EAPCI

Equitable Access to Percutaneous Coronary Interventions for Patients and Health Care Professionals

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ESC European Society of Cardiology

Abstract

The aim of EAPCI Summits are to bring together members of the EAPCI board and representatives of the National Societies and Interventional Working Groups associated with the EAPCI to discuss and develop strategies to advance education and practice in interventional cardiology. The 2023 summit was held in Sophia Antipolis, France on the 22nd and 23rd of June 2023 with the theme of equitable access to Percutaneous Cardiovascular Interventions for patients and professionals. In this article we highlight the key points and proposed actions developed during the summit.

Introduction

The theme of the 2022-2024 EAPCI Presidency is EAPCI 4.0 – Equitable Access to Percutaneous Cardiovascular Interventions 4 Patients and Professionals. There are three strategic drivers for both professionals; to foster equitable access to education and training, to reduce the gender gap in interventional cardiology practice, to promote more contemporary and uniform quality standards in catheterisation laboratories and patients; to improve access to percutaneous cardiovascular interventions, to facilitate a more rapid adoption of innovative percutaneous therapies, to raise awareness of percutaneous cardiovascular interventions.

On this background the EAPCI board and National Society and Working Group representatives met for a two day symposium to discuss potential barriers as well as strategies to improve equity of access to percutaneous cardiovascular intervention. Seven workshops designed in collaboration with EAPCI committees, along with the ESC Cardio-Oncology Council and the European Heart Agency allowed presentation of ongoing work within EAPCI as well as facilitated discussions amongst the delegates.

Workshop 1. Equitable Access to percutaneous Cardiovascular intervention for cancer patients and healthcare professionals – In collaboration with the ESC Cardio-Oncology Council and EAPCI Advocacy Pillar

The first workshop focused on cardiovascular disease in patients with cancer, both those with pre-existing cardiovascular disease as well as cancer therapy related cardiovascular toxicity (CTR-CVT). There is a significant intersection between cardiovascular risk factors and cancer (1), one in three patients with cancer has pre-existing cardiovascular disease (2). Cardiovascular disease in this population is important as a prior CVD diagnosis is typically an exclusion criteria for cancer trials (3) either directly or indirectly due to life expectancy or increased risk of bleeding. Patients with prior CVD are at high risk of cardiovascular toxicity and suboptimal treatment of their cardiovascular disease. Furthermore access to optimal cancer therapies is limited in this population (4). In the short term developing CTR-CVT limits access to optimal CV treatment and lead to interruptions to cancer treatment, for cancer survivors CTR-CVT is a competing cause of death (4).

Presently in Europe the majority of cancer patient with cardiovascular disease are seen within general cardiology clinics, cardio-oncology networks aim to minimise inequities in access to cardio-oncology care (5). The ESC Guidelines on cardio-oncology (4) as well as the ESC quality indicators for prevention and management of cancer therapy-related cardiovascular toxicity in cancer treatment (6) provide strategies for care of this population however emphasis needs to be placed on guideline implementation. Finally there is a need to a stronger stream of basic research, clinical trials and educational initiatives in the field.

Specifically focussing on Acute Coronary Syndromes (ACS) patients with current cancer have higher rates of mortality, MACCE, bleeding and stroke compared to those with no cancer or a historical cancer diagnosis where the rates are similar to those without cancer (7). Patients with cancer are less likely to receive an invasive strategy compared to those without. Within the four most common cancers (lung, breast, prostate, colon) colon cancer was associated with the highest risk of bleeding events with lung cancer associated with the highest mortality, MACCE and stroke. In a study focusing on outcomes of patients with STEMI patients with cancer were less likely to meet key quality indicators (8) and higher 30 day mortality than those without cancer, with the majority of deaths (62%) cardiac related.

On this background the delegates proposed that the discussion should also be opened up to include structural intervention in particular TAVI in patients with cancer. Two specific scenarios were identified; Patients in whom intervention for severe symptomatic aortic stenosis is indicated from a Cardiology viewpoint however the necessary evaluation, assessment and treatment may delay cancer treatment, Patients in whom intervention is not felt to be necessary from a cardiology viewpoint however the oncology team are not comfortable treating the cancer due to the presence of aortic stenosis. A number of barriers to intervention were identified including communication between cardiologists and oncologists. It was highlighted that often the prognosis from cancer is underestimated and may lead to patients not being offered treatment for their CVD. Furthermore, cardiologists are not necessarily best placed to understand the urgency of cancer treatment to ensure optimal outcomes from a cancer survival. In this instance cardio-oncology networks may be particularly beneficial to increase multidisciplinary communication to ensure optimal management of this population.

The discussion then turned to the variability across Europe in the management of patients with ACS in particular STEMI versus NSTEMI. Here the delegates felt on a whole treatment of STEMI in patients with cancer is an easier decision than NSTEMI given the more emergent nature of the condition. Again the heterogenetic of cancer was emphasised with varying ischaemic and bleeding risks associated with differing underlying malignancies as well as the potential to under-estimate prognosis. Whilst shared decision making was identified as a benefit the barriers of access and ease of discussion when based in different sites was highlighted. It was felt beneficial to develop a survey of current management of ACS in patients with cancer across Europe to help guide future management recommendations.

Finally, a gap in the evidence with regard to intervention for pulmonary embolism in patients with cancer was identified.

Workshop 2: The ESC Atlas in Interventional Cardiology – In collaboration with the EAPCI International Affairs Committee & ESC Atlas leadership from the European Heart Agency

The ESC/EAPCI Atlas in Interventional Cardiology (9), part of the ESC Atlas in Cardiology initiative, provides valuable insights into cardiovascular care across ESC member countries. Collection of data for the third edition using 2021-2022 data, with 55 member countries invited, is currently ongoing. The importance of data collection by physicians was emphasised by Radu Huculeci from the European Heart Agency who opined that if data is not collected by physicians, it will be collected and manipulated by non-physicians. Working closely with member societies and working groups the ESC/EAPCI Atlas is a unique opportunity to collect quality data providing a reliable source of information on country activity.

A number of benefits of strong data collection where highlighted including support to advocacy efforts to shape cardiovascular policy and regulation, providing data with regard to changes and trends in numbers of procedures and techniques in different countries and healthcare systems as well as monitoring progress of implementation of new techniques and technologies. Delegates provided examples of the usefulness of this data when discussing implementation and expansion of treatment modalities with stakeholders in their countries.

The third edition of the ESC/EAPCI Atlas will collect 65 variables divided into three sections dedicated to Interventional Cardiology: Health care resources with focus on interventional cardiology, procedures and resources for coronary interventions, procedures and resources for structural interventions. In order to provide high quality

data all ESC member countries were invited to participate in a quality survey. Of the 16 that responded 86% considered the initiative important or very important for their country. If was felt that the current process is reasonable however there is potential for improvement, presently 1-3 people per country are involved in data collection using mixed data sources with approximately 4-8 weeks required to collect all date. In some countries direct output from the national registries may be possible. A number of suggested variables for inclusion in future editions were highlighted including, management of cancer patients linking with workshop one.

A discussion was held with regard to collection of data for some procedures at the boundaries of interventional cardiology, such as thrombectomy for pulmonary embolism and stroke. Delegates highlighted the potential for under reporting of procedures for example in some countries these are the remit of interventional radiologists rather than cardiologists. Further discussion was held with regard to the need to consider if the variable collected is useful and if so how feasible is this data collection. Overall, the delegates felt that a known dataset that could be collected prospectively would be beneficial to improve the completeness and quality of data collection. The lag between data availability for member countries was identified as a potential barrier to yearly publication of data but it was felt that data should be published at two to three yearly intervals. The challenges of data collection in countries without national datasets was highlighted by several delegates and the potential benefit of advocacy from EAPCI to implement national databases.

Workshop 3: Sex disparities in percutaneous cardiovascular interventions – In collaboration with the EAPCI Gender & Disparities Committee

The third workshop opened with acknowledgement that the EAPCI has the lowest female representation (15.3%) within ESC organisations however significant strides have been made to achieve equity at an executive board and board level. The role of the EAPCI of highlighting inequity of access to care for female patients (10,11) as well as barriers to a career in interventional cardiology (12,13) was emphasised. Furthermore, the EAPCI has allocated 50% of Fellowship grants to men and 50% to women since 2018. On this background the EAPCI Women committee has evolved into the EAPCI Gender and disparities committee.

A key aim of the committee is to map disparities in ACS care on both a gender level as well as potentially ethnicity and socio-economic level. Discussion with delegated highlighted the potential barriers of what is legally recordable in each member country i.e. in some countries ethnicity cannot be recorded. Overall, it was felt that mapping of disparities in pre-hospital cares/access to care, treatment within the catheterisation laboratories as well as post intervention care such as access to cardiac rehabilitation and prescription of GDMT has potential benefits not only for patients but also for strategic planning of care pathways. The difficulties of data collection was acknowledged. However, it was felt that a qualitative survey has the potential to increase awareness of disparity and provide insights into variability in pathways of care. Given the variability of income levels across countries it was felt that deprivation rather than income is a more beneficial variable when available.

The inclusion of women and minority groups in research was highlighted by a number of delegates. A number of barriers to participation such as family and caring responsibilities were identified. Facilitators of male participation in research such as spousal support does not appear to exist in reverse.

Workshop 4: Equitable access to training and education in interventional cardiology in Europe: towards the mutual recognition process - In collaboration with the EPACI Training and Certification Committee & EAPCI International Affairs Committee

A key aim of the EAPCI is to define standards for competency and excellence in interventional cardiology as well as facilitate professional mobility of EAPCI members. Workshop four focused on equitable access to training as well as the process of moving towards mutual recognition of training across ESC member countries and the potential ways EAPCI certification can facilitate this. In order to understand the current standards for PCI/SHD operators as well as state of training in ESC member countries the EAPCI training and certification committee completed a survey of catheterisation laboratories, operators, training and certification schemes in ESC member countries. There is significant heterogeneity across member countries not only in numbers of operators/population but also in who is permitted to perform interventions as well as minimum numbers required to achieve and maintain competency. Presently, just over half of countries have a legal and common training programme in PCI (54.7%) and one fifth in structural heart disease (21.4%).

The current Core Curriculum for Percutaneous Cardiovascular Interventions (14) and Core Curriculum for Structural Heart Disease which is presently under review provide educational and training standards for operators across member countries. The key educational collaboration between the EACPI and PCR was highlighted with PCR's ethos of sharing knowledge experience and practice in cardiovascular interventional medicine fundamental to this partnership, the PCR-EAPCI Textbook in percutaneous interventional cardiovascular medicine underlies the EAPCI core curricula. The present EAPCI IC Certificate is a two-part process with Part A testing theoretical

knowledge via an MCQ examination and Part B a 24-month training programme with a procedural logbook. The EAPCI Country Mutual Recognition Process (CMRP) is presently working towards a process where individuals who are certified with a mutually recognised national association will only have to pass Part A to be fully EAPCI certified. It is equally envisaged that reciprocity between National and European certifications will allow EAPCI certified individuals to be exempted from the practical part of national certification. A similar process for certification in Structural Heart Disease following publication and adoption of the EAPCI Core Curriculum is envisaged.

Concerns were raised that the EAPCI curriculum does not include mandatory or minimum procedural levels for competency and whilst the differences in skill acquisition between individuals as well as procedural numbers available in countries were acknowledged it was agreed that there is a relationship between experience, volume and competency. It was highlighted that due to population sizes and procedural numbers in some ESC member countries it may be necessary to train abroad in order to obtain the depth and breadth of experience to become adequately trained and competent. In this regard EAPCI needs to continue to support members with fellowship training grants. Once competent in a procedure the evidence supporting a relationship between procedural volume and outcomes does not exist (15,16). Therefore it was also emphasised that patients should not be denied access to care or procedures due to the population of their country or procedural numbers within a country. Overall it was agreed that certification of training and competence should remain within the remit of the EAPCI and National Societies. Moving forward further work needs to be carried out to integrate national requirements with the EAPCI certification in order to allow mutual recognition of training across ESC member countries.

Workshop 5: Standards and Certification for training and education in the EAPCI catheterisation laboratory – In collaboration with the EAPCI Quality Improvement Committee & EAPCI Fellowship and Grant Committee

Following on from EAPCI Certification of individual operators, workshop five focused on the support EAPCI can provide to trainees in the form of EAPCI grants as well as certification of catheterisation laboratories. EAPCI Fellowship grants match applicants to host centres in order to provide specific training in interventional cardiology. Broadly two categories of applicants exist; those who have completed general cardiology and wish to train in interventional cardiology, those who have completed interventional cardiology training and wish to pursue more advanced training. It was identified that host centres must propose themselves as a centre and advertisement of this process could be optimised in the future. All applications are reviewed by the fellowship and grants committee with a transparent grading process, it was identified that may candidates applied with insufficient experience or incomplete applications. Further resources with regard to application requirements as well as better promotion of the grants in a timely fashion may be beneficial in improving quality of applicants and improve matching between applicants and centres.

Attention then turned to EAPCI accreditation of teaching catheterisation laboratories. A number of potential benefits of accreditation were identified including the ability to provide a structured environment for healthcare professionals to develop their skills in performing complex procedures as well as standardization of practices across member countries. Training centers allow experienced interventional cardiologists to share their knowledge and expertise with trainees, enabling transfer of advanced techniques, best practices, and the latest research findings to the next generation of

practitioners. Continuous education, quality improvement and professional development required for accreditation ensures that healthcare professionals remain up to date with the latest advances in practice. Linking in with workshop four accredited training centers will be crucial in standardizing IC training programs and allowing mutual recognition of training across member countries. From a public trust and patient perspective certified training centers will enhance the overall quality of IC services, leading to improved patient outcomes, provide transparency and reassurances with regard to quality to patients and regulatory bodies.

The discussion was opened to delegates to share their national experience of catheterisation laboratory accreditation which varied from none to accreditation by National Societies. It was felt beneficial to review the work carried out by other ESC associations who provide service level accreditation such as EHRA and EACVI to learn from their experiences and adapt good practice points to EAPCI cath lab accreditation. A broad discussion was held with regard to the key quality metrics for EAPCI accreditation, once again a number of concerns with regard to how to define procedure volumes and operator volumes was raised. The linkage between accreditation and quality outcome metrics through provision of high-quality data to the ESC/EAPCI Atlas in Interventional Cardiology was emphasized. Overall, it was felt that centre data should be submitted to a national dataset on a yearly basis for submission to the ESC/EAPCI Atlas with reaccreditation of centres on a five-year cycle. Finally, as training evolves the role of the simulation process within the catheterisation laboratory both for education of trainees and continuous professional development for all staff was discussed. Whilst it was felt simulation was beneficial, due to economic considerations access to a simulation centre and a programme of ongoing education rather than dedicated simulation equipment within each centre was felt to be a more pragmatic approach to ensure quality care.

Workshop 6: EAPCI Young and Online & Communication Committees

The EAPCI Young committee aims to link with other EAPCI committees to provide education, training, networking and mentoring for young interventional cardiologists across member countries. Equity of access to training opportunities can vary dependent on the socio-economic status and personal circumstances of EAPCI members therefore the EAPCI Young committee works in close collaboration with Young National Ambassadors to identify areas of need within individual countries and provide educational events at national and regional level through co-operation between the EAPCI and Member Societies.

A number of questions were raised by delegates with regard to individual countries definitions of fellows and at what stage in one's career training in Interventional Cardiology occurs i.e. as part of overall training in cardiology or only after successful completion of a general cardiology training. Again, the links between the EAPCI core curriculum for training as well as certification of catheterisation laboratories were discussed as potential means of increasing the networks of fellows within the EAPCI.

Following on from this the Online and Communications Committee discussed the use of multiple communication channels to ensure all EAPCI members have the opportunity to participate in EAPCI activities as well as promote the ongoing initiatives of the EAPCI. Discussion turned to the importance of a professional approach to social media in any situations where EAPCI is being represented or the views could be perceived as representative of the association.

Workshop 7: How can EAPCI help you? In Collaboration with the EAPCI International Affairs Committee

The final workshop of the summit allowed Member Society representatives to discuss topics affecting their countries not previously raised during the summit. A number of common themes arose from these discussions including the benefit of the EAPCI Atlas when benchmarking their countries performance against other countries and using this data to advocate for funding or implementation of procedures at a governmental level. The benefits of ongoing professional development within the wider Catheterisation Laboratory themes as well as simulations was highlighted. The role of the EAPCI in providing support for member societies who wish to advocate for national level databases was raised as a potential strategy to increase the quality of data in the ESC/EAPCI Atlas.

Expected outcome metrics.

As a result of the EAPCI summit a number of outcome metrics will be used to monitor the successful implementation of the consensus points.

- Development of a survey to understand current variations in treatment of cancer patients with ACS across EAPCI members.
- Improved participation in and data quality output from the ESC/EAPCI Atlas in Interventional Cardiology.
- Increased awareness of disparities in access to ACS treatment through mapping of disparities.
- Ongoing work towards implementation of the EAPCI Core Curricula, Certification of Operators and Catheterisation Laboratories.
- Co-operation with Member societies to provide joint sessions at national congresses.

Conclusions

The 2023 EAPCI summit focused on equity of access to percutaneous cardiovascular interventions for patients and health professionals. The delegates reached a consensus on the importance of understanding current practice with regard to ACS in patients with cancer and increasing awareness and education to ensure this population is not under treated. Mapping current disparities in access to care is key in understanding how to address this and it is the responsibility of Scientific Societies to action this. It is clear that the structure of training and education is heterogenous across member countries and EAPCI has a role to support both interventional cardiologists as well as advocate for the highest standards in patient care. The core curricula, accreditation of training centres, co-operative educational events with member societies as well as ongoing work towards mutual recognition of training all work towards the goal of equitable access to percutaneous cardiovascular interventions for patients and professionals.

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Conflict of interest statement

The authors have no conflicts of interest to declare.

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