Cardiology Update India 21: a growing Indio-European educational platform to fight cardiovascular disease

Venkata Ram¹,²*, Ruth Amstein ³, and Thomas F. Lüscher⁴,⁵

¹Apollo Institute of Blood Pressure Management, Hyderabad, India; ²University of Texas, South Western Medical Center, Dallas, TX, USA; ³Zurich Heart House, Zurich, Switzerland; ⁴Heart Division, Royal Brompton and Harefield Hospitals and King’s College, London, UK; and ⁵National Heart and Lung Institute, Imperial College, London, UK

Cardiovascular disease in India

India is a sub-continent with around 1.39 billion inhabitants. The World Bank classifies India as lower middle-income country, but it has one of the fastest growing economies. With urbanization, technologies, and Westernization, cardiovascular diseases (CVD) such as myocardial infarction and stroke common for a century in Europe and the USA are now prevalent in India due to epidemics of obesity, metabolic syndrome, and diabetes (Figure 1).¹,² Thus, CVDs are now the leading cause of death with an age-standardized mortality of 272/100 000 that exceeds the global average of 235/100 000. The profile of CVD shows an accelerated build-up, early age of onset, and a high case fatality. Thus, there is an urgent need for the prevention of CVD, effective treatments, and secondary prevention.²

An Indio-European Educational Programme

Cardiology Update India 21 was the third event of its kind and fills an educational gap via Indian-European collaboration. It was launched by Dr Venkata Ram from Hyderabad and Dallas, a hypertension expert, and Thomas F. Lüscher from London/Zurich, with contributions of faculty from India and Europe, and support from the Cardiological Society of India and the Indian Society of Hypertension. The event was online due to the COVID-19 pandemic. However, this format was highly successful, with over 12 000 participants over 2 days and sessions on prevention, acute and chronic coronary syndromes, hypertension and arrhythmias, and heart failure.

Prevention now and in the future

There has been huge progress in CVD prevention over the last two decades, largely due to antihypertensives, statins, and anti-diabetics. Thomas F. Lüscher started with a lecture on nucleic acid-based therapies that are revolutionizing, currently lipid-lowering therapy through RNA-interference and antisense nucleotides (ASO) against PCSK9,³ lipoprotein(a), and ANGPTL3 and lipoprotein CIII carrying triglycerides (Figure 2).⁴ These new tools are not only extremely tissue specific, interfering only with pathways of lipid metabolism in the liver, but also lasting up to 6 months and surprisingly safe. In short: The pharmacotherapy of the future.

Frank L. J. Visseren, Chairman of the 2021 ESC Guidelines on CVD Prevention in Clinical Practice,⁵ outlined the recommendations at an individual and population level (Figure 2). While recommendations for hypertension,⁶ hyperlipidaemia,⁷ and diabetes⁸ remained unchanged, these guidelines provide an integrated approach bringing all risk factors together using the newly developed SCORE2 card for 10-year CVD risk. The concept of the lifetime risk is an important. The risk calculation has been individualized for younger (SCORE2) and elderly patients (SCORE2-OP) to allow for personalized prevention.

Govindan Unni (Thrissur, India) stressed the concept of ‘the lower the better’ and ‘the earlier the better’ as highlighted by the 2019 ESC Guidelines on the Management of Dyslipidaemia, with lower LDL-C targets of 1.4 or 1.0 mmol/L for high-risk patients.⁷ Rajeev Agarwala (Meerut, India) focused on subclinical atherosclerosis detectable with

* Corresponding author. E-mail: ramv@dneph.com
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ultrasound or computed tomography and biomarkers before symptom onset, providing early identification of CVD with the potential of primordial prevention.

Managing coronary artery disease

Acute and Chronic Coronary Syndromes (ACS) were introduced by Holger Thiele (Leipzig, FRG) on the 2020 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-Segment Elevation (NSTE-ACS). The guidelines recommend that, for diagnostic purposes, as an alternative to the ESC 0 h/1 h algorithm, the ESC 0 h/2 h algorithm with blood sampling at 0 and 2 h could be used, if hs-cTn is used with a validated 0 h/2 h algorithm. Creatine kinase (CK), CK-MB, heart-type fatty acid-binding protein, and copeptin should no longer be used, while B-type natriuretic peptide (BNP) or N-terminal pro-BNP (NTproBNP) remains useful for prognosis.

Prasugrel is preferred over ticagrelor for those undergoing percutaneous coronary intervention. In patients with NSTE-ACS who cannot undergo an early intervention, pre-treatment with a P2Y12-receptor blocker may be considered, depending on bleeding risk. In patients with atrial fibrillation (AF), after 1 week of triple antithrombotic therapy, dual antplatelet therapy (DAPT) is recommended using novel oral anticoagulants and a single oral antplatelet, preferably clopidogrel. C. K. Ponde (Mumbai, India) discussed risk scores for ischaemia and bleeding and searched for the sweet spot, which remains a dilemma because patients with high ischaemic risk often also are prone to bleeding and vice versa. Nevertheless, current risk scores provide guidance in this difficult situation.

Filippo Crea (Rome, Italy) discussed ischaemia with non-obstructed coronary arteries (INOCA) and myocardial infarction with non-obstructive coronary arteries (MINOCA). The spectrum of ACS has expanded, from endothelial erosion mimicking MINOCA to spontaneous coronary dissection, Takotsubo syndrome, or myocarditis. INOCA remains a dilemma with currently no evidence-based treatments. Acetylcholine tests help to identify those with vasospasm who respond to vasodilators. Then, Ajit Mullasari (Chennai, India) reminded the audience of the impact of comorbidities after cardiac surgery, which is particularly important in India, where obesity, metabolic syndrome, and diabetes are prevalent (Figure 1).

Hypertension and arrhythmias

The second day started with Hypertension and Arrhythmias, and a lecture by Venkata Ram on hypertension and dementia, which is a neglected complication of hypertension. Indeed, early and effective blood pressure lowering is essential to prevent silent and repetitive strokes leading to cognitive dysfunction. The challenge of treating high blood pressure was further discussed by Satyavan Sharma (Mumbai), while Ulhas Pandurangi (Chennai) discussed AF, a known complication of hypertension, and its diagnosis and management with NOACs and ablation. Finally, Felix Mahfoud (Homburg, FRG), a member of the 2018 ESC Guidelines Committee on Arterial Hypertension, discussed approaches to resistant hypertension with drugs and renal denervation.
using ultrasound, radiofrequency, or alcohol injection. In RADIANCE HTN TRIO, ultrasound-based ablation of renal nerves was effective in resistant hypertension despite three antihypertensives.14

Heart failure and the new ESC guidelines

The congress ended with Heart Failure. Marco Metra (Brescia, Italy) presented the 2021 ESC Guidelines on the diagnosis and Treatment of Acute and Chronic Heart Failure.15 He explained the new definition of heart failure, which renamed HfmrEF as heart failure with mildly reduced ejection fraction based on sub-analyses of large trials showing that patients with an ejection fraction of 40–50% respond similarly to drugs proven effective in HFrEF. The new sodium-glucose cotransporter 2 (SGLT2) inhibitors received a Class 1A recommendation based on latest trials and cardiac resynchronization therapy is now recommended in combination with an implantable cardioverter defibrillator in those with ventricular arrhythmias and/or myocardial fibrosis, while other patients should be considered for pacing only.

Sanjay Prasad (London, UK) expanded on dilated cardiomyopathies, a less common, but important subgroup of heart failure. He discussed the enormous progress made on the genetic nature of many forms of dilated cardiomyopathy providing important prognostic information in such patients.

Optimization of pharmacotherapy in heart failure remains important as outlined by K.K. Talwar (Delhi). Finally, Thomas F. Lüscher discussed the new SGLT2 inhibitors and their effectiveness in HFrEF with and without diabetes. He discussed the recent trial in HfEF in which empagliflozin was effective, especially in HfmrEF, but less so in patients with true HFrEF and symptoms of heart failure and mildly elevated NTproBNP.

In summary, the Cardiology Update India 21 was a most successful event that appreciated by >12 000 participants from India. Between each annual Cardiology Update, webinars are organized at 3-monthly intervals to provide regular updates of the evolving field of CVD to Indian physicians.

Supplementary material

Supplementary material is available at European Heart Journal online.

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