The Daily Wire

THE OFFICIAL EUROPCR COURSE NEWSPAPER

EDITION ONE, 17 MAY 2022

2022 euroPCR

LIVE demonstrations

Including Robotic PCI LIVE

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30 years of transradial access

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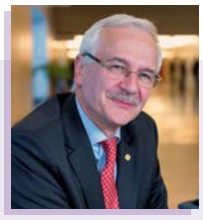
A GOOD THING IS WORTH WAITING FOR

Let's celebrate, we are back!

EuroPCR is back in Paris and extending the PCR family worldwide.

Wherever you are, let's share, learn and innovate as a community!

LIFELONG LEARNING
The greatest celebration of all



William Wijns
PCR Chairman
The Lambe Institute for Translational Medicine and CÚRAM, National University of Ireland Galway - Galway, Ireland

Welcome to EuroPCR 2022 – whether you are joining at the Palais des Congrès, in a PCR Hub, Local Pod or virtually on the Course platform, you are representing an amazing total of 107 different countries!

Resilience and adaptation, throughout
The last time we had the pleasure of gathering face to face in Paris was in 2019, when we celebrated the Course's 30-year anniversary and launched the PCR Companions programme. We shall not dwell on circumstances since then, but focus rather on your exceptional resilience over the past couple of years. PCR was proud to be able to provide support and maintain the link with the community throughout, even at the peak of the pandemic. Indeed, the team rose to the challenging task of completely rebuilding education. You may like to read more about how PCR Courses adapted and evolved to this innovative and blended onsite/online edition of EuroPCR in an article on pages 16–17. It echoes some of our deeper reflections on how 'Education must go on…' shared earlier this year in *EuroIntervention*.[1]

A silver lining: Enhanced global outreach
Prior to the recurring lockdowns, digital education was of course already an option for those unable to travel. However, the pandemic triggered a massive IT enterprise at PCR that has resulted in a giant leap in technology and increased opportunities for real-time interaction during our Courses. Consequently, this year EuroPCR's digital package is giving practitioners all around the world access to an unprecedented quality of content and real-time peer exchange between onsite and online participants that was not previously available. This is a fantastic means to promote the worldwide standardisation of practice. A practical example is the simulation-based learning that is bringing the online participant so close up that they could almost be in the room. Topics covered include image-guided bifurcation stenting - live from Japan; antegrade CTO; TAVI; bifurcation techniques and transseptal puncture for mitral interventions.

Nothing beats face-to-face interaction
Still, we can only rejoice at how many of our peers are actually joining us in person, in Paris. Participants will always recognise face-to-face learning as being the *crème de la crème* of education, for countless reasons. Open discussions in a non-judgmental environment foster collective intelligence and enable you to readily assess and consolidate your knowledge; hands-on experience in the Training Village is the ultimate means for improving your practical skills; and simply being together of course develops a beneficial sense of community and belonging. On this note, may we invite all healthcare practitioners to sign up to the PCR Companions collective programme. Over 10,000 have already done so, and those onsite can take advantage of a dedicated Lounge where they can network, relax and celebrate being back together again.

Much cause to celebrate
We are fortunate to have several reasons to celebrate this year. First among them are the 20 years of TAVI and 30 years of radial access, which have both had such a positive impact for our cardiovascular patients. At PCR Publishing, there are multiple events to rejoice over too: the 10th anniversary of the EAPCI-PCR Textbook, over 200 issues of *EuroIntervention*, the indexing of *AsiaIntervention* in PubMed, the redesign of the PCR Trials Book, and 20 years since PCRonline was launched. Our thanks here to all of the editors, authors, readers, submitters, partners and everyone behind the scenes who have contributed to their great relevance and success.

An extensive programme for onsite and online participants
The synergy of worldwide practitioners, institutions and national societies has gone into making EuroPCR 2022's programme fully relevant to the community's daily practice. There's the return of LIVE demonstrations in the Main Arena, where you'll be able to learn from educational cases on NSTEMI PCI, OCT in MVD PCI, robotic PCI, TAVI and transcatheter mitral edge interventions. Important new data will be shared in the late-breaking trial presentations, innovation will be in the spotlight, and among the 290+ sessions you'll find a great insight into 'The cathlab of tomorrow, already here today' and all the latest on the management of hypertension. This happens to coincide with World Hypertension Day, which is focusing this year on the accurate control of blood pressure.

Built as always, *by and for* the community
We're delighted to host the EAPCI-PCR Fellows Course, and to have tailored a programme for the nurses and allied professionals who play such an important role in the cathlab, and with so much dedication. We also look forward to discovering all the sessions built from the great work you sent into this year's Calls for Submissions, and to following the different competitions: the inspiring PCR's Got Talent scientific abstract competition; the Jon DeHaan Foundation's generous grant for the best innovation that will be announced during PCR Innovators Day; and a brand new Personalised Care Award. Our industry partners have also provided valuable support for a sponsored programme, for what promises to be a bustling Training Village, and an Exhibition Area in which to keep up to date on all the latest news and innovations.

Seize the moment, share the knowledge
You will all have exclusive access to the replays and videos on demand for 3 months, so we recommend you take the time to browse the programme and choose carefully what you want to join 'live' - in Paris or from home. Take advantage of every single moment over the 4 days to learn and interact with your peers. Whether it's by raising a traditional hand, asking a question via the PCR Courses app, or on the platform's real-time chat, each minute is precious! Don't hesitate to join the discussion on social media too, using #EuroPCR. Then, after the Course, take the time to reflect on the key take-home messages, to share and discuss them with your colleagues back home, and to apply them in your daily practice.

Finally, our most sincere thanks to all of you. Your participation in EuroPCR proves your commitment to lifelong learning and to providing better patient care. And that deserves the greatest celebration of all.

Jean Fajadet
William Wijns

1. Wijns W, Fajadet J, Prendergast BD, Doncieux M. Education must go on… EuroIntervention 2022;17:1044–1045.

SUBMISSIONS TO EUROPCR 2022: Back on track!

Jean Fajadet
PCR Vice-Chairman
Clinique Pasteur - Toulouse, France

Professor Jean Fajadet explains how, with an increase in submissions compared with 2021 and with higher quality than ever before, submissions to EuroPCR 2022 promise to bring the best research to delegates from around the world.

How does the number of submissions to EuroPCR 2022 compare with EuroPCR 2021?
Compared with last year, submissions to EuroPCR 2022 have shown a significant increase of around 23%. The number is lower than what we saw in 2019, before the pandemic, but this is only to be expected, given the disruption to research over the last two years. In terms of types of submissions, we are seeing even more late-breaking trials, innovations and images. Overall, based on this year's numbers, we expect that by 2023, submissions will return to, or even exceed, pre-pandemic levels.

Submissions have come from all over the world. In addition to Europe and the USA, colleagues in South America, Africa, the Middle East and India are well represented. It is encouraging to see that most of the authors submitting to EuroPCR this year wanted to come to Paris to present their findings in person, showing that there is a real desire from within the community to reconnect after these difficult few years.

Reviewing EuroPCR submissions, Selection Meeting, 2022

What topics are 'hot' this year?
The most popular category is CAD. Major interest in this area includes bifurcation lesions – focusing on treatment techniques, particularly the two-stent strategy – and calcified lesions, especially plaque preparation, different atherectomy devices and shockwave lithotripsy. There are also some excellent cases showing the variety of new techniques available for the treatment of chronic total occlusion. Tying in with the focus of the scientific programme, there are quite a few submissions on the physiology of CAD and how it can be combined with non-invasive computed tomography imaging. Other imaging areas of interest include intracoronary imaging using intravascular ultrasound and optical coherence tomography for the evaluation of lesions pre- and post-procedures. Finally, this is only the second year we have seen submissions on robotic PCI for CAD, which is set to revolutionise the field of interventional cardiology.

Valvular disease is the second most popular submission category, including TAVI and mitral valve procedures, and we have also received some very good cases on peripheral artery disease. The results of meta-analyses will make the hypertension programme particularly interesting this year.

How does the quality of submissions compare with previous years?
We have seen a notable increase in quality over the last few years and this year is no exception. A key feature of an ideal submission is a clear message and we have seen a high standard of this in 2022. Clear submissions often make good, clear presentations and this really helps to get the message across to the audience.

EuroPCR 2022 promises to be a celebration of high-quality science!

LIVE CENTRES IN FOCUS

Screened from renowned centres of excellence, LIVE cases provide an unparalleled learning experience and the opportunity to take home techniques and best practices for optimal patient care.

We asked two of this year's centres to tell us about their setup and how they feel about being part of EuroPCR 2022.

Toulouse, France

Clinique Pasteur

Centre established in 1957

Practitioners include about 200 practitioners (including 45 cardiologists and cardiac surgeons) and 1,250 employees (around 900 of whom are paramedics)

Most frequent types of interventions/procedures: Around 5,000 coronary angiographies, 3,300 angioplasties (robotic-assisted or not) and 1,000 structural heart disease treatments (aortic, mitral and tricuspid) per year

How would you describe your centre? We are a leading cardiology centre offering excellence, innovation and ethical standards to its patients. Clinique Pasteur has long-lasting expertise in cardiology and benefits from adopting a multidisciplinary approach to patient care using latest technologies

Number of times the centre has participated in EuroPCR: For as long as EuroPCR has existed – each year since 1989!

"From the beginning to 2022, from Professor Marco and Dr Fajadet to the next generation, we are excited and grateful to be part of EuroPCR, the world-leading course in interventional cardiovascular medicine. It is our way to reach, enhance and share our experience"

London, United Kingdom

St Thomas' Hospital

Centre established in 1100

Practitioners include >30 cardiologists, 3 structural interventionists, 1 valve fellow, 4 structural heart disease nurses and 8 cardiac surgeons

Most frequent types of interventions/procedures: TAVI, TAVI in mitral, mitral edge-to-edge repair, complex PCI, Impella, ECMO

How would you describe your centre? Our centre delivers excellent clinical outcomes despite performing complex, cutting-edge procedures. We have approachable staff, make a great team and provide excellent, high-quality training

Number of times the centre has participated in EuroPCR: More than 10 times

"We very much enjoy being part of the PCR family and working together to provide the best patient care"

LIVE CASES TODAY!

Toulouse, France

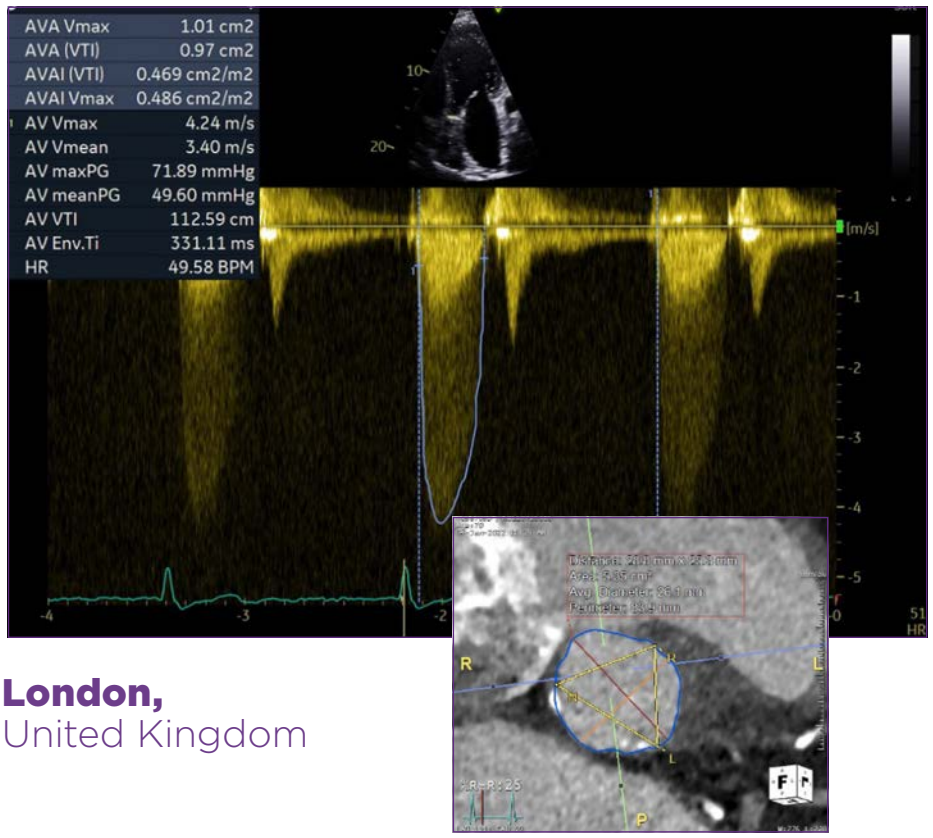
The LIVE case programme kicks off with a demonstration of state-of-the-art robotic PCI with operators, Nicolas Dumonteil and Bruno Farah taking us through the procedure, live from Toulouse.

Robotic PCI: LIVE case from Clinique Pasteur - Toulouse, France

Main arena, 08:45 – 10:00

- What are the benefits of using robotic-assisted PCI?
- Is this technology good enough for complex lesions (e.g., heavily calcified, bifurcation)?
- Is it more accurate than the 'traditional' procedure?

Come and find out!



London,
United Kingdom

Then follows an interesting case from London where, after strategic and technical discussions, Tiffany Patterson, Bernard Prendergast and Simon Redwood will perform a LIVE TAVI.

TAVI: LIVE case from St Thomas' Hospital - London, United Kingdom

Main arena, 10:30 – 12:00

- TAVI in asymptomatic patients with severe AS – does it really matter?
- What is the best timing for TAVI in such patients? The sooner the better?

DON'T MISS TODAY'S OTHER LIVE CASES

Transcatheter mitral edge intervention: LIVE case from Clinique Pasteur - Toulouse, France

Main arena, 13:30 – 15:00

NSTEMI PCI: LIVE case from St Thomas' Hospital - London, United Kingdom

Main arena, 15:30 – 17:00

PICK OF THE DAY, BY YOUR PEERS

Your colleagues share their top session choices taking place today!

We asked different heart team members from various professional backgrounds to tell us which sessions they are really looking forward to today and why.

With so much to choose from, who better than your peers to advise on which sessions to participate in?

Lynne Hinterbuchner

Nurse

Retired from University Clinic Salzburg / now External lecturer for University of Applied Science - Linz, Austria

Toolbox for implementation of a successful and safe CTO service

Room Learning, 10:30 – 12:00

Learning what equipment is important for chronic total occlusion (CTO) is essential not only for cardiologists but also for nurses and allied professionals (NAPs) involved in this specialty. Being prepared starts by having the right equipment, the 'tool box', in the room. This session guarantees to prepare cardiologists and NAPs for what is needed to start a CTO programme, focusing on equipment and implementation of a service. Make sure you have a notebook handy because I'm sure you'll be taking notes to share with your team at home!

Peculiar causes of STEMI

Tour Eiffel Case Corner, 10:30 – 12:00

Clinical case sessions are a rich source of learning and are my personal favourite. The cases being presented today are the best among many submissions. When you have cases sent in by people from all over the world, just imagine what you can learn! Many of the cases are rare; you may not use the information today, but somewhere in your career you will have an 'aha!' moment where a light goes on, and you think, "I remember a case like this presented at EuroPCR, and this is what they did". Case sessions are great ways for everyone, no matter where they are in their career, to learn from others.

Valve-in-valve: the journey starts with the first prosthesis

Theatre Bordeaux, 12:15 – 13:15
(sponsored by Edwards Lifesciences)

As the valve-in-valve procedure becomes more prevalent, it is important to understand the impact of this intervention on the lifetime management of patients. Learn how to mitigate problems and be prepared for potential problems before they happen. Being properly informed, knowing clinical considerations and specific procedure techniques prepares the operator for the best outcomes for the patient. This sponsored event has a team of experts available to help you learn about this evolving area of expertise.

New insights from clinical trials in coronary artery disease

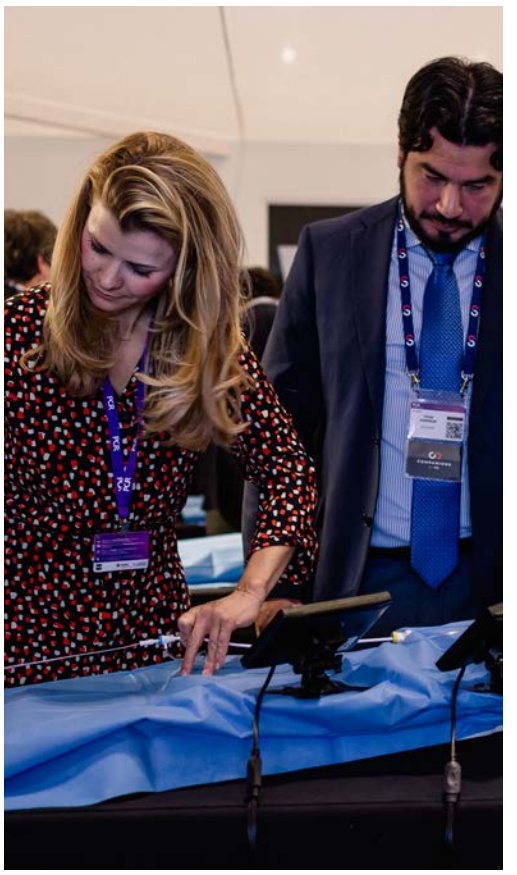
Room Maillot, 13:30 – 15:00

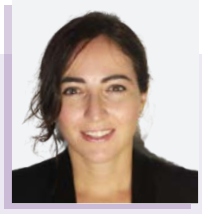
This late-breaking trials session is a must for anyone wanting to keep up to date with what's happening in the world of interventional cardiology. The trials vary from what to do with patients' dual antiplatelet therapy to computed tomography-guided imaging in angiography for patients with a coronary artery bypass graft. There will be lots of time for discussion, so come with your "I want to know" attitude and get the conversation going.

Innovations in simulation-based training, procedural planning, monitoring and robotic PCI

Room 251, 15:30 – 17:00

As an educator, I am always interested in new ways to teach skills. If you're interested in education, come and see how simulation training can enhance understanding, especially when learning first-time technical skills and manipulation of devices. Several different types of simulation models used for teaching hands-on techniques for valve, stents, CTO, telemedicine and transseptal puncture interventional procedures will be shown, and there will be time to discuss the finer points of uses for training.





Marina Urena
Interventional cardiologist
Bichat Hospital - Paris, France

Robotic PCI: LIVE case from Clinique Pasteur - Toulouse, France

Main Arena, 08:45 – 10:00

This case will provide a glimpse into the future of coronary interventions. I am sure that to start the day (and the course) learning about this new and appealing technology will be very exciting. I recommend this session to all interventional cardiologists interested in coronary interventions and innovation, in particular, those early in their careers and nurses. Although futuristic, this session will allow us to visualise what the future of coronary interventions is likely to be. Learning about this technique will be very useful to those starting a career in interventional cardiology and stimulating for those at a more advanced stage. The Clinique Pasteur is one of the highest-volume centres in France and one of the first to adopt new technology and therapies. Renowned operators will take part in this LIVE case. The session will provide you with an excellent overview of the technique of robotic PCI.

Leading clinical evidence while disrupting the mitral paradigm with clip therapy

Room Maillot, 12:15 – 13:15 (sponsored by Abbott)

This session will be very useful for interventional cardiologists interested in structural heart valve interventions, in particular, those starting a mitral valve program, echographers or clinical cardiologists interested in percutaneous valve interventions. Very helpful teaching points regarding the new indications of MitraClip, the selection of patients and screening before a percutaneous mitral valve repair, as well as useful tips and tricks, will be provided by expert operators, along with the panel of experts who were involved in the development of the last guidelines.

Do not forget tricuspid valve disease

Room Learning, 13:30 – 15:00

The tricuspid valve is the new horizon in structural interventions, and percutaneous tricuspid valve repair therapies will probably be performed in routine clinical practice in the near future. This session is recommended for those interested in heart valve interventions, in particular those with experience in mitral procedures looking to develop a programme of tricuspid interventions, echographers or clinical cardiologists interested in heart valve diseases. The outstanding panel, including pioneer surgeons and interventional cardiologists involved in the development of these therapies, will provide you with a very useful overview of different therapies, patient selection processes and screening for percutaneous tricuspid valve therapies.

Artificial intelligence in interventional cardiology: where are we in 2022?

Room 251, 13:30 – 15:00

My final recommendation is for interventional cardiologists, clinical cardiologists, echographers, or nurses with a particular interest in clinical research. Artificial intelligence (AI) is changing healthcare in general and is likely to change clinical practice and research in cardiology in the near future. In my opinion, cardiologists should be aware of the potential impact of AI in our practice. Led by a panel of experts with experience in data analysis using AI, this session will provide you with an update on the use of AI in cardiology research.

Maurizio Taramasso
Cardiac surgeon, Structural interventionalist
HerzZentrum Hirslanden Zürich - Zürich, Switzerland

PCR Tricuspid Focus Group update: present and future of tricuspid regurgitation treatment

Room 242A, 15:30 – 17:00

Tricuspid valve treatment is the most rapidly growing field in structural valve intervention. The PCR Tricuspid Focus Group was established to facilitate innovation and the development of up-to-date clinical care for patients with tricuspid valve disease. The main goals of the group are aligning knowledge, unifying practice and eliminating cultural barriers among physicians and associations. Join this session if you want to gain a deep insight into current tricuspid therapies, outcomes and different clinical solutions for patients with tricuspid valve disease. The session will be interactive, driven by case-based discussion, and will explore future perspectives in the field of transcatheter tricuspid valve intervention. It is a unique opportunity – for general and interventional cardiologists, cardiac surgeons, interventional imagers, heart failure specialists, innovators, industry personnel, nurses and fellows – to network and for getting in contact with the activities of the Tricuspid Focus Group.

Valve-in-valve: the journey starts with the first prosthesis

Theatre Bordeaux, 12:15 – 13:15 (sponsored by Edwards Lifesciences)

After the recent evidence on outcomes of TAVI in low-risk patients, with an expansion of its indication to include these patients, the concept of 'lifetime management' of patients with aortic stenosis is becoming of paramount importance. The ultimate target of the treatment of aortic stenosis should be the 'neutralisation' of the disease, which means not only restoring life expectancy in patients with minimal risk but also minimising the consequences of the treatment on the patient's remaining life. In this regard, the choice of the initial treatment and prostheses must take into account the long-term consequences of the initial treatment, including the future need for a second valve. Other important elements are durability, haemodynamics, coronary access and commissural alignment, conduction disturbances and the risk of a paravalvular prosthetic leak. Interventional cardiologists, clinical cardiologists, cardiac surgeons, echocardiographers, nurses and technicians with interest in the lifetime management of patients with aortic stenosis should join this session.

Emerging indications for TAVI

Studio Havane, 13:30 – 15:00

This session will be led by an outstanding faculty and will focus on different emerging indications for TAVI, including less-than-severe aortic stenosis, asymptomatic patients and pure non-calcific aortic regurgitation. The session is a must for all clinical and interventional cardiologists, cardiac surgeons, fellows and nurses interested in the possible future evolution of TAVI indications, keeping an eye on the current clinical evidence and available data in this continuously evolving field.

Sinjini Biswas
Interventional cardiologist
Bristol Royal Infirmary
- Bristol, UK

How should I treat complex left main: trifurcation, in-stent restenosis

Theatre Bordeaux, 10:30 – 12:00

While left main PCI is becoming an increasingly common procedure, it continues to pose challenges, particularly in distal left main trifurcation, where the choice of bifurcation technique and management of the different daughter vessels becomes more of a dilemma. Furthermore, as the volume of left main PCI increases, as much as we try to provide a durable stent result in the left main, we will undoubtedly be faced with more cases of left main in-stent restenosis. This session will provide insights into these complex left main PCI scenarios using a case-based approach and should be useful to all complex PCI operators.

Emerging indications for TAVI

Studio Havane, 13:30 – 15:00

The landscape for TAVI has changed markedly, with evidence of its benefit even in patients with low surgical risk. Today's session promises to discuss some of the newer patient and aortic valve disease subsets in whom TAVI may be of use. This session should be of interest not only to TAVI operators but to anyone who sees patients with aortic valve disease and therefore has to grapple with uncertainties in the diagnosis and management of aortic valve disease.

Selecting CTO strategies – Quo vadis based on angiograms

Studio A, 15:30 – 17:00

With the introduction of new techniques, availability of dedicated equipment and development of specialised training programmes, safety and rates of success of PCI for CTO lesions have improved substantially. To maximise chances of success in CTO PCI, it is worth investing time into analysing the diagnostic coronary angiogram carefully. This session features expert CTO operators demonstrating how to analyse angiograms for the planning of CTO PCI and will be useful for operators starting or wishing to start a CTO PCI programme.

Tailored management of spontaneous coronary artery dissection

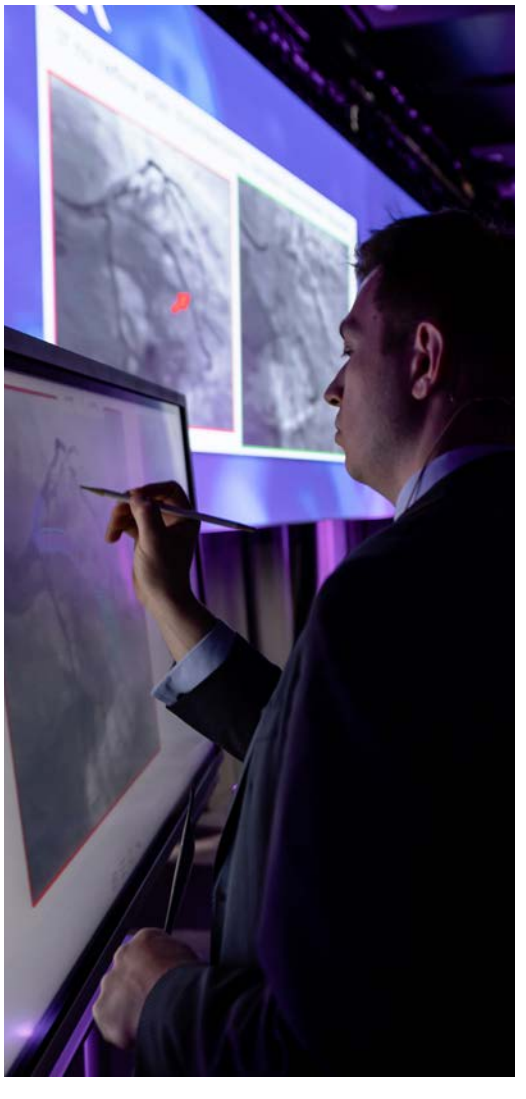
Room 253, 15:30 – 17:00

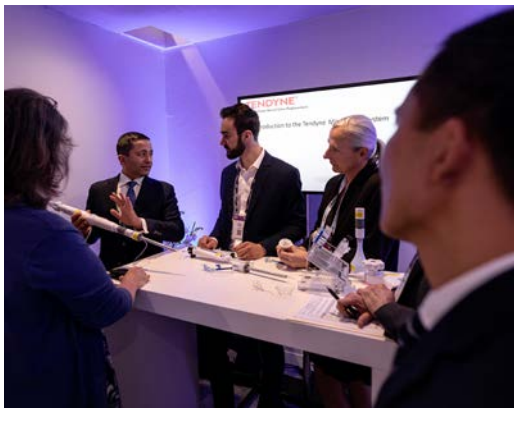
Spontaneous coronary artery dissection (SCAD) remains, in my opinion, one of the most challenging disease subsets to treat. It is often difficult to decide whether to treat conservatively or invasively with PCI. And an invasive approach involves important considerations regarding the PCI technique. This afternoon's session will be of interest to all PCI operators, as we will all undoubtedly be faced with patients with SCAD, for whom difficult decisions have to be made.

Bailout options and techniques during PCI: distal perforation

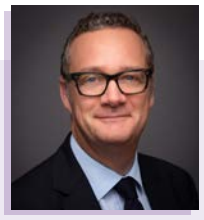
Room 243, 15:30 – 17:00
(a joint educational project between PCR and Terumo Learning EDGE)

Sessions on complications are always a highlight of interventional conferences. Simulation-based teaching remains an incredibly useful way of learning how to manage complications in a safe environment. This session will explore strategies to manage distal perforations in a timely manner using a mixture of didactic teaching and Terumo simulation models. This session should be of particular interest to fellows and early-career operators who may not have had to treat distal perforations in the cathlab yet, but will undoubtedly be faced with similar events in the future. As the adage goes – to fail to prepare is to prepare to fail!





NEW! PERSONALISED VASCULAR CARE AWARD



Nick West
Chief Medical Officer & DVP Global Medical Affairs
Abbott Vascular - Santa Clara, USA

This year, Abbott is supporting an award for the best idea or project that enhances personalised cardiovascular care for patients.

But why was the award created? Dr Nick West, Chief Medical Officer of Abbott's Vascular Division explains: "Although medical device companies have traditionally focused on tools and their deployment in interventions, we recognised that such a narrow vision does not adequately capture the diverse needs of individual patients. Rather than simply 'fixing things,' **we want to adopt a more holistic view of the entire patient journey**. In particular, we want to explore whether the power of novel technologies and analytics can be harnessed to optimise care before, during and after the intervention."

In 2020, **Abbott launched the Beyond Intervention research initiative** to gain insights from patients, physicians and healthcare leaders into the current state of vascular disease care and to explore perceptions on how management could be improved by employing technological advances and increasing data visibility. "Our Beyond Intervention surveys have made it very clear that patients themselves have an advanced idea of personalised care," notes Dr West. "In addition, **physicians and healthcare leaders responded that they want data-driven decision-making to help treat patients more effectively**, and have helped us to understand some of the roadblocks to tailoring management. We now want to take our research to the next level and to take action – the Personalised Vascular Care Award at EuroPCR 2022 is one way that we can bring more focus to this area, to drive interest and innovation."

From all the scientific abstracts, late-breaking trials and innovations submitted to EuroPCR 2022, three finalists were short listed by PCR to present their projects related to personalised care at a dedicated session today. A judging panel will review the projects and, at the EuroPCR 2022 Awards ceremony on Friday, the winner will receive a €10,000 award towards continuing their research.

Asked about the characteristics of the winning entry and the shortlisted projects, Dr West says, "We are very interested in novel technologies that take multiple patient factors into account and identify those patients for whom a more **bespoke care pathway really will improve outcomes**. Myocardial bridge evaluation, the patient's TAVI journey and the antithrombotic strategy after PCI are among a number of key areas where we need to go beyond standard of care to provide a new standard – personalised care." He concludes, "And I am looking forward to seeing even more examples of how technology can be used for precision interventional cardiology over the course of EuroPCR 2022."

DON'T MISS

Award for best personalised vascular care project
Tuesday, Studio A, 14:30 – 15:00

EuroPCR 2022 Awards – Personalised vascular care award
Friday, Main Arena, 11:00 – 12:05

Meet the FINALISTS

Domenico D'Amario
Fondazione Policlinico Universitario Agostino Gemelli, Centro di Medicina dell'Invecchiamento - Rome, Italy
Myocardial bridge evaluation towards personalised medicine

Valentina Frittitta
Policlinico G.Rodolico-S.Marco - Catania, Italy
TAVI in our centre: from early feasibility to patient-tailored procedure

Antonio Greco
University of Catania - Catania, Italy
DAPT modulation after PCI for ACS

Session Spotlight: WHAT IS THE BEST ANTITHROMBOTICS STRATEGY AFTER PCI?

Marco Valgimigli
Cardiologist
Cardiocentro Ticino - Lugano, Switzerland

Case-based discussions and the very first presentation of data from two meta-analyses combine in an interactive session that aims to help clinicians navigate their way through the use of acute and chronic antithrombotics.

Professor Marco Valgimigli explains, "It's great that we now have a whole variety of antithrombotic agents and strategies available for use in patients undergoing PCI. However, this choice brings with it the problem of deciding which antithrombotic to use for which patient. Also, which antithrombotic regimen is best in the first 12 months after ACS or PCI and what is the optimal strategy beyond the first year?"

This highly interactive session uses cases to explore the management of patients in the different phases. The discussion will be informed by the **presentation of never-before-seen data from two network meta-analyses.** "What today's physician is missing is data on the comparative effectiveness of the multiple antithrombotic agents available," says Professor Valgimigli. "We conducted two network meta-analyses – one in the acute and one in the chronic setting – simulating the comparison of treatment options that have never been investigated in head-to-head studies. These rather unique analyses include data from the earliest studies right up to the present day."

"What we found from the acute meta-analysis," says Professor Valgimigli, "is that ticagrelor monotherapy, dual therapy with aspirin plus ticagrelor and triple therapy with aspirin plus rivaroxaban and clopidogrel all reduced mortality compared with aspirin plus clopidogrel. However, the mortality benefits of the combination therapies came at the cost of an increased bleeding risk not seen with ticagrelor monotherapy. **In the long-term meta-analysis, aspirin plus clopidogrel and P2Y12-inhibitor monotherapy, especially ticagrelor, were the most effective regimens for reducing the risk of myocardial infarction compared with aspirin alone.** However, a combination of aspirin plus rivaroxaban was the most effective treatment option for reducing the risk of stroke." Similar to what was seen in the acute meta-analysis, combination therapy increased the risk of bleeding in the long-term setting.

"The results will be incredibly important in enabling clinicians to tailor treatment according to individual patient needs," thinks Professor Valgimigli. The findings will be presented in more detail later in the year at ESC Congress 2022 and are expected to be included in a forthcoming consensus document.

Today's session gives participants the chance to not only see these results ahead of the rest of the world but also to discuss with peers and opinion leaders just how the data should be interpreted and, crucially, implemented in clinical practice. Professor Valgimigli is looking forward to a great deal of audience involvement. "We want participants to ask as many questions as possible – and we will do our very best to give them the answers," he says.

DON'T MISS

Antithrombotics in practice after PCI: from evidence to individual patient management
Tuesday, Studio A, 13:30 – 14:30

Session Spotlight:
RENAL DENERVATION – READY FOR THE PRIME TIME?

Felix Mahfoud
Interventional cardiologist / Cardiologist
Saarland University Hospital
- Homburg, Germany

We spoke to Professor Felix Mahfoud about the value of renal denervation, including the latest data and what we can look forward to learning about renal denervation at EuroPCR 2022.

"It is fitting that on World Hypertension Day we begin a series of sessions on interventions to improve its management," says Professor Mahfoud. Hypertension is the most common cardiovascular risk factor worldwide, affecting over 1 billion people worldwide and contributing to more than 9 million premature deaths annually.[1] "We know that reducing blood pressure lowers the risk of cardiovascular events and death," he explains, "But our initial steps, such as lifestyle interventions and antihypertensive medication, are insufficient for adequate control in some patients and there is a need for additional approaches. We now have key evidence showing that renal denervation safely and effectively lowers blood pressure and I think it represents a valid adjunctive approach to enhance current strategies."

Professor Mahfoud highlights new long-term data published recently from a sham-controlled study of radiofrequency renal denervation in which he was an investigator – the SPYRAL HTN-ON MED trial.[2] At 36 months, ambulatory systolic blood pressure was reduced by 18.7 mmHg in the renal denervation group compared with a reduction of 8.6 mmHg in the control group (adjusted treatment difference −10.0 mmHg; p=0.0039), independent of concomitant antihypertensives and without safety concerns.

At a Hotline/Late-Breaking Trial session today at EuroPCR 2022, entitled, 'Hypertension management in 2022: control it, live longer,' new 3-year data from SPYRAL HTN-ON MED will be presented showing that renal denervation increases time in therapeutic range. A patient-level pooled analysis of ultrasound renal denervation will also be presented based on results from the RADIANCE-HTN SOLO and TRIO cohorts. In addition, Professor Mahfoud will show 3-year data on blood pressure and cardiovascular event reductions after renal denervation from the Global SYMPLICITY Registry. The session will conclude with a panel discussion on where renal denervation currently fits into the management of hypertension.

Professor Mahfoud's view is that the expanding evidence base, particularly on the long-term safety and efficacy of renal denervation, may lead to an increase in the number of centres becoming interested in performing renal denervation. At EuroPCR 2022 tomorrow, a tutorial session will guide attendees through how to set up a renal denervation programme, including the organisation of both the clinical and the cathlab side of the programme, and will emphasise the importance of multidisciplinary teamwork. Regarding the procedure itself, a tutorial on Thursday will discuss the necessary pre-procedural imaging and also provide step-by-step instructions on how to perform denervation using different methods, such as radiofrequency, ultrasound and alcohol mediation.

A not-to-be-missed case-based discussion this afternoon will cover patient selection for renal denervation, specifically exploring patients with resistant hypertension, moderate hypertension and patients with comorbidities. "For me, there is no one 'ideal patient' for renal denervation," concludes Professor Mahfoud, "But as the procedures continue to be refined and as hypertension prevalence increases, I think we will see more and more patients being managed this way."

1. Solomonica A, et al. J Thorac Dis. 2018;10:707–713.
2. Mahfoud F, et al. Lancet 2022;399:1401–1410.

DON'T MISS

Hypertension management in 2022: control it, live longer
Tuesday, Studio Havane, 10:30 – 12:00

Patient selection for renal denervation – who is the ideal candidate?
Tuesday, Room 252B, 13:30 – 15:00

How to set up a renal denervation programme
Wednesday, Room 252B, 08:30 – 10:00

Interventions for hypertension and heart failure
Thursday, Room 252A, 08:30 – 10:00

How to perform a safe and effective renal denervation
Thursday, Room 252B, 10:30 – 12:00

CELEBRATING

30 years

OF TRANSRADIAL ARTERY ACCESS!

Traditionally, transfemoral access (TFA) was used due to its large arterial size allowing for easier cannulation of the artery, manipulation of catheters, simultaneous placement of mechanical support devices and short door-to-balloon times. However, rates of major bleeding complications and early stent thrombosis with TFA were high, requiring intense anticoagulation and immobilisation in hospital for days.

Alternative access sites were explored, and successful percutaneous transradial angiography was first reported in 1989 by Lucien Campeau from the Montreal Heart Institute.[1] Coronary stenting was not standard practice at that time, but with Campeau's work for inspiration and with the availability of smaller catheters, Ferdinand Kiemeneij from the Amsterdam Department of Interventional Cardiology-OLVG used transradial access (TRA) for a PCI procedure (TRI) for the first time.[2]

We asked pioneers and experts to tell us what they think of TRA and how it has revolutionised practice.

A pioneer's view

Ferdinand Kiemeneij

Interventional cardiologist / Cardiologist

After Lucien Campeau's first successful TRA for percutaneous coronary angiography, I think it was only a matter of time before someone used TRA for PCI once we had smaller guides. At the OLVG hospital in Amsterdam, we were aiming to reduce major access-site bleeding complications and associated mortality – the major endpoints of all key studies comparing TRA with TFA – but for me, the procedure was just as much about getting patients immediately mobilised and improving their wellbeing before, during and after the intervention.

After the first TRI procedures were performed and all interventional cardiologists and cardiology staff at the OLVG were trained, the main challenge was acceptance in a world where TFA was the standard. TRI's first international exposure was at the 66th Scientific Sessions of the ACC in 1993, where I presented a poster that described our findings from the first 100 patients undergoing transradial balloon angioplasty and stenting. Although I could see that some people were attracted to the concept, I could see that many instantly dismissed the idea. But in many ways, TRI then sold itself. Following the poster, international colleagues visited our department, among which were Jean Fajadet and Yves Louvard. Seeing that arterial sheaths could be removed immediately after the procedure, that haemostasis could be obtained with a simple and effective compression bandage, and that patients were walking around immediately had a real impact. On the ward, there were bedridden patients in whom the sheath could not be removed from their groin because they were not properly adjusted to antithrombotics. And suddenly, there were patients who had had a radial procedure who walked from the cathlab into the ward with only a compression bandage on the wrist. We had come up with a solution that was patient-friendly and that improved safety and cost-effectiveness (by reducing hospital stays, surgery, transfusions and expensive closure devices), but we realised that for the operator, TRA was more complex than TFA.

Ferdinand Kiemeneij teaching TRI, Hanoi, 2002

In general, the more convenient a procedure for the patient, the more skills it requires from the operator. The reward of your sweat is the smile of the patient.

There were no specific tools for TRA at the time and no one to train us, so the early pioneers faced a steep learning curve in developing the technique. The learning curve was particularly steep for Jean Fajadet when he performed the first live case during the TCT congress in 1993, only 2 weeks after his visit to our hospital, but he did a great job showcasing the technique, and we continued to spread the word about TRI, developing our own skills and training others.

Over the years, we have gone from single-centre research in the absence of dedicated tools to the manufacture of high-quality products, international trials and global training programmes. We have now got to the stage where TRI has literally opened the door to outpatient or day-care strategies. The first outpatient stent procedures were performed in 1996 in Amsterdam. In 2006, we established a dedicated outpatient lounge, which was quite revolutionary and is still in use. Of course, not all patients are eligible, but for the majority, the outpatient strategy with TRI is patient-friendly, safe and cost-effective.

A radial handshake! Professors Ferdinand Kiemeneij and Shigeru Saito, Beijing, 2004

Despite its success in the minds of many, we still do not have 100% acceptance of TRI, and that remains puzzling to me. Every fellow who is exposed to TRA immediately picks it up, but there may be something off-putting about working with small arteries and challenging arm anatomy that deters some operators, and this is something we need to overcome.

In addition, as the number of TRA interventions increases, radial artery occlusion has become an issue. Our best answer to date is distal TRA (dTRA), which has a low forearm radial artery occlusion rate due to preserved radial artery flow through the superficial palmar branch, and the absence of proximal puncture and haemostasis trauma, due to short and light compression in the snuffbox. Although the distal site is only a couple of centimetres away from the conventional site, dTRA is again more patient-friendly and has advantages for the operator and nursing staff too. We are also learning that dTRA is safe in terms of the delicate structures of the hand – results will be presented from the RATATOUILLE study on hand function here at EuroPCR 2022.

Training dTRA with Professor Khaled Shokry, Cairo, 2018

I am pleased to say that TRA has now expanded into other fields and is becoming increasingly important in interventional radiology and neurointerventional radiology. I hope that the acceptance by these colleagues will take less than 30 years because of the work that many dedicated radialists have already done. I certainly see a sunny future ahead for TRA!

An operator's view

Mirvat Alasnag

Interventional cardiologist / Cardiologist
King Fahd Armed Forces Hospital - Jeddah, Saudi Arabia

As a cathlab director, I've long recognised the many benefits of TRA that go beyond the reduction in adverse events reported in studies such as the MATRIX[3] and RIVAL trials.[4] The table turnover is very quick with TRA. Not all femoral cases are suitable for the closure device, and manual compression adds at least 10–20 minutes to the tail end of a case. In addition, when we needed to work with a lean staff schedule during the COVID-19 pandemic, it was easier to have patients walk into and out of the cathlab with minimal staff support while others prepared the room for the next patient. Radial access has also improved our metrics, including access-site bleeding and early discharge.

In our region, TRA is gradually becoming the default approach. Many of the early-career operators have been well trained during their fellowships, and many mid- or late-career operators have already incorporated TRA into their practice. TRA is increasing as the interventional community is learning tips and techniques to navigate loops and tortuousities, manage spasm, adopt distal radial access and engage grafted vessels. In addition, there are more and more case reports of transradial aortic valvuloplasty, carotid interventions and peripheral vascular interventions. Industry pioneers have also responded to calls for slender sheaths, longer sheaths that permit peripheral interventions and railway sheaths.

As our experience grows and with a parallel development of the technology, I believe TRA will become the default approach globally very soon.

Advanced cathlabs have become adept at setting up not only TRA but also alternative sites, such as popliteal, pedal and axillary access. Thirty years ago, we gained a new access site, and explorations regarding access continue to this day.

Mirvat Alasnag using TRA, Jeddah, 2022

The experts' view

Sanjit Jolly: "TRA has transformed PCI procedures into same-day procedures with almost no bleeding risk. It is rare that such a simple innovation has such a big impact. It is an honour to be a part of that journey"

Jim Nolan: "In the last two decades, TRA has revolutionised the practice of interventional cardiology in the UK. The latest national audit data report that TRA is now used in over 92% of all PCI cases. This change in practice has resulted in huge benefits to our patients and healthcare systems. This is a shining example of the power of innovative pioneers who established the technique and brought these benefits to our patients"

Yves Louvard: "More than 95% of PCI, even complex cases, can be performed transradially"

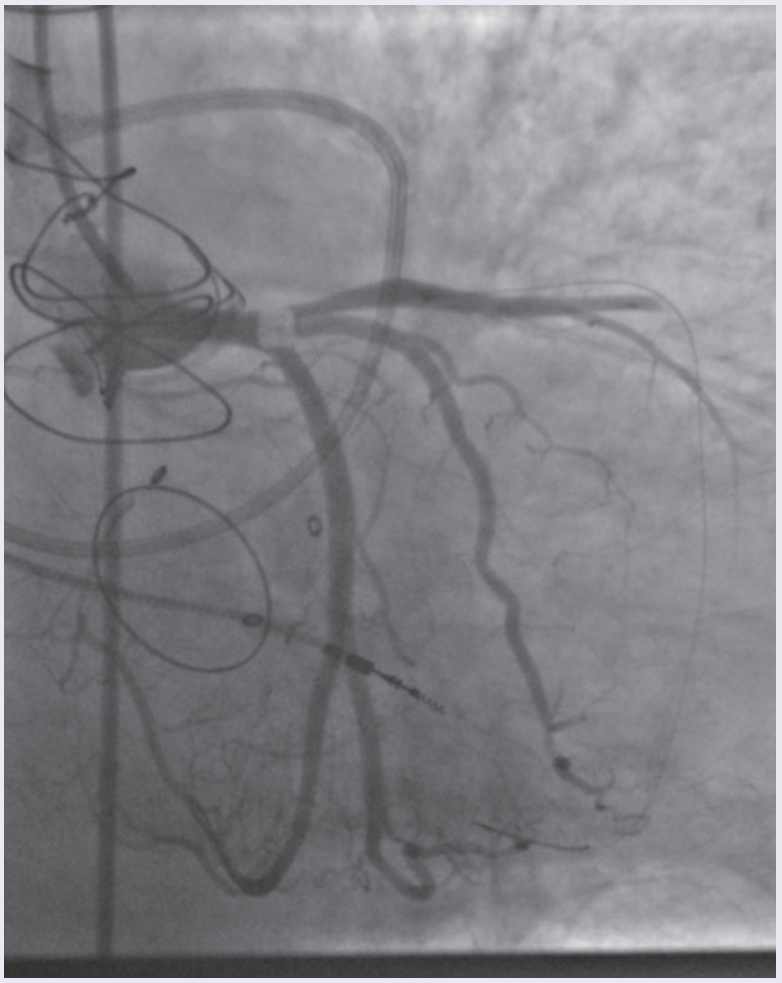
Elvin Kedhi: "How we get in? RADIAL... what else!?"

Shigeru Saito: "Distal radial first, conventional radial second!"

Marco Valgimigli: "Patients seek centres doing TRA and get heavily disappointed if TRA is not feasible"

Davide Capodanno: "The radial approach has really entered the common imagination – you can tell it from the disappointment in patients' faces when you tell them that you have to switch"

1. Campeau L. Cathet Cardiovasc Diagn. 1989;16:3–7.
2. Kiemeneij F, Laarman GJ. Cathet Cardiovasc Diagn. 1993;30:173–178.
3. Valgimigli M, et al. Lancet. 2015;385:2465–2476.
4. Jolly SS, et al. Lancet. 2011;377:1409–1420.



AN IMAGE IS WORTH A 1,000 WORDS

To highlight the importance of imaging in interventional cardiovascular medicine, we've selected some of the most interesting and puzzling images out of those submitted for EuroPCR 2022.

Today's case: A challenging haziness into the left main

History:

- A 58-year-old female patient with a prior history of AF with embolic stroke (2003); mitral valve replacement (MVR) with mechanical prosthesis in 2005; redo of MVR due to endocarditis with prosthetic dehiscence (2007).
- She was admitted in March 2021 with acute pulmonary oedema, severe aortic stenosis and mitral prosthetic dysfunction.
- She was treated with ascending aorta replacement and dual implant of aortic and mitral bioprostheses.

What do you see in this image?

A. Nodular calcifications protruding into the coronary lumen
B. Coronary thrombosis
C. Coronary embolisation

Authors: Pescetelli Irene,[1] Pellegrini Dario,[1] Guagliumi Giulio[1]
[1]ASST Ospedale Papa Giovanni XXIII, Province of Bergamo, Italy

Answer: C
On the 3rd post-operative day, she had refractory VF with persistent PEA. She was supported with V-A ECMO and moved to the cathlab for emergency coronary angiography. There were no significant stenoses in the coronary arteries but a filling defect at distal LM, involving LAD, LCx and ramus. Multiple strategies were attempted to solve the square haziness, including thrombectomy, cutting balloon, KB. 2DES were implanted at distal LM with restored TIMI 3 flow. The patient remained on ECMO support. She unfortunately died of sepsis 10 days later. The autopsy finally shed light on the true nature of the filling defect: it was a calcified surgical pledget.

TAVI AT 20: HOW A CRAZY IDEA LED TO A CLINICAL REVOLUTION

Hélène Eltchaninoff, *MD, PhD*

Martine Gilard, *MD, PhD*

Alain Cribier, *MD, PhD*

The history of interventional medicine is short, with an explosion of innovative treatments emerging at the end of the 20th century and dramatically expanding in the 21st.

For the newer generation of interventional specialists, with the armamentarium of these strategies at their fingertips, it is intellectually impossible to imagine what it was like treating cardiovascular disease less than 50 years ago. For those of us who were witness to that period and the developments that followed, it was another world.

The treatment of aortic stenosis (AS), the most prevalent valvular disease, stands out in this story – especially this year when we celebrate the 20th anniversary of the first successful implantation of an aortic stented valve in a human.

Importantly, it stands out not only for the scientific, technological and clinical achievements it represents but also as a testimony to the vision of the individuals – not just the specialists, but the first patients as well. Through their courage and insight they helped lay the foundations for what followed, reminding us that no matter how technical or device-oriented, the practice of medicine remains a human endeavour.

With an ageing population worldwide, the number of patients with AS is increasing each year. Their quality of life is severely curtailed and, as we know, if the disease is left untreated, death occurs in 80% of cases within three years after the onset of symptoms. Before the advent of effective interventional techniques, the only option we had as cardiologists to treat patients with severe symptomatic AS was open-heart surgery, but many of these patients were deemed too frail to undergo or were incapable of surviving the surgery if they did. With no other medical treatment available, these inoperable patients were, in the short term, simply condemned.

This was the context – the glaring and unmet clinical need – that we all faced in 1985.

But before looking at the development of transcatheter aortic valve implantation (TAVI), here is a brief review of the history of treating "structural heart disease". The term, first coined by Martin Leon at the TCT meeting in 1999, was quickly adopted. Covering all non-coronary heart diseases along with their dedicated interventional techniques, the field saw rapid growth from the transcatheter treatment of congenital valve disease: from pulmonic stenosis in 1979 and aortic valvular stenosis in 1983 to mitral valvuloplasty and aortic valvuloplasty in adults in 1984 and 1985, respectively, followed by pulmonic valve replacement in degenerated conduits in the 2000s. The successful percutaneous treatment of aortic valve stenosis in inoperable patients remained a challenge. In September 1985, faced with a 72-year-old female patient with calcified AS, recurrent syncope and imminent death, Professor Cribier and his Rouen University Hospital team adapted an existing technology from the field of congenital valve disease. Under local anaesthesia, a pulmonary balloon was employed to dilate the patient's aortic valve using a percutaneous transcatheter femoral approach. This first-in-human balloon aortic valvuloplasty led to an immediate clinical and haemodynamic improvement, followed by relief of symptoms and a return to normal life for the patient. The results were published soon afterwards in The Lancet, and the cardiology community worldwide quickly embraced balloon aortic valvuloplasty (BAV). This technique was enthusiastically adopted as the only life-saving procedure at the time for treating inoperable patients. However, after several years it became evident that balloon dilatation was not a long-lasting solution due to restenosis, with a return of symptoms in 80% of patients at one-year follow-up. The fact that restenosis was found produced deep disappointment in the medical community, especially after the excitement generated by the earlier positive results.

Thus, at the very beginning of the 21st century, though certain approaches had been tried and others were being researched, the specific challenges in finding an effective percutaneous treatment for AS remained elusive, with few treatment options for inoperable individuals. The reaction of the cardiology community to the failure of BAV was merciless and created a tidal wave of criticism concerning the work of the Rouen team. This criticism only served to reinforce their resolve to find a viable solution to deal with the restenosis that undermined BAV.

The concept of implanting a dedicated stented valve for calcified AS was born out of this challenge. Having observed that the circular shape of the balloon could expand the calcified aortic valve, the Rouen team believed that it was possible to open the orifice despite the calcification. The idea that developed was to maintain the initial positive results of the expansion by implanting a stent with a valve inside using the diseased native calcified valve of these inoperable patients itself as an anchor rather than removing it. This would be done under conscious sedation on a beating heart, employing the catheter-based techniques already in use.

This concept created other issues besides the nature of the diseased native valve itself; critical questions arose concerning the immediate proximity of essential anatomical structures. Intensive, in-depth research with autopsies and in vitro experimentation were undertaken to determine and validate the correct dimensions of the stented valve to ensure there would not be damage to the surrounding structures, such as to the coronary arteries, and to the mitral valve: a key step in guaranteeing the feasibility and safety of the concept.

During this same period in Denmark, Dr Henning Andersen developed a dedicated stented valve for treating aortic valve regurgitation and other vascular diseases, but not for aortic calcified valve stenosis. However, he did not follow up on his initial experimentation.

The adventure of perfecting the stented valve was only beginning. For over five years, the Rouen team failed to convince biomedical manufacturers to develop a prototype, the project being considered as totally unrealistic. At the same time, a new technique was developed in Rouen – mitral commissurotomy using a metallic dilator – for the treatment of mitral valve stenosis, which was subsequently widely used in developing countries.

It was in 1994 that development of this innovative concept started to accelerate when Professor Cribier met engineers from Johnson & Johnson, Stan Rabinovich and Stan Rowe, who expressed interest in the project. In 1999, with Martin Leon, they created the start-up "Percutaneous Valve Technology". With the help of investors, a prototype was designed by the Aran R&D company in Israel. Using the sheep model, extensive studies and evaluations of this prototype proved the concept's feasibility.

The first-in-man implantation of this revolutionary device was performed as a last resort option in a 57-year-old patient in Rouen, France on 16th April 2002, and was subsequently reported in *Circulation*. The success of the new technique was dramatic, and the start-up was acquired in 2004 by Edwards Lifesciences, leading to an evolution in the technology that continues to this day.

This has from the start been a development based on scientific rigor and clinical excellence which fulfil the most stringent requirements of medicine. Since that first successful TAVI 20 years ago, TAVI has been at the centre of an impressive series of scientific evaluations, randomised trials and international registries. This work has resulted in many thousands of peer-reviewed publications where trials have demonstrated time and time again the non-inferiority, and even superiority, of the transcatheter approach to cardiac surgical replacement. Registries, such as FRANCE, FRANCE-2 and FRANCE-TAVI, have played an essential role in fully grasping the extent to which TAVI has advanced and become part of our practice, while offering the critical data necessary for a probing meta-analysis that provides a foundation for the future evolution of the technique. It is through this careful process of evidence-based medicine that a treatment, originally limited to "compassionate" use in high surgical risk patients, has been enlarged by the American and European guidelines to include patients at intermediate risk and finally, in 2021, to include low surgical risk patients as well. In numerous countries, the number of TAVI procedures now exceeds the number of surgical valve replacements.

The number of TAVIs has increased by 10% per year for several reasons:

- A continuous improvement in technology which has increased the safety of the procedure, in part by reducing the complication rate.
- A growing experience on the part of the individual operators as well as the Heart Teams with an increase in the number of specialised centres practicing TAVI. When combined, experience and accessibility have made TAVI an easy procedural choice where in the past cardiac surgery would have been the only option.
- The continued expansion of indications to low-risk patients will occur as durability of the implanted valves is demonstrated. This has encouraged research on different types of valves less prone to deterioration.
- The continued and future expansion of TAVI to other indications such as valve-in-valve procedures (e.g., treating future TAVI dysfunction) or the treatment of moderate AS in patients with heart failure, etc.
- Also, importantly, the increase in TAVI procedures and the vital competition between devices has led to an overall decrease in the cost of TAVI which is of particular interest for lower-income and developing countries.
- And of course, the outstanding combination of excellent clinical results and the simplicity of the procedure for the patients themselves: no sternotomy, the use of local anaesthesia, a short hospital stay and, most importantly, a rapid return to normal life.

This steady expansion is, like the development of PCI (angioplasty and stenting), an excellent example of successful translational research, moving findings from concept to bench, bench to bedside, feasibility trials to larger clinical registries, and evidence-based trials to everyday practice. The constructive dialogue that continues between multidisciplinary physicians and engineers has been central to the evolution of TAVI. However, it is of interest that TAVI, unlike PCI, began with the most untreatable of patients and only now is being used in lower-risk groups.

In the advances in the treatment for valve disease TAVI played – and continues to play – a seminal role. It stands as a lightning rod and catalyst – an impetus for research and a creative idea spurring on device and clinical innovation.

Looking back over the last 20 years since that first TAVI, we are astonished by the impact this procedure has had. TAVI crystallised the study of structural heart disease, inspiring a younger generation of interventionalists and scientists. It remains an innovative and disruptive technology influencing many of the ways that medicine is practised today. In cardiology alone, it paved the way for percutaneous transcatheter treatment of the mitral and tricuspid valves, has led to far-reaching developments in cardiac imaging and has been instrumental in bringing together specialists in the Heart Team concept.

To all those who believe that we as cardiologists can make a difference in our commitment to ideas, TAVI stands as an example of what such an idea can produce. TAVI has made its mark on all of us, in more than 1,500,000 patients who have been successfully treated today, and in the seeds it has planted in the way we practice medicine and advance our research and clinical practice.

After twenty years, the future stories of TAVI are still being written.

Read the full article in May's issue of *EuroIntervention*

Pick up your free copy from the racks or on the PCR Publishing booth (Level 2)

A dual celebration: **At EuroPCR and worldwide...**

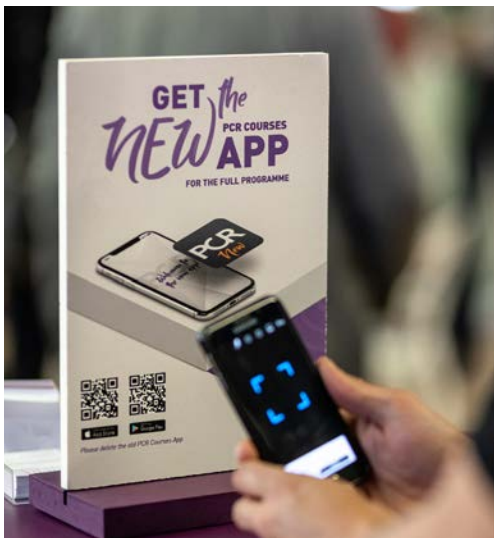
The interventional cardiovascular community is celebrating the return of a face-to face EuroPCR, and new combined onsite/online learning with global outreach!

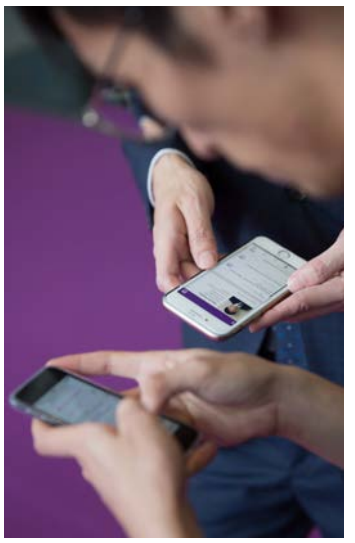
The pandemic could quite easily have brought PCR Courses to a temporary pause. However, PCR didn't let it. It adapted to circumstances and embraced change; it focused on maintaining links between the worldwide community; and its educational initiatives evolved from fully onsite to fully online. Read on to discover how the past two years have led to the blended learning format of EuroPCR 2022.

2020: Life moves online

At the beginning of 2020, the pandemic puts increasing pressure on healthcare services. In addition to COVID-19 itself, the community realises that the lack of timely cardiac care is going to be a serious issue for patients' health too, on both a short- and a long-term basis. PCR's first action is therefore to share the resource hub 'Facing COVID with PCR'. At a time of deep uncertainty, it provides reliable tips for team organisation, staff protection, and the best practice for patient safety during the outbreak.

To keep the worldwide community up to date on all the latest scientific updates and best practice, a huge number of additional PCR Webinars are scheduled, with real-time live chat. PCR also rises to the challenge of organising a wide-scale online Course, even though the pandemic is gaining territory.





Two digital Courses maintain the link between peers

Through hard work, the PCR e-Course is built in record time and takes place in June 2020. Over 15,000 participants from 140+ countries benefit from the online Course's 5 channels and 100+ sessions on air. A few months later, the 3-day PCR Valves e-Course shares the latest in interventions for valvular heart disease. The programme is enhanced with Heart Valve Teams calling in live from City Pods in 12 different countries, and the event benefits from the participation of 6,300+ worldwide e-learners.

2021: The rethinking and reshaping continues!

Building on previous initiatives and participant feedback, another massive IT enterprise is undertaken to again rethink, reshape and rebuild EuroPCR. For over 30 years, PCR has been renowned for its regular implementation of new educational tools, but as PCR Vice-Chairman Jean Fajadet says at the time: "This year? It's not evolution, it's revolution!"

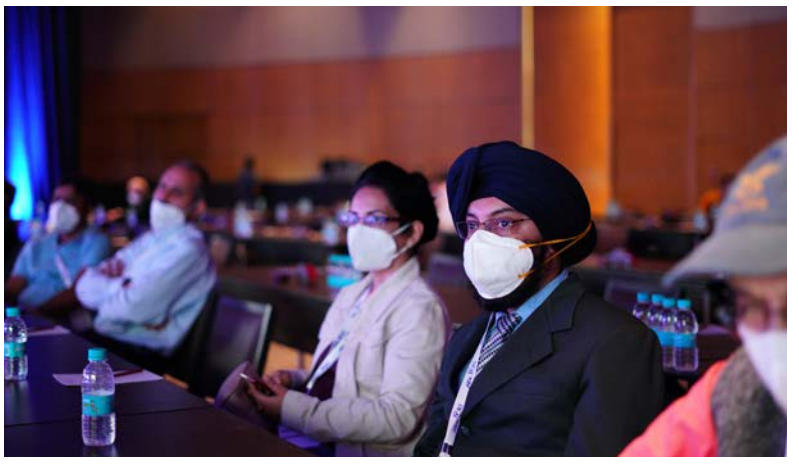
A new user-friendly platform is tailored for increased interactivity between participants all around the globe. Learning is enriched with 10 worldwide PCR Hubs which take turns to link up live with the Course's 5 TV studios, sharing the voice of local communities. Where possible, participants gather to watch the Course in small groups in local Pods. The power of virtual education means questions from across the world can be immediately addressed by faculty, and participants can benefit from innovative simulation-based sessions.

PCR's educational formats continue to evolve throughout the year

The success of EuroPCR 2021 paves the way for subsequent PCR Courses in the latter half of the year. First, the digital editions of PCR Tokyo Valves and AICT-AsiaPCR, the official Course of APSIC. Then in November, PCR London Valves offers attendees the opportunity to discover the blended learning experience of joining online or onsite. As for GulfPCR-GIM 2021, the leading-edge interventional Course in the Middle East is the first PCR Course since 2019 to return to a fully onsite event. The 600+ participants are of course delighted to gather in Dubai to learn, train and exchange in person.

PCR London Valves 2021: A milestone edition

The Heart Team Course is the first to offer the opportunity to join either face-to-face or on the platform. A total of 1,250+ onsite participants join as a live audience in 3 PCR TV studios, which broadcast their content to an additional 2,400+ online participants around the globe. It also sets up an onsite Training Village and innovative online Training Workshops.



2022: Blended learning is fostering unprecedented worldwide outreach!

So where have the past two years led continuing education? This blended edition of EuroPCR demonstrates two facts. First of all, that nothing can equal onsite Courses and the joy and effectiveness of learning side by side, face to face. Second: that rising to the challenge of the pandemic has hastened PCR's ongoing development of new tools and formats. The result is a polished educational experience both onsite and online, and extremely effective interaction between both types of participants. Furthermore, peers who are unable to travel can now take advantage of a highly educational Course that would previously have been inaccessible. For the benefit of patients all around the globe.

EAPCI
European Association of Percutaneous Cardiovascular Interventions

2020 Core Curriculum for Percutaneous Cardiovascular Interventions

A series of six webinars dedicated to the 2020 Core Curriculum for Percutaneous Cardiovascular Interventions is being offered by the European Association of Percutaneous Cardiovascular Interventions (EAPCI).

Take advantage of these learning opportunities to prepare for EAPCI Interventional Cardiology Certification.

- Invasive diagnostic assessment of coronary artery disease – 13 April (available on demand)
- Structural heart interventions in aortic valvular disease – 4 May (available on demand)
- Peripheral percutaneous interventions – 8 June
- Devices and tools in percutaneous coronary interventions – 14 September
- Percutaneous interventions for stroke prevention and congenital heart disease – 5 October
- Percutaneous interventions in patients with coronary artery disease and specific clinical conditions – 9 November

What is the core curriculum?
The 2020 Core Curriculum for Percutaneous Cardiovascular Interventions provides an updated European consensus that defines the level of experience and knowledge required in the field of percutaneous cardiovascular intervention (PCI). It promotes homogenous education and training programmes among countries.

The first part of the curriculum covers general aspects of training and is followed by a comprehensive description of the specific components in 54 chapters. Each of the chapters includes statements of the objectives and is subdivided into the required knowledge, skills, behaviours and attitudes.

The document recommends that acquisition of competence in interventional cardiology requires at least two years of postgraduate training, in addition to four years devoted to cardiology.

Why get certified?
The core curriculum is the cornerstone of EAPCI certification, which recognises the competencies of interventional cardiologists at the European level and aims to enable the free movement of certified specialists in Europe. The certification programme is divided into two parts. The first part is theoretical and based on a thorough review of the ESC Guidelines and of the PCR-EAPCI Textbook in Percutaneous Interventional Cardiovascular Medicine. The second part is a practical skills assessment.

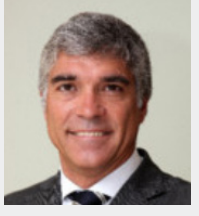
- Certification gives credibility and professional legitimacy to an individual by demonstrating their competency
- It identifies qualified practitioners in interventional cardiology and should enhance their professional image

How this webinar series can help
The webinar series on the EAPCI Core Curriculum prepares participants for the certification exam by covering relevant exam topics.

If you can't attend the live webinars, you can watch them on demand on ESC 365, the cardiology knowledge hub.

See all EAPCI webinars available on ESC 365.

Next EAPCI Certification exam for physicians: **16 December 2022**
Registration opens mid-September



Rui Teles
Chair of the 2020-2022 EAPCI Training & Certification Committee
Hospital Santa Cruz - Carnaxide, Portugal

"EAPCI certification aims to harmonise training, set the standards, promote excellence and protect patients around Europe. It follows the 2020 EAPCI Core Curriculum of Interventional Cardiology. We are extremely happy that the number of candidates is increasing steadily; it's a testimony on the part of our young community to their acceptance of and enthusiasm for this programme.

The benefits of certification include professional recognition and facilitated mobility. Take advantage of these webinars to get prepared; then watch your career blossom."

EuroIntervention is rolling out RevoluSOUND

Artificial intelligence and machine learning are behind a new functionality that enables readers to *listen* to the journal's content.

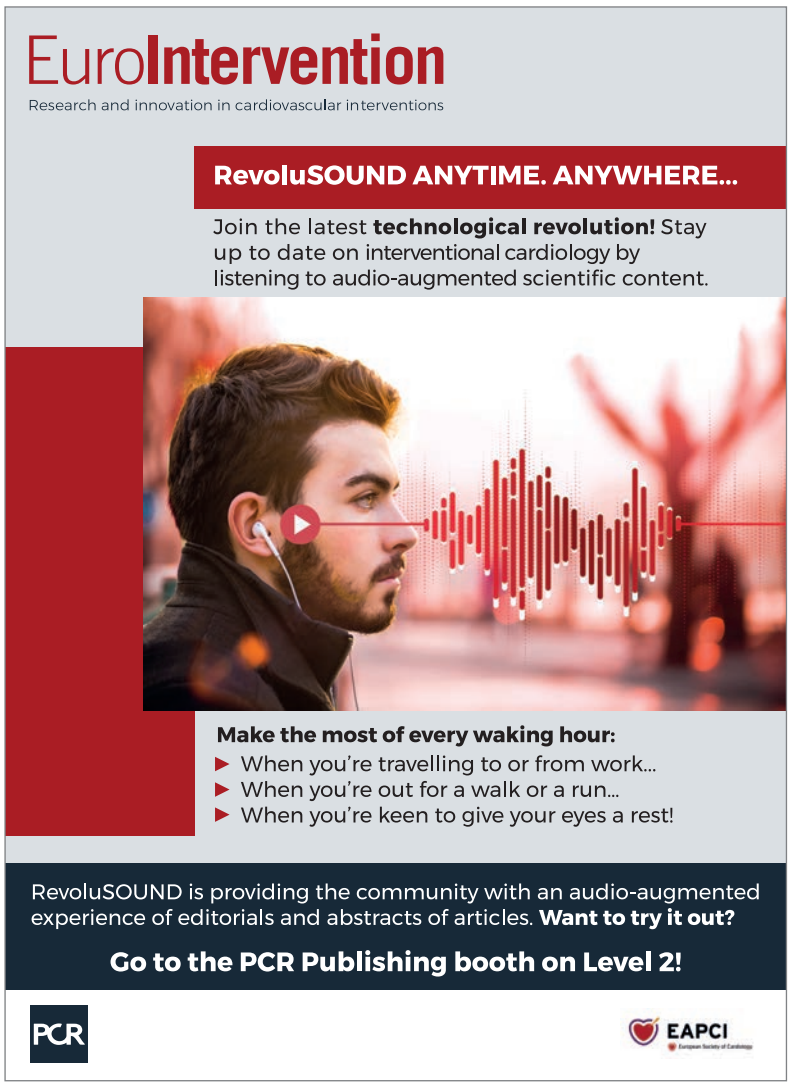
Earlier this year *EuroIntervention* launched RevoluSOUND, an innovative functionality that brings together artificial intelligence, machine learning and the content of the journal itself, to enable an audio-augmented experience of editorials and abstracts of articles.

By providing its subscribers with the technology to listen to the journal, *EuroIntervention* aims to respond to the busy day-to-day life and needs of healthcare practitioners who are multitasking at the hospital or office, or remotely from home.

As RevoluSOUND is being rolled out, the journal is requesting feedback. "We want this new function to be as transparent as possible, to ensure this cutting-edge experience is useful, by making it as accurate as it is practical... It is through an open exchange that we will create the best possible experience, an essential and valuable solution that responds to needs."

EuroIntervention is at the forefront of a technological revolution that will surely set the standard for sharing medical information today and in the future. It is also committed to transforming a static experience into a dynamic one that makes sense to their 'readers'.

EuroPCR participants can discover examples of audio-augmented content on the PCR Publishing booth located on Level 2, or on ***www.eurointervention.org***



PCRonline is celebrating its 20th anniversary

Salvatore Brugaletta
Editor-in-Chief of PCRonline

Salvatore Brugaletta is the Editor-in-Chief of PCRonline, the educational online platform that is a trusted daily source of information for practitioners all around the globe. He was asked to share a few words upon the occasion of its 20-year celebration.

"During the most difficult part of the COVID-19 pandemic and in the absence of medical congresses, PCRonline represented a place to maintain a connection with many colleagues worldwide, a space to keep learning through all of its educational resources, such as webinars, cases and e-Courses.

Now, after 2 years, we are delighted to once more be able to meet in person at EuroPCR 2022, to share experience, daily practice and science with our peers. We feel fortunate also to have the opportunity of celebrating together the 20th anniversary of PCRonline.

When we consider those years, it is difficult to find another example of a medical website with such a long history. It is therefore important to celebrate the great work carried out behind the scenes over the last two decades: by the team behind the scenes, and by the various PCRonline boards led by incredible Editors-in-Chief such as Bernard Chevalier, Alec Vahanian and Davide Capodanno.

Last but not least, if PCRonline is today a leading online platform in its field, a special acknowledgment must go to all of our peers who are the driving force of its content, built by and for the interventional cardiology community it serves."

10 years old and always up to date. The PCR-EAPCI Textbook: ***By and For*** **the Interventional Community – and the patients they serve**

THE PCR-EAPCI TEXTBOOK

When the PCR Family decided that the time had come to write a textbook for the speciality of interventional medicine it was considered like Don Quixote attacking windmills. How could we imagine in this age of online resources and always present social media that a formal textbook would make any sense?

And yet, 10 years later the orchestrated labour of hundreds of interventional cardiologists has born its fruit and the PCR-EAPCI textbook – written *By and For* the community – is one of the cornerstones of our professional lives, and an essential part of our continuing medical education in programmes not only in Europe, but throughout the world... wherever PCR and interventional medicine are performed. All for the benefit of our patients!

But who needs this kind of publication today?

Professors Jean Marco and Jean Fajadet, in their preface to the first edition, captured the inspiration and goals that were at the origin this ambitious project. The PCR-EAPCI Percutaneous Interventional Cardiovascular Medicine Textbook represented a successful achievement that combined "innovation, creativity, search for excellence, passion, open-mindedness and inclusive reasoning". Why?, they ask; clearly "for the benefit of each individual patient". Also, the PCR-EAPCI Textbook, concretizes the increasingly "close ties between PCR and EAPCI", without a doubt acting as a living embodiment of the idea that "together we achieve more." And we can.

"The PCR-EAPCI Textbook is like a fine orchestral performance representing thousands of hours of individual expertise"

Javier Escaned

Even, ten years ago, Spencer King III asked "in this era of social connectivity.... What is the role for textbooks?"

As we are an evidence-based profession, a quick look at the "data" in 2022 carries the answer and it is loud and clear – we all need and depend on textbooks!

With over 200,000 users and the same number of media downloads, over half a million video sessions and a readership that spans every continent, the PCR-EAPCI Textbook is more in demand than we could have possibly imagined when it was first conceived.

Why? Looking back, the words of Spencer King III remain immensely prescient:

"Whereas the text is largely by Europeans, for Europeans, the value goes well beyond the continent. Interventional cardiology is global, and the evidence and insights provided by so many authorities will be of great value to readers around the world."

The evolution that never ends: "Programmed non-obsolescence"

Interventional medicine is constantly evolving, guidelines are always being rewritten and reconsidered and the story of the textbook's creation didn't end 10 years ago but is ongoing.

With its close to 400 individual authors and 116 chapters, today's textbook has grown organically from the first edition. Seventeen of these chapters are completely new and 84 have been updated to reflect the state-of-the-art clinical knowledge and techniques.

"The continued evolution of interventional cardiology with the development of new techniques and new approaches will bring many new and revised chapters. The textbook will continue to be the cornerstone in educating all interventional cardiologists who wish to update their knowledge for the better management of their patients."

Guillaume Bonnet

The editors of the PCR-EAPCI Textbook are committed to keeping up with these changes with 2 new and 10 updated chapters in the works for EuroPCR and 35 chapters in the planning stage to be updated soon.

The textbook is a **dynamic process** with not only the text being updated, but the illustrations keeping pace with changes in our knowledge with close to 3000 figures, over 650 moving images and 570 tables available in the 2022 edition alone!

The PCR-EAPCI Textbook is **didactic** with the clinical information you need in a highly accessible fashion. In an earlier review of the textbook that appeared in EuroHeart in 2016, but just as true – and even more so today – Peter PT de Jaegere said "This vast spectrum of information in addition to its format and layout make the textbook unique." – to the point where there is little wonder why it is used as an official part of the EAPCI core curriculum and as an essential resource in India or France or as part of the Masters programme at the NUI Galway in Ireland.

Keeping up with the community: What interventionalists think about the Textbook today

Staying relevant and making a difference in the lives of busy clinicians and their patients is a fundamental element in the make-up of the Textbook – and an ongoing challenge! The only way to ensure that we are doing the right thing is to be in constant touch with our readers – and that's just what we do. Today, in 2022, we asked several of your fellow interventional cardiologists what they think of the PCR-EAPCI Textbook and what we heard is revealing – no matter how long you've practiced, whether you are a resident or a seasoned interventionalist the PCR-EAPCI textbook has something to offer you!

"The regular updating of this textbook means that it's neither old nor obsolete, in fact we could call it 'programmed non-obsolescence'!"

Guillaume Bonnet

Guillaume Bonnet, a young cardiologist working in the service médico-chirurgical de valvulopathies et cardiomyopathies in Bordeaux France, told us how the PCR-EAPCI Textbook played an important role helping him to "prepare the EAPCI exam". It is, he said, "the standard in our specialty that allowed me to build a knowledge base in interventional cardiology". And even today, Dr Bonnet sees how it has had an impact on his daily practice, citing the bifurcation chapter by Thierry Lefèvre, "with its many Tips and Tricks for daily practice" as an example.

What would he like to see in the future? "We could imagine more visual summaries, visual content such as Instagram-style vignettes and iconographies summarising the key points making the Textbook even more accessible than it is now, with greater feedback from our community."

"The Textbook is an incredible project, harmoniously bringing together thousands of years of individual experience in interventional cardiology for the purpose of sharing that expertise. It reminds me of a symphony orchestra with the work of each individual musician fusing together to create the vibrant whole. Think about this the next time you browse a chapter in the Textbook or look through the list of authors – it's all there for you!"

Javier Escaned

We then turned to one of our authors and asked what the nature of his own involvement with the PCR-EAPCI Textbook was today – as an educator, but also as an experienced specialist. When we asked Javier Escaned, Head of the Interventional Cardiology Section at the Hospital Clínico San Carlos, Universidad Complutense de Madrid, Spain, if the PCR-EAPCI textbook was still relevant, he answered without hesitation:

"Absolutely, the proof is every time we announce a new chapter, or free access to textbook, the enthusiasm is palpable. Many of my fellows consult it whenever they need an updated, comprehensive review of a topic, and the online format facilitates not only access and portability, but also copying and pasting material for their presentations, etc."

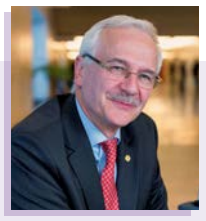
"I use the PCR-EAPCI Textbook myself to revisit areas that do not belong to my everyday realm of topics and expertise. Being able to refer to specific topics like this has helped me quite a lot in my daily practice - from an educative perspective, but also in understanding to what degree a particular technique can be applied to a specific patient."

And the future? "In addition to a sustained update of its contents, I believe the book should evolve towards being networked or connected with other educational material present in the PCR ecosystem. I refer to live cases, tips and tricks, reviews of trials, etc. Incorporating AI algorithms might generate awareness of related topics, existing material, etc. Finally, it might also allow some degree of interaction with the authors of the chapter."

Creative, interactive, constantly sharing experience: The PCR-EAPCI textbook is alive and well and living in your nearest connected device!

The future is being written today, and the PCR-EACPI Textbook intends to be part of it, created to serve as a living foundation for that future of our interventional community. If you've already consulted the PCR-EACPI Textbook you know what to expect, but if you haven't – yet – join us and become part of one of the most vibrant communities in interventional medicine – today and tomorrow, *By and For* you and your patients!

10 YEARS YOUNG AND STRONGER THAN EVER: The PCR-EAPCI Textbook



William Wijns
PCR Chairman and PCR-EAPCI Textbook Editor
The Lambe Institute for Translational Medicine and CÚRAM, National University of Ireland Galway - Galway, Ireland

The PCR-EAPCI Percutaneous Interventional Cardiovascular Medicine Textbook began as one book and has since evolved via four hardcopy editions into a large digital compendium with five volumes of information on diagnosis, interventions and perspectives.

One of the founding editors, Professor William Wijns, is delighted with the progress made: "The editors and contributors actually started this project well over 12 years ago, as it took 2–3 years to get the first textbook published. Although it has been a massive effort from its hundreds of expert contributors, I'm truly delighted with its evolution, its impact and how alive it is! With over 200,000 users, we can see the constant stream of downloads and know that the PCR-EAPCI Textbook is more in demand than we ever believed." He is particularly proud of the global reach, noting, "The main user countries include India, USA, Mexico and Brazil. Although we started out as a European textbook, we always aimed to address the educational needs of the worldwide interventional community and it appears that we are doing so." Seventeen chapters are completely new from the first edition and 84 chapters have been updated, some multiple times. "Over 80% of the entire textbook is basically new or updated, which is only possible because of the digital format and the dedication of the PCR-EAPCI Textbook editors and contributors," comments Professor Wijns.

To mark its special occasion, the PCR-EAPCI Textbook is freely available until 25 May and there are two new chapters. "One chapter covers an increasingly important topic, patient-focused care," notes Professor Wijns. "It will discuss how we can engage and involve patients, even in research, and also ensure that endpoints are relevant for patients, not just doctors. The second chapter describes functional angiography, which is about unravelling all of the hidden information that is contained within the coronary angiogram. Until recently, we were not able to use these data, but with the power of artificial intelligence, we are beginning to understand the wealth of information that can be computed from the simple angiogram. This chapter may be particularly useful for colleagues who may not have access to complex intracoronary imaging devices – everyone has an angiogram!"

Future clinical practice is already being incorporated into the PCR-EAPCI Textbook, but what else lies ahead? Professor Wijns would like to see even easier access to the textbook plus increasing usage. "We hope colleagues will use the illustrations, movies, PowerPoints etc. with their peers – not just for their own use, but also as a standard for training and education purposes. The textbook currently serves as the main resource to train people and evaluate their competencies in Europe – it's really part of the curriculum – and if this could happen globally, it would really help to raise the bar in all environments."

And will the PCR-EAPCI Textbook still be going strong in another 10 years? With the expertise of the contributors and the engagement of the readers, it most probably will!

PCR COMPANIONS ARE CELEBRATING THEIR RETURN TO PARIS

A key advantage of this collaborative initiative for healthcare practitioners is access to a dedicated networking lounge.

"The best part about waiting is when it ends!"

PCR Companions is a collective and collaborative initiative that was launched in 2019, the year EuroPCR celebrated its 30th anniversary. Open to all physicians, nurses and allied professionals, it is a community that is building links that go beyond education, breaking down barriers between the different specialties and world regions.

What is the philosophy behind PCR Companions?

The credo is that every practitioner has a role to play in the worldwide standardisation of practice. To achieve this, peer-to-peer exchange throughout the entire career remains essential. Not only between mentors and fellows, but also on a more global scale, as 'Companions' of the community – all supporting one another in many different ways, on the same road towards increasingly better patient care.

What are the advantages of becoming a PCR Companion?

The collaborative initiative aims to help PCR Companions connect with each other and access educational content that is relevant to their daily practice. Other benefits include a period of free access to best-selling publications, and onsite benefits when joining certain PCR Courses.

And for PCR Companions joining EuroPCR 2022 in Paris?

- A free one-year subscription to the multimedia edition of *EuroIntervention* (digital, print or both)
- Access to the PCR Companions Lounge on Level 2, where they can network and relax in the company of peers
- Other benefits such as dedicated networking events and a sports bag to take home.

Join the Croissant Party! 🥐☕

Inspired by comments about coffee and croissants on social media, both of these ingredients are lined up on Wednesday at 10:00 to 10:30, in the PCR Companions Lounge. Live music too! See you there!

Not yet a PCR Companion?

Sign up for free on PCRcompanions.com and gain immediate access to the PCR Companions Lounge and your one-year subscription to EuroIntervention!

2022: A YEAR OF CELEBRATIONS FOR PCR PUBLISHING

PCR Publishing offers a continuously updated library of publications and resources for the daily practice of the worldwide interventional cardiovascular community. This year, they are celebrating a number of anniversaries and events:

200+ issues of *EuroIntervention* and the launch of RevoluSOUND

EuroIntervention is the official journal of EuroPCR and the EAPCI, and has been keeping the community up to date on all the latest clinical research, expert reviews, papers and guidelines since 2002. RevoluSOUND is a new functionality that provides an audio-augmented experience of the journal's articles.

A free copy of *EuroIntervention* and a demonstration of RevoluSOUND are available on the PCR Publishing booth (Level 2).

The PCR-EAPCI Textbook's 10th anniversary

To mark the occasion, The PCR-EAPCI Textbook is on free access until 25 May. A comprehensive enhancement of the visionary reference book includes:

- Two new chapters on patient-focused interventional care and functional coronary angiography to assess epicardial vessels and the microcirculation
- Important updates on key topics such as FFR, tricuspid, calcified coronary lesions, thrombectomy, cardiac biomarkers and biostatistics

A full redesign of the PCR Randomised Trials Book

This essential book contains all the latest clinical trials on interventional cardiovascular medicine.

Onsite participants can pick up a copy on the racks or on the PCR Publishing booth (Level 2).

PCRonline is celebrating its 20th anniversary

This online educational platform is a trusted daily source of information for healthcare practitioners all around the globe.

***AsiaIntervention* is now indexed in PubMed**

Released twice a year, *AsiaIntervention* is the official journal of the Asian-Pacific Society of Interventional Cardiology and the Interventional Cardiology Foundation of India.

***Visit the PCR Publishing booth on Level 2**, next to the PCR Companions Lounge, to consult the publications and activate a free one-year subscription to EuroIntervention for PCR Companions. Textbooks are also available to browse and buy on the Wisepress Stand M52.*

***Pick up a free copy** of EuroIntervention and the PCR Trials Book on the racks, or download them on the Course platform*

ARE YOU ON SOCIAL MEDIA?

Join the conversation

Follow us and contribute on Twitter, Instagram, Facebook and LinkedIn too, and keep on top of all the latest in the PCR community!

#EuroPCR

/PCRonline /pcr_online /PCRonline /pcronline

Thank you for making this happen! *Throughout the last couple of months we have seen your excitement to get back together on site in Paris at EuroPCR. The buzz created on social media has been overwhelming and we would like to say thank you for all your support and the success of our Course.*

You can **connect everywhere you need to** during the Course!

WiFi: **#EuroPCR**

Password: **europcr2022**

INTERVENTION
IN ALL DIMENSIONS

From access to closure. For radial and femoral.

Your preferred way: we offer a comprehensive portfolio spanning all dimensions of minimally invasive solutions from interventional cardiology to interventional oncology to peripheral procedures.

PUSHING BOUNDARIES

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