Cardiology Update London 2018

For the second time, last December experts from the United Kingdom, Europe and the United States (fig. 1) reviewed the year in cardiology at the Royal Society of Medicine in the heart of London. This novel course, supported by the European Society of Cardiology (ESC) and organised by Zurich Heart House (www.zhh.ch), has grown impressively and welcomed over 350 participants from all over the world, including a group from Switzerland.

The state-of-the-art lectures

This postgraduate course started with three state-of-the-art lectures by Peter Libby from the Harvard Medical School in Boston, Patrick Serruys from Imperial College London (on the future role of computer tomography in the management of coronary artery disease) and Milton Packer from the Baylor University Medical Center in Dallas (on the future of heart failure).

Peter Libby set the stage with a lecture on CHIP (clonal haematopoiesis of indeterminate potential), a newly recognised cardiovascular risk factor. We acquire over our lifetime somatic mutations that are associated with haematological disorders [1, 2] (fig. 2). The majority of the variants occur in three genes: DNMT3A, TET2, and ASXL1. Although these mutations markedly increase the risk for haematological disorders, not all individuals develop such diseases. Interestingly, age-related clonal haematopoiesis due to such mutations also doubles the risk of coronary artery disease and stroke. White blood cells carrying such mutation are proinflammatory and develop more neutrophil extracellular traps, and as a result the risk of atherothrombotic complications increases.

Patrick W. Serruys then gave an impressive lecture on the potential of modern coronary computed tomography (CT) in the management of coronary patients even prior to cardiac procedures. Coronary CT provides, with ever decreasing radiation exposure, not only precise information on coronary artery structure, including the SYNTAX score (fig. 3), but also, through the CT-based measurement of fractional flow reserve (FFR), on the haemodynamic significance of plaques [3]. This allows proper and noninvasive planning of coronary and valvular procedures. The vision of Patrick Serruys is that eventually surgeons and interventional cardiologists will reach therapeutic decisions and precisely plan their procedures noninvasively using CT, hopefully with better results to the benefit of the patients.

The third state-of-the-art lecture, given by Milton Packer, was on the future of heart failure (fig. 4). He suggested that novel therapies will become available, such as drugs modulating autophagy, an intracellular process that disassembles unnecessary, dysfunctional components that occur at a considerable rate in disease states such as heart failure. Notably, molecules modulating this process are already available and might be developed for clinical use in
the near future. He also predicted an increasing use of devices in this patient population. Finally, as the number of heart failure patients increases, there will be a shortage not only of heart failure specialists, but also of general cardiologists to manage these patients. As even general practitioners do not have the time and resources to provide guideline-based management of patients with heart failure, paraprofessionals and possibly even robots might take part in the care of these patients.

The course then continued with seven sessions in which all relevant aspects of cardiovascular medicine, including prevention, chronic and acute coronary syndromes, arrhythmias, valvular heart disease, heart failure and cardiomyopathies, where covered by experts in the respective field.

**Breakthroughs in cardiovascular prevention**

Ulf Landmesser, formerly from Zurich and now Chairman of Cardiology at the Charité in Berlin (fig. 5), Gabriel Steg from Paris and Neil Poulter from London discussed current prevention guidelines and the use of novel drugs such as antibodies directed against proprotein convertase subtilisin/kexin type 9 (PCSK9) [4], sodium-glucose co-transporter-2 (SGLT2) inhibitors and glucagon-like peptide-1 (GLP-1) agonists. Imaging to diagnose coronary artery disease and prior to structural interventions was reviewed in two excellent lectures by Jereon Bax, a past President of the ESC from Leyden (fig. 6).

**Arrhythmias and valvular heart disease**

The session on arrhythmias included lectures on atrial fibrillation by John A. Camm from London, on genetically mediated sudden death by Josip Brugada, the discoverer of Brugada syndrome, and on syncope by the chairman of the 2018 ESC Guidelines Michele Brignole. Valvular heart disease remains centre-stage, with transarterial valve implantation or TAVI now evolving into a standard procedure in high and intermediate risk patients with aortic stenosis, as outlined by Bernard Prendergast from London. He also pointed out that, with the broadening indication for TAVI procedures, there will be an increasing need for operators and centres to cope with this clinical demand, which will be challenging for the healthcare systems of many countries. Georg Nickenig from Bonn dissected COAPT [5] and the somewhat smaller Mitra-FR trial [6], which revealed divergent results. Importantly, patients in COAPT had more severe heart failure and mitral regurgitation, larger ventricles, and a higher event rate, suggesting that this patient population may be more suitable for the procedure, as pointed out in a recent viewpoint article in the European Heart Journal [7].
The Paul Wood Lecture 2019

The Paul Hamilton Wood Lecture commemorates the greatest British cardiologist of his time, who performed his first cardiac catheterisation in the United Kingdom in 1947. His major contribution was to refine the bedside diagnosis of heart disease, correlating clinical findings with the chest X-ray, the electrocardiogram and the haemodynamic data obtained by cardiac catheterisation.

This year, a splendid Paul Hamilton Wood Lecture was given by Mark Pfeffer from the Harvard Medical School and Brigham and Women’s Hospital in Boston. He reviewed the development of evidence-based management of hypertension, remodelling and heart failure in recent decades (fig. 7).

This is a modified version of an article published in the European Heart Journal [8].

References