-drug, quarter-dose combination therapies may be strategies to push the boundaries of simplifying treatment to improve adherence, efficacy and even efficiency.

### INTERVENTIONS IN MALIGNANCY: CAN THE CATHETER DO SOME GOOD?

Dr Lijesh Kumar, Cochin

A catheter is a modern day scalpel and interventionist a modern day surgeon. As interventional radiologists, we deal with a wide gamut of clinical scenarios related to malignancy. Catheter based interventions in oncology range in scope across all organ systems and include a host of scenarios, where we contribute either to curative or palliative management. As the cancer burden increases across the world and India set to become the cancer capital, these services help these patients lead a dignified fulfilling life, especially in the setting of longer survival with better oncological treatment.

**MASKED HYPERTENSION: IS IT TOO MUCH STRESS?****Dr SB Gupta, Mumbai**

The prevalence of masked hypertension in patients with treated and well-controlled clinic BP is high. Masked hypertension is more common in patients with CKD and associated with lower estimated glomerular filtration rate (eGFR), proteinuria and cardiovascular target-organ damage. Nocturnal BP is increasingly recognized as a strong predictor of risk in many studies of ambulatory BP monitoring (ABPM). Clinic BP monitoring alone is not adequate to optimize BP control because many patients have an elevated nocturnal BP. The US Preventive Services Task Force concluded that ABPM is the diagnostic method of choice for detecting both outliers of white coat and masked hypertension.

**THE EVIDENCE FOR THE UNIVERSAL BLOOD PRESSURE GOAL OF <130/80 MMHG IS STRONG****Dr Ashok Goyal, Jaipur**

- My thoroughly reviewed and evidence-based answer remains...“YES”
- The evidence for the universal blood pressure (BP) goal of <130/80 mmHg is strong.

**NOACS IN MITRAL VALVE DISEASE – CURRENT DATA****Dr George Koshy A, Thiruvananthapuram**

Non-vitamin K oral anticoagulants (NOACs) are effective and safe in mitral regurgitation and other valvular heart disease with AF. They are safe in mitral bioprosthetic valve with AF, beyond 3 months (may be beyond 48 hours). Mechanical heart valve (MHV) does require vitamin K antagonist (VKA). Newer data suggest that NOACs are more effective than VKA in mitral stenosis (MS) with AF, less bleed. The randomized trial required before NOACs is recommended as “standard of care” in moderate-to-severe MS and AF.

**EVOLVING ROLE OF ANTIPLATELETS IN ACS: IS IT TWILIGHT OF ASPIRIN?****Dr Marco Valgimigli, Switzerland**

Ticagrelor on top of aspirin at 90 mg b.i.d. in the first year after acute coronary syndrome (ACS) or at 60 mg b.i.d. thereafter is associated with lower rates of fatal and nonfatal ischemic events and similar bleeding risk than aspirin (ASA) plus clopidogrel but higher bleeding rates than ASA alone. Ticagrelor monotherapy after a short-course of dual antiplatelet therapy (DAPT) preserves

ischemic protection and lower bleeding risk compared with a DAPT regimen (Conservative statement given the mortality benefit observed in SIDNEY). Given the dramatic difference in bleeding when ticagrelor alone is compared to ticagrelor and aspirin and the absence of ischemic hazard when ASA is early discontinued, ticagrelor monotherapy is emerging as a new standard of care among ACS/PCI patients.

**BIOPROSTHETIC VALVE – IS IT THE FUTURE (IN VIEW OF PERCUTANEOUS INTERVENTION)****Dr Bashi V Velayudhan, Chennai**

Rheumatic heart disease still remains the commonest valvular heart disease among Indian patients. This includes younger patients with multiple valve involvements. Further, the Indian subset of patients have a peculiar anatomy of aortic root, wherein the aortic root is small, and low origin of coronary arteries. There is a strong evidence that bioprosthetic valves degenerate faster in younger and diabetic patients. The average longevity of tissue valve in my personal experience is 12 years. TAVI as an option for structural valve degeneration is a matter of debate given the small aortic root and low origin of coronary arteries. In view of all the above findings, it is not advisable in India to use a bioprosthetic valve in patients less than 55 years of age. Nevertheless to say, we need to accept the risk of anticoagulation with mechanical valve and wait for an ‘ideal valve’ in future.

**LASER ANGIOPLASTY: NEW FRONTIER****Dr L Sridhar, Bengaluru**

Laser angioplasty is an effective debulking strategy, especially in complex coronary lesions and is a simple, safe, promising, novel, user-friendly tool in the armamentarium of Interventional Cardiology.

**NEWER DRUGS IN PAH MANAGEMENT****Dr BKS Sastry, Hyderabad**

Selexipag, a prostacyclin receptor agonist, which is likely to be introduced in India shortly, would be a very useful drug in the management of pulmonary arterial hypertension (PAH). Its dose has to be titrated from 200 µg twice a day to a maximum of 1600 µg twice a day, depending upon patient’s tolerance. New data is emerging that riociguat would be beneficial in patients who do not have adequate response to PDE5 inhibitors.

### **THROMBOLYSIS IN INTERMEDIATE-RISK PULMONARY EMBOLISM: NO, I WILL NOT LYSE**

**Dr Dharmendra Jain, Varanasi**

Routine use of thrombolysis in the intermediate-risk group is not indicated. Patients in the intermediate high-risk group who have persistent or worsening signs of distress may proceed with rescue thrombolytic therapy since the benefits likely outweigh the risk at that point. As per Class III-B ESC 2019 guidelines, routine use of thrombolysis in the intermediate-risk group is not indicated. While approaching such patients: Anticoagulants during the first 24 hours following the diagnosis. If, during the 24 hours, patients have persistent or worsening signs of distress, they may proceed with rescue thrombolytic therapy since the benefits likely outweigh the risk at this point.

However, owing to the equivocal nature of the clinical data related to systemic thrombolytic therapy in patients with submassive pulmonary embolism, the decision to treat these individuals needs careful consideration of the risks and benefits involved. It should be noted that with regard to patients with intermediate-risk pulmonary embolism, studies have indicated the importance of appropriately stratifying each patient based on his or her comorbidities and mortality risk before administering thrombolytics.

### **TRICUSPID VALVE DISEASE: THE NEW FRONTIER**

**Dr Vera H Rigolin, USA**

The tricuspid valve (TV) has a complex anatomy that must be appreciated to safely and successfully treat tricuspid regurgitation (TR). Prognosis of severe TR is poor regardless of etiology. Functional TR is more common than primary TR; most commonly due to left heart disease. Quantification is challenging but important. Treatment of TR is dependent on severity, symptoms, etiology, RV function and concomitant left heart surgery. Percutaneous TV repair – the new frontier - is in its infancy but will likely change the landscape of TR treatment in the near future.

### **ISCHEMIC DISEASE IN WOMEN**

**Dr Dipti Itchhaporia, USA**

The decline in heart disease mortality is due to our better understanding of sex differences and conditions that

affect women, which has led to sex-specific approaches and recognition of entities such as MI without apparent epicardial coronary thrombus or stenosis. MINOCA (Myocardial Infarction with Non-Obstructed Coronary Arteries) patients are more likely to be younger women and they can experience plaque disruption. Takotsubo syndrome, also known as broken heart syndrome, is not the same as an MI and is often seen in elderly postmenopausal women after an emotionally and/or physically traumatic event. MINOCA can be caused by spontaneous coronary artery dissection (SCAD), coronary vasospasm and coronary thrombosis or embolism.

Treatment for MINOCA is based on the underlying cause and involves use of aspirin, statin,  $\beta$ -blockers, clopidogrel, ACE inhibitors, and/or angiotensin receptor blockers (ARBs). Women with ST elevation MI are more likely to develop bleeding complications and less likely to receive guideline-directed medical therapy (GDMT) than their male counterparts. These bleeding complications can be reduced with a radial approach for angiography and PCI. The medical community needs to increase awareness about CVD as the primary cause of mortality in women.

### **STRATEGIES TO INCREASE AWARENESS OF HYPERTENSION IN INDIA**

**Dr A Muruganathan, Tirupur**

*Balance your life when possible, and make time for fun, and help others to achieve well-being.*

India has more people with hypertension than any other country. The disease attributable to hypertension is a hemodynamic malignancy. Hypertension prevalence in India is high, but the proportion of adults with hypertension who are aware of their diagnosis, are treated, and achieve control is low.

The recommended public health actions for national hypertension organizations include increasing awareness that hypertension is mostly preventable, largely caused by unhealthy eating, and can be inexpensively and easily detected. National initiatives such as training community health workers to deliver primary care and implementing universal health coverage should be considered to curb the spread of hypertension and consequent CVDs.

