

Extensive training

The London postgraduate course in heart failure

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The new heart failure doctor

Heart failure is the final common pathway of most cardiac conditions, either acquired or congenital. With the enormous progress in the diagnosis and management of heart failure due to imaging, novel drugs and technical developments, cardiologists specialising in heart failure require extensive training not only clinically, but also in imaging, pharmacotherapy, pacemakers and implantable cardioverter defibrillators (ICDs), assist devices, transplantation and post-transplantation care.

The London postgraduate course on heart failure (PCHF)

The Zurich and London Heart House offer a comprehensive postgraduate course with six modules on the spectrum of heart failure and its management over two years. The concept, developed in 2014 in Zurich, has been refined and improved, to become the prime course in which the European Society for Cardiology (ESC) Heart Failure Association (HFA) collaborated. Of the large number of applicants, 65–70 from over 20 countries are accepted (fig. 1), in the second course including nine from Switzerland. As part of their assessment, delegates have to present challenging cases from their centres and pass the examinations after each module.

Module 1: Assessment and diagnosis

Module 1 started with epidemiology of heart failure presented by Aldo Maggioni. The diagnosis based on the 2021 ESC Guidelines on the Management and Treatment of Acute and Chronic Heart Failure, was reviewed by its chairwoman, Theresa McDonagh. The importance of N-terminal-pro-B-type natriuretic peptide (NTproBNP) was stressed by Christian Müller, and Shouvik Haldar demonstrated subtle ECG changes in heart failure. Finally, Jeroen J. Bax stressed the central role of echo and multimodality imaging. Stephan Rosenkranz ran an outstanding hands-on session with a simulator on the haemodynamics of right heart catheterization.



Figure 1: Proud graduates received the Certificate in Heart Failure Management during the ceremony at the Royal Institute of British Architects.

Echocardiography is often limited in assessing left ventricular function and perfusion, which can be overcome using contrast as outlined by Roxy Senior with practical examples presented by Alison Duncan and Rajdeep Khattar. Dudley Pennell presented diffusion tensor imaging using advanced magnetic resonance imaging (MRI), which allows in-depth tissue characterisation of myocardial performance. MRI and genetic testing allow in-depth characterisation of cardiomyopathies, risk stratification and individualised use of drugs and ICDs, as outlined by Sanjay Prasad. Finally, adult congenital heart disease is complex, but its basics have to be known by any heart failure physician as stressed by Aidan Bolger and Michael Gatzoulis.

Despite the omicron variant of SARS-CoV-2, module 2 took place in November 2021 in hybrid format. The 2021 ESC Guidelines, phenotyped heart failure as heart failure with reduced ejection fraction (HFrEF), heart failure with mid-range ejection fraction (HFmrEF: now “mildly reduced” ejection fraction) and heart failure with preserved ejection fraction (HFpEF). How management was optimised by initially lumping and later splitting different heart failure populations was reviewed by Thomas F. Lüscher, and the ESC Guidelines co-chair Marco Metra summarised recommendations on HFrEF, and Burkert Pieske provided a definition of HFpEF. A particular focus was on comorbidities – obesity, diabetes, renal dysfunction – discussed by world-class trialists, namely Milton Packer, John McMurray, Christoph Wanner and Dipak Kotecha. Further, Benjamin Meder and Jens Mogensen discussed the genetics of cardiomyopathies and their outcomes and management; Claudio Rapezzi and Ashutosh Wecha-lekar reviewed novel treatments for cardiac amyloidosis.

Module 3: Treatment and follow-up of heart failure

The ongoing pandemic then led to a fully remote Module 3 broadcast from the TV studio of the Zurich Heart House with LIVE moderation by Thomas F. Lüscher, Christoph Wanner, Gerhard Hindricks, Bettina Heidecker and Giovanni Camici. The heart-kidney axis and renal injury were discussed by Wilfried Mullens, Bertram Pitt and Faiez Zannad, and indications for cardiac resynchronisation therapy (CRT) / ICD were discussed by Mads Kronborg and Cecilia Linde. With COVID-19, myocarditis gained a lot of interest as outlined by Bettina Heidecker, and Rakesh Sharma. Ulf Landmesser and Thomas Thum looked in the future of RNA-based therapeutics.

Module 4: Catheter ablation and devices in heart failure

Module 4 provided hands-on training on simulators for device implantation, electrophysiology and virtual reality in Abbott’s Advanced Technology Centre in Brussels. Programming and optimisation of CRT using echocardiography was trained with simulated cases. LIVE transmissions from Leipzig and Prague on catheter ablation and pacemaker implantation provided practical insights. Josef Kautzner and Gerd Hindricks discussed the potential of novel pulsed field ablation for atrial fibrillation using cold electroporation allowing for fast, reliable and safe procedures. Further, Sergio Richter performed an impressive LIVE CRT implantation, while Wilfried Mullens reviewed its optimisation. It ended with inspirational talks on career development, HeartTeams and the art of writing scientific papers by Wilfried Mullens, Francesco Maisano, Filippo Crea and Giovanni Camici.

Module 5: Multidisciplinary procedures in heart disease and heart failure

Aortic stenosis, mitral regurgitation and tricuspid regurgitation are major causes of heart failure requiring a competent HeartTeam. The fascinating anatomy of the aortic valve and conduction system was demonstrated by Yen Ho, followed by lectures on imaging for aortic stenosis by Jeroen Bax, on patient selection by Thomas Pilgrim and ESC Guideline recommendations by Victoria Delgado. Mitral regurgitation was discussed by experts such as Bernard Lung, Georg Nickenig and Alex Vahanian. Right heart failure and tricuspid regurgitation are the next frontiers as predicted by Stephan Rosenkranz and Georg Nickenig. In a “how-we-do-it” session, Michel Zuber demonstrated ultrasound-guided interventions, and Francesco Maisano provided a “live-in-a-box” of surgical mitral repair. Cardiogenic shock is another frontier where mechanical circulatory support (MCS) is a hope as pointed out by Holger Thiele, Simon Davies, Christian Hassager and Patrick Hunziker. Cardio-oncology was reviewed by Alex Lyon, Thomas Suter and Teresa Lopez Fernandez. Lastly, hands-on imaging was taught in the newly opened Royal Brompton Diagnostic Centre with cutting edge echo by Rajdeep Khattar, Cemil Izgi demonstrated CMR cases, Saeed Mirsadraee and Tom Semple reviewed computed tomography and Richard Underwood and Kshama Wechalekar nuclear / positron emission tomography.

Module 6: Acute and advanced heart failure and graduation Ceremony

The last module focussed on acute and advanced HF and featured again a prominent faculty, with Piotr Ponikowski, Alexandre Mebazaa, Faiez Zannad, Mandeep Mehra among others with lectures on the acute and long-term management of acute heart failure. Advanced heart failure involves mechanical circulatory support for bridge to recovery or transplant or destination therapy. The module ended with sessions on heart transplantation, palliative care and future perspectives in cardiology. The graduation ceremony took place at the Royal Institute of British Architects (RIBA) together with faculty members and the alumni community of the PCHF London.

Announcement of the third PCHF London 2023/2024

The registration platform for the new cohort of students is open from 1 September 2022 on www.heartfailurecourse.uk. The third course will start in June 2023 and end in October 2024.

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