IR congress news

CIRSE 2019 – Barcelona
Monday, September 9, 2019

INTERVENTIONAL ONCOLOGY STRATEGY

Turn to page 2
for a complete look at CIRSE's IO strategy.

Renal tumor ablation – what can we expect in the next 5 years?

Afshin Gangi, EBIR

Renal cell cancer (RCC) represents 2-3% of all cancers, with the highest reported incidence in Western countries [1]. Due to the increased incidental detection of tumours by cross-sectional imaging performed for other non-specific reasons, RCC incidence has progressively increased in last few decades by about 2% worldwide [1]. Such increasing incidence occurred also in Europe where it was estimated that in 2012 there were approximately 84,400 new cases of RCC and 34,700 RCC-related deaths [1].

RCC is usually diagnosed when it is still a kidney-confined disease (i.e. T1), and in most of the cases its largest diameter measures no more than 4 cm (i.e. T1a).

Partial nephrectomy (PN) represents the gold standard treatment for T1 RCC. However, in the last two decades percutaneous image-guided thermal treatments (especially radiofrequency ablation – RFA – and cryoablation – CA) were increasingly proposed for patients unfit for surgery, and a large retrospective study has recently reported similar rates of local tumour control after percutaneous thermal treatments and PN applied to treat T1 RCC [2].

Nevertheless, percutaneous treatments are still struggling to affirm their primary curative role in T1 RCC patients and in fact, they still do not appear as the first-line treatment option in the guidelines published by the largest uro-oncological societies [3-5]. This is likely due to the low-quality evidence gathered in last two decades, which was often derived from small single-arm retrospective case series [6-11], which were more focused on the technical aspects of the treatment rather than on the whole clinical/oncological scenario of the disease. Looking back to these studies, some common weaknesses may be seen and include: a) the heterogeneity of protocols in terms of ablation system, imaging guidance and imaging protocols used to assess the clinical result; b) the lack of a systematic inclusion of sole "biopsy-proven" RCCs; and c) the absence of systematic reporting of the RCC Furhman grade. Despite all these limitations, it should be noted that these studies did not fail in demonstrating all the main potentialities granted by the percutaneous thermal treatments such as the reduced complication rate compared to PN, the reduced in-hospital stay, and the optimal rates of local tumour control, especially when T1a tumours were treated.

Given such scenarios, it is expected that in the next few years, percutaneous treatments will still continue to play a major role in the treatment of T1 RCC in patients unfit for surgery, and more and more they will be probably be proposed to, or even requested by, good surgical candidates. However, it seems time to clearly establish the primary curative intent of percutaneous treatments for T1 RCC through an official acceptance of these treatments by the major international guidelines. Therefore, it will be mandatory to apply a systematic approach taking into account:

1) A rigorous patient selection limited to "biopsy-proven", low Furhman grade RCCs (the selection should pass through an accredited and dedicated tumour board).

2) A systematic and widely-accepted application of one single ablation technique; in this sense CA seems the most adapted tool since it: a) is particularly designed to shape the ablation area according to the size and morphology of the target tumour; b) allows immediate intra-operative visual assessment of the technical success (i.e. large coverage of the tumour by the ice ball); c) results in low rates of urinary complications; d) is widely recognised and accepted by the urology community. Finally, CA seems particularly adapted to take advantage of machine learning-based software that will be progressively introduced into ordinary clinical practice and that will allow reproducible treatments according to tumour volume, vascularisation, location and histology (grade).

Don't miss it !

Is renal tumour ablation ready for prime time?
Hot Topic Symposium
Monday, September 9, 15:15-16:00
Auditorium 1

Afshin Gangi
(EBIR)
University Hospital of Strasbourg
Strasbourg, France

Prof. Afshin Gangi is a world-renowned expert on interventional oncology. He leads a dynamic team of image-guidance specialists at the University Hospitals of Strasbourg, who have become world-leaders in IO procedures, especially musculoskeletal interventions and cryoablation, and are well-known for their robust data acquisition and peer-reviewed literature. Their hospital is currently participating in the pilot phase of CIRSE's new IO-based hospital accreditation system, IASIOS.

Prof. Gangi has been an active CIRSE member for many years, with his most recent contributions to its committees and task forces including being scientific programme chairperson for ECIO, CIRSE Treasurer, Vice-President and a member of the Oncology Alliance Subcommittee.
He will assume presidency of CIRSE following today's General Assembly in Room 116 at 17:30.

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3) A systemic application of adequate intra-operative imaging guidance, such as CT and MRI, allowing a large field of view and an objective intra-operative visual assessment of the technical success.

4) A systematic patient follow-up performed with dedicated imaging techniques such as contrast-enhanced magnetic resonance imaging performed with uniform widely accepted protocols.

In summary, we believe that a standardisation of the protocols and quality control should be applied at each single step of the management of the RCC disease in order to gather uniform data which can be used to generate high-quality scientific evidence supporting percutaneous ablation as a first-line treatment for T1 RCC. We believe there is no other way to achieve such a goal, and this belief is supported by the successful experience of radiation therapy that has become a gold-standard treatment in many oncologic scenarios thanks to the systemic application of shared and uniform protocols.

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Strategies for interventional oncology development – the CIRSE IO initiatives

Interventional oncology has experienced continuous growth over the years, the demand for procedures offered by IO sometimes outpacing the ability of hospitals and educational systems to adapt correspondingly. In order to create a framework for IO to thrive and develop congruently throughout Europe, CIRSE has launched a number of initiatives. These multifaceted projects aim to set the highest standards for all aspects of interventional oncology, from techniques to procedural and clinical care standards to teaching the various IO procedures to the next generation of IRs.

With its dedicated Oncology Alliance Subcommittee, CIRSE created an advisory body within the society to counsel the Executive Committee on all oncology-related initiatives, including its cooperation with prestigious societies such as ECCO and ESMO, and a great number of other projects like CIRSE's various clinical registries on IO procedures, the recently released European Curriculum and Syllabus for IO, CIRSE Library e-modules, and a special CVIR supplement.

The European Curriculum for IO – Setting a common standard for IO education

This curriculum is a supplementary document that is dedicated specifically to interventional oncology and is intended to be used in conjunction with the European Curriculum and Syllabus for Interventional Radiology. It provides recommendations and guidelines for the knowledge, skills and competencies essential to attaining proficiency in IO and providing optimal IO care to cancer patients. It is intended to reinforce and further bolster the reputation of IO as the fourth pillar in cancer care.

www.cirse.org/curricula

The European Conference on Interventional Oncology – ECIO

In order to provide a platform for the ever-growing number of interventionalists involved in oncology, CIRSE organised the first European Conference on Interventional Oncology in 2008 in Florence, Italy. It was a resounding success, the scientific content, the quality of the presentations and the overall number of delegates exceeding all expectations, which is why after its second edition, ECIO changed from being a biennial meeting to taking place on a yearly basis, quickly becoming a fixture in the interventional radiological and oncological calendar.
Today, ECIO welcomes over 1,450 delegates from all over the globe to cutting-edge conferences held around Europe. Thanks to CIRSE's Collaborating Against Cancer Initiative, ECIO delegates are able to bring their non-radiologist colleagues at no extra cost, helping interventional oncologists to promote multidisciplinary teamwork.

www.ecio.org

IO Research

Since 2013, CIRSE has been acting as the independent scientific sponsor of pan-European observational studies. By utilising synergies between the research interests of interventional radiologists and the data collection needs of medical device manufacturers, CIRSE has set up three industry-funded, independent observational studies looking at loco-regional treatments for primary hepatocellular carcinoma (HCC) and liver-metastatic colorectal cancer (mCRC). These studies aim to increase the evidence base of the respective therapies by collecting data on the real-life use of the therapies in the context of patients' entire cancer treatment. In addition, CIRSE is currently working on a study that will gather data on microwave ablation of colorectal liver metastases.

www.cirse.org/research

Hospital Accreditation
CIRSE's International Accreditation System for Interventional Oncology Services (IASIOS) system offers facilities a unique opportunity to achieve a seal of quality and recognition for its interventional oncology services performed according to the CIRSE Standards of Quality Assurance in IO.

The goal of IASIOS is to certify better patient care, support quantifiable benchmarks and encourage the development of IO. By enrolling in this programme, IO facilities can prove their compliance with the CIRSE IO Standards and their commitment to providing high quality care to cancer patients.

www.iasios.org

IO4IO

In response to the growing importance of immune therapies and their potential for interventional oncology, CIRSE recently established a task force to promote IO within the growing immuno-oncology field. The aptly named IO4IO Task Force aims at expanding design trials integrating IO in immuno-oncology, establishing partnerships with the pharmaceutical industry, and supporting research, both fundamental and translational. As a first step in this direction CIRSE has been invited to design a joint session with ESMO at their Immuno-Oncology Congress from December 11 to 14, 2019 in Geneva, Switzerland.

Patient Information

In a continued effort to inform the public about the many benefits of interventional radiology, CIRSE recently overhauled the patient information section on its website, featuring numerous pages on IO treatments. In addition, new patient information info sheets are being created and will be available for download soon.

www.cirse.org/patients

Immunotherapy: big business vs. evidence

Daniel Y. Sze

Don't miss it !
Everything you wanted to know about immunotherapy in IR
Focus Session
Monday, September 9, 08:30-09:30
Room 116

Daniel Y. Sze
Stanford University
Stanford, California, USA

Dr. Sze studied medicine and also obtained a PhD in Biophysics at Stanford. He completed his residency at the University of California, San Francisco Medical Centre and a fellowship at Stanford University School of Medicine, where he is currently a Professor of Radiology (Interventional Radiology). His primary clinical focus is interventional oncology and his scholarly and clinical trial interests include transarterial administration of chemotherapeutics, radioactive microspheres and biologics for treatment of unresectable tumours. As a renowned researcher, Dr. Sze has authored or co-authored more than 200 publications and presented many of his findings at medical conferences around the world.

Decades of study on the immune system and its role in suppressing malignancy have finally yielded effective pharmaceuticals prescribed to treat cancer. The idea of manipulating a patient's immune system to promote its recognition and attack of that patient's cancer is extremely compelling, and the introduction of these agents into the commercial market was met with very rapid adoption. These new immunotherapy agents include: checkpoint inhibitors, a type of agent that boosts anti-tumour immunity by reducing some of the restraints on immune cells; CAR-T cells, tailored human T lymphocytes that are taught to recognise and attack a cancer; and oncolytic viruses, engineered to selectively infect cancer cells and trigger anti-tumour immunity. These new agents have been proven in large clinical trials to be efficacious against a wide variety of malignancies, with improvement of survival and tolerable toxicity rates. It is particularly exciting that a subset of treated patients have very durable responses for many years, suggesting that even in late stages, some malignancies may be permanently cured.

The 2018 Nobel Prize in Physiology or Medicine was shared by two researchers, James Allison and Tasuku Honjo, who discovered co-stimulatory checkpoints that are now the targets of most of the available immunotherapy drugs. The American Society of Clinical Oncology (ASCO), the American Association for Cancer Research (AACR), the European Organisation for Research and Treatment of Cancer (EORTC), the European Society for Medical Oncology (ESMO), and virtually every cancer organisation worldwide have celebrated the emergence of this new class of drug as the greatest advance of the year(s). IO is finally recognised as a new pillar in the treatment of cancer, but IO is "immuno-oncology," not "interventional oncology." Pharmaceutical companies market directly to the public, and many patients make appointments with their oncologists specifically to ask for immunotherapy. One drug has even received a "tissue agnostic" approval, meaning it is indicated based on a biomarker, not on the histologic type or organ of origin, representing a real development of "personalised medicine."

According to IQVIA, of the 442 new immunotherapy drugs currently undergoing human clinical trials, 23 are in Phase III or later. One third of these are addressing PD-1/PD-L1 checkpoint inhibition, the most common target for current immunotherapies, but 61 other immune mechanisms are being tested amongst these 442 new drug trials. The mean trial duration in oncology is approximately 3.5 years, so progressing through Phases I, II and III is lengthy, and the median time from a drug receiving a patent to being launched commercially is over 10 years. The composite success rate for drugs entering human Phase I trials eventually reaching approval stands at only 8%, contributing to a research and development price tag of approximately €2 billion per successful drug.

The two top-selling PD-1 checkpoint inhibitors, pembrolizumab and nivolumab, are each responsible for approximately €6 billion in sales annually – the sales of these two drugs alone are equivalent to the annual total healthcare expenditure of the Czech Republic with a population of over 10 million people. Sales of these two drugs also represent nearly 10% of the total global expenditure on cancer drugs, which reached €132 billion in 2018. Per gram, these drugs cost approximately 5,000 times the price of gold, and treatment of a typical American patient costs about €130,000 per year. In the year 2018, over 200,000 individual patients were treated globally with a PD-1 or PD-L1 inhibitor, despite limited availability outside of Western Europe and North America.

CAR-T cells are even more costly, approximately €400,000 per patient. Only two are currently approved, but an additional 24 CAR-T cell therapies are in late stages of human clinical trials. Other adoptive cell transfer technologies (including dendritic cell vaccine, NK cell, cytotoxic T lymphocyte, tumour-infiltrating lymphocyte, mesenchymal stem and progenitor cell therapies) account for another 30 drugs in the late-stage pipelines. Although these technologies are exciting and promising, and may provide real benefit to patients, it is difficult to budget for an additional €400,000 per cancer patient over that patient's treatment course.

Melanoma is the human malignancy that has been the proving ground for most immunotherapies, in part because of its high tumour mutational load, making it susceptible to immune system recognition and response. The mean total cost of management of malignant melanoma was €1,634 per patient in 2004, and escalated to €269,682 in 2017, in part because immunotherapy is given as first-line therapy in almost 80% of patients. A study in 2019 showed the addition of the oncolytic virus talimogene laherparepvec increased the cost further to €439,060. This represented an incremental cost-utility ratio of €2,007,065 per progression-free survival quality-adjusted life year (PFS-QALY) gained. The survival improvement, though, was statistically significant.

Certainly, immunotherapy is revolutionising the way we treat cancer, with particular benefit to the 15-20% of patients with durable, long-term responses. It is problematic to assign a cost to human life. The financial burden of immunotherapy, however, is threatening already stretched medical systems, and is not sustainable. The €132 billion spent globally on cancer drugs in 2018 represented a doubling in 5 years, and projections show another doubling in the next 5-6 years. Pharmaceutical companies deserve a return on their substantial investments in research and development, but eligible patients deserve treatment without falling into bankruptcy. The average annual cost of a newly approved drug is €132,000, and some patients receive more than one. Even beyond the science, we will need to devise new ways to apply immunotherapy in rational, fair and sustainable algorithms.

News on Stage

News on Stage will feature displays on the latest results from multi-centric trials, ground-breaking techniques and many more IR hot topics, shown in a dedicated open area. Large-screen presentations given by the authors during dedicated slots around lunch time will give delegates the opportunity to hear from the experts and engage with them and other key opinion leaders in active, lively discussions.

Monday, September 9, 13:15-14:15, News on Stage Area

News on Stage: Interventional oncology

Moderators: R. Lencioni (Pisa/IT), C.T. Sofocleous (New York, NY/US)

2004.1 Performance of a new needle for the displacement of critical structure in thermal ablation
P. Auloge, R.L. Cazzato, J. Caudrelier, P.P. Rao, G. Koch, J. Garnon, A. Gangi; Strasbourg/FR

2004.2 Effects of ablation on systemic therapy for metastatic pulmonary sarcoma: potential synergy?
K. Menon, A. Doshi, K. Ganjoo, D. Wang, G. Hwang; Stanford, CA/US

2004.3 Randomized embolization trial for neuroendocrine tumors (RETNET): first safety report
M.C. Soulen[1], N. Fidelman[2], R.D. Garcia-Mónaco[3], S.B. White[4], R. Avritscher[5], G. El-Haddad[6], E.P. Wileyto[1]; [1]Philadelphia, PA/US, [2]San Francisco, CA/US, [3]Buenos Aires/AR, [4]Milwaukee, WI/US, [5]Houston, TX/US, [6]Tampa, FL/US

2004.4 Chemoembolization for treatment of hepatocellular carcinoma: national registry-based analysis
T. Andrašina, M. Uher, T. Rohan, P. Matkulčík, J. Zavadil, B. Cechova, L. Jandurova, V. Válek; Brno/CZ

2004.5 Trans-arterial chemoembolization with degradable starch microspheres (DSM-TACE) vs. selective internal radiation therapy (SIRT) in multifocal hepatocellular carcinoma (HCC)
T.A. Auer, M. Jonczyk, F. Collettini, B. Hamm, B. Gebauer; Berlin/DE

2004.6 Multimodality quantitative volumetric and metabolic assessment of early tumor response and survival in patients with uveal melanoma liver metastases undergoing Y90-radioembolization
F. Tabotta, S. Gnesin, A. Ponti, A. Denys, A. Hocquelet, A. Digklia, J. Prior, J.-F. Knebel, N. Schaefer, R. Duran; Lausanne/CH

The News on Stage Area is located next to Auditorium 2, opposite the Members Lounge.

ESRD Symposium

Novel interventional technology for dialysis patients

Experts weigh in on new data, guidelines, and what to incorporate into treatment paradigms

Date: Monday 9th September
Time: 14:30 - 15:30
Location: Room 117
Moderator: Dr. Robert Morgan

Agenda

Patient challenges and new KDOQI guidelines	Dr. Charmaine Lok *Canada*
Endo AVF, the evidence and patient benefits	Dr. Dheeraj K. Rajan *Canada*
Endo AVF creation, the real-world experience	Dr. Panagiotis Kitrou *Greece*
Innovative technologies for managing the patient life plan	Dr. Bart Dolmatch *USA*

BD

BARD
has joined BD

The CIRSE Academy – From Curriculum to Career

Ciara Madden, CIRSE Office

Maria Tsitskari (left)
Heather Moriarty (right)

The newly introduced CIRSE Academy aims at providing comprehensive knowledge on IR procedures through online courses based on the European Curriculum and Syllabus for IR. Courses include a theoretical part, sample cases and teaching videos, and are all peer-reviewed by experts. All CIRSE Academy courses are CME-certified and end with an interactive quiz to test your knowledge on the respective procedure.

Currently, there are 26 courses available across 7 topics, with another series of basic and advanced courses already in the production phase.

Each course takes 1-2 hours to complete and has been designed around the European Curriculum and Syllabus for IR, making the CIRSE Academy the perfect tool to help you prepare for the EBIR exam. Ninety-day access can be bought for each course; CIRSE members are eligible for a reduced fee.

The courses have been carefully compiled by leaders in the field, with over fifty well-respected interventional experts contributing their time and knowledge to this momentous project. We spoke to two course authors to find out more about their experiences in working on the Academy, and why their respective modules are attracting such interest.

Dr. Maria Tsitskari, an interventional radiology consultant based in Nicosia, Cyprus, has contributed to two published Academy modules, including the most downloaded. She also serves on CIRSE Patient Information Brochure Task Force and the European Trainee Forum.

CIRSE: At the time of writing, the "Biliary drainage and stenting" module ranks as the Academy's top viewed course – does this surprise you?

Tsitskari: Actually, it does not, since biliary procedures constitute one of the most common and basic IR procedures, and play an important part of the management of patients with both benign and malignant biliary obstruction. Despite this, biliary interventions can still present some of the most demanding and complex problems in interventional radiology, and it makes perfect sense that the IR community is looking to read up on the latest information.

CIRSE: What aspects of biliary drainage and stenting do you think are particularly important to consider?

Tsitskari: I think one important aspect of biliary drainage and stenting is proper and careful pre-procedural imaging evaluation. Pre-procedural imaging provides valuable information about the extent of biliary obstruction and dilatation, the level of obstruction and presence of any variations in biliary anatomy. Understanding the anatomy of the liver and the biliary tree is also essential when performing biliary interventions. Different variants in the bile duct anatomy exist that can have a profound effect on planning a biliary drainage procedure.

CIRSE: You have worked on two courses – how have you found the experience?

Tsitskari: I admit that the work was hard and demanding, but it was a great experience. I learned a lot through this process. Reading and, at the same time, working together with other experts in this field to compile these modules was a great opportunity to refresh and reinforce my knowledge.

CIRSE: Who do you think can benefit most from the CIRSE Academy courses?

Tsitskari: The courses are ideal for IR trainees aiming to gain fundamental knowledge of a topic, particularly when preparing to sit the EBIR exam. Moreover since education is a life-long process, experts will also find the courses a useful tool for helping to expand their knowledge of different interventional topics. Advanced courses are also planned for the near future, which is a very exciting move!

Dr. Heather Moriarty currently works at The Alfred Hospital, Melbourne, Australia. She co-authored the module on SVC stenting for treatment of malignant obstruction with Dr. Andreas Mahnken. Dr. Moriarty is an active member of the European Trainee Forum.

CIRSE: SVC stenting for treatment of malignant obstruction seems a somewhat obscure topic – how many of these cases do you see? What difference does IR make to these patients?

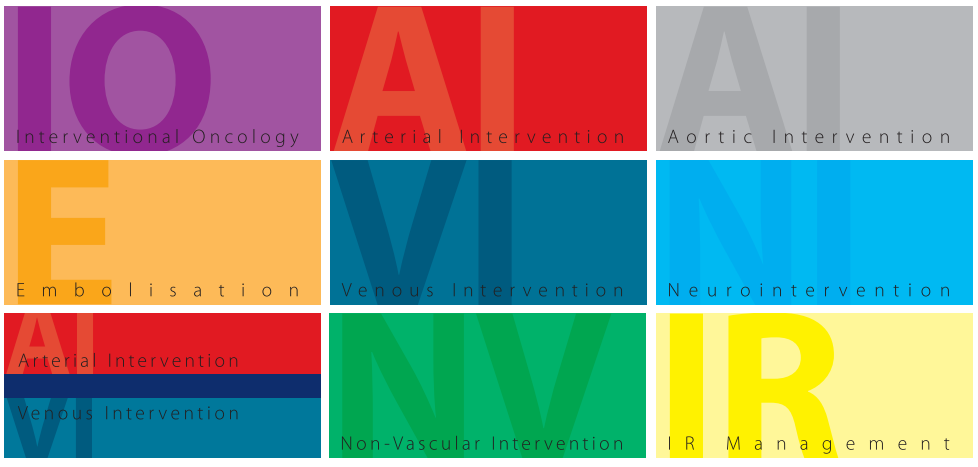
Moriarty: With improved multidisciplinary treatment of many tumours and prolonged patient survival, the management of oncological patients is becoming ever more complex. Interventional radiology has a central role to play in disease diagnosis, stratification and management. Interventional radiology has become one of the cornerstones in the multidisciplinary team of cancer care delivery, adjuncts to treatment, palliation and improving patient comfort and quality of life through symptom relief. The placement of an SVC stent is a procedure which can make a huge impact on patient care, allowing very rapid relief of symptoms, which untreated are frequently distressing and treatment-limiting for our patients. The benefit to patients is what makes treating those with symptomatic SVC syndrome rewarding, and the efficacy of SVC stenting for the treatment of malignant obstruction is excellent, commonly allowing patients to progress onto their systemic treatment.

CIRSE: How did you find the experience of writing a CIRSE Academy course?

Moriarty: As in all disciplines of medicine, research and patient care improvements, international collaboration is paramount. The CIRSE Academy module was interesting and enjoyable for me to contribute to, but most importantly, it highlighted how accessible and available our international interventional radiology community really is! I enjoyed seeing the module to completion, with the tireless help of the CIRSE team.

CIRSE: What, for you, is the best thing about the CIRSE Academy? Why did you volunteer your time?

Moriarty: The CIRSE Academy is a fantastic resource, both to refresh and extend one's knowledge, in particular for young interventional radiologists intending to sit the EBIR exam. The variety of topics covered is excellent and the format is engaging. I volunteered for this initiative as I value and enjoy research and teaching; CIRSE as a platform for these activities allows us to advance as clinicians and as a subspecialty through the promotion of quality academic material and the availability of up-to-date resources in our dynamic medical specialty.



CIRSE academy

The CIRSE Academy in a nutshell:

CME accredited

- **Courses available on: interventional oncology, embolisation, venous interventions, arterial interventions and non-vascular interventions, aortic interventions, and neurointerventions.**
- **25 Euros per course for members | 55 Euros for non-members**
- **Tailored to the European Curriculum and Syllabus used for the EBIR exam**
- **CME accredited (1-2 points per course)**
- **Each course takes 1-2 hours to complete**

Please visit the CIRSE website www.cirse.org/education/cirse-academy/ or learn more about the benefits of the courses by watching our video on the CIRSE YouTube channel.

CIRSE library

The CIRSE Library – a dynamic resource for the IR community

5,114 presentations

3,105 speakers from around the world

2,894 posters

…and continually growing!*

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** CIRSE 2019 presentations are already being added to the database – don't forget to make use of our Live and On Demand feature!*

The Role of Interventional Radiology in Gynecologic Malignancies

Maureen P. Kohi

Don't miss it !
IR in gynaecological emergencies
Case-based Discussion
Monday, September 9, 16:15-17:15
Room 115

Interventional radiologists (IRs) play a central role in in the management of women with gynecologic malignancies. In most IR practices, such patients are routinely cared for throughout the different phases of their malignancy.

The first introduction to a woman with a gynecologic malignancy may be on the day of her diagnostic biopsy. While many IRs are familiar with the different techniques of image-guided biopsy, access to deep lesions within the female pelvis may be challenging due to the close proximity of the pelvic organs and the vasculature [1]. In some case, the ultrasound-guided transvaginal approach may be more practical, particularly when the traditional transabdominal or transgluteal approaches are not feasible (Fig. 1a). This approach can also be used in cases of pelvic fluid aspiration (Fig. 1b) or drain placement (Fig. 1c).

Central venous access is vital for patients with gynecologic malignancies. Peripherally inserted central catheters (PICCs) (Fig. 2a) or subcutaneous ports (Fig. 2b) are commonly used for the administration of chemotherapy, antibiotics, total parenteral nutrition and other medications, and may also be used for blood sampling, transfusions and contrast administration for imaging examinations [2]. These central venous access devices are routinely placed in an ambulatory setting and are removed when no longer needed.

Women with pelvic malignancies may present with ureteral obstruction, causing hydronephrosis, pain and potential renal functional impairment [3]. In some settings, the ureteral obstruction may also cause urosepsis. As a result, percutaneous nephrostomy tubes, nephro-ureterostomy tubes or ureteral stents are commonly placed for urinary diversion (Fig. 3a-c). These minimally invasive procedures may obviate surgery and can be used to optimise the patient's clinical status to undergo different forms of oncologic and radiation therapies.

In the emergent setting, IR plays a vital role in the management of post-operative bleeding. Injury to the pelvic vasculature can result in post-operative morbidity and mortality. Extravasation from the internal iliac artery branches (Fig. 4a) or the ovarian artery (Fig. 4b) can be embolised, returning the patient to a haemodynamically stable state.

In the palliative care setting, patients with malignant pleural effusions or ascites who have undergone repeated thoracentesis or paracentesis can benefit from placement of a tunnelled drainage catheter into the pleural or peritoneal cavity (Fig. 5). Tunnelled drainage catheters are safe, comfortable, cost-effective, and better tolerated by patients who desire to control the drainage of fluid at home [2].

Most, if not all, IRs form a deep bond with their patients who battle the various forms of oncologic diseases. Among these special patients are the women with gynecologic malignancies. It is extremely rewarding to be able to play a central role in the care of such patients, striving to provide them with diagnosis, care, comfort and dignity.

References:
1. Plett SK, Poder L, Brooks RA, Morgan TA. Transvaginal Ultrasound-Guided Biopsy of Deep Pelvic Masses: How We Do It. J Ultrasound Med 2016; 35(6):1113-22.
2. Yu H, Stavas JM. The role of interventional radiology in management of benign and malignant gynecologic diseases. Obstet Gynecol Surv 2013; 68(10):691-701.
3. Elsamra SE, Leavitt DA, Motato HA et al. Stenting for malignant ureteral obstruction: Tandem, metal or metal-mesh stents. Int J Urol 2015;22(7):629-36.

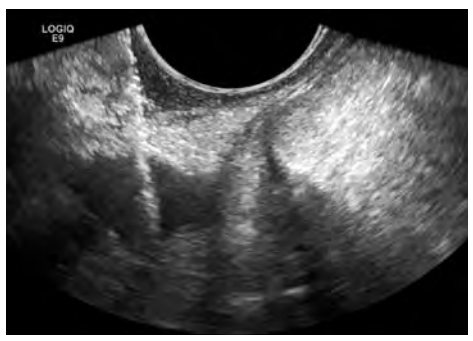


Fig. 1a: Transvaginal biopsy of a pelvic lesion.

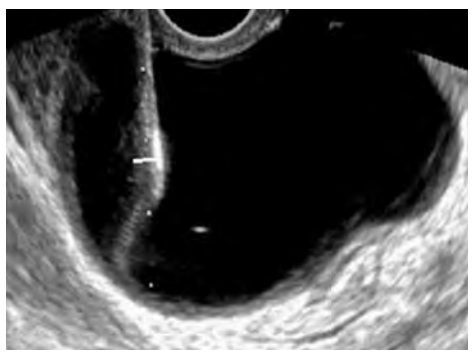


Fig. 1b: Transvaginal aspiration of pelvic fluid.

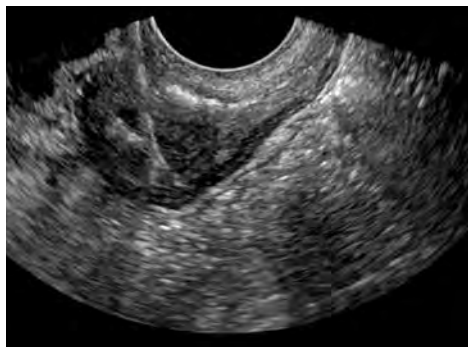


Fig. 1c: Transvaginal drain placement into a pelvic collection.

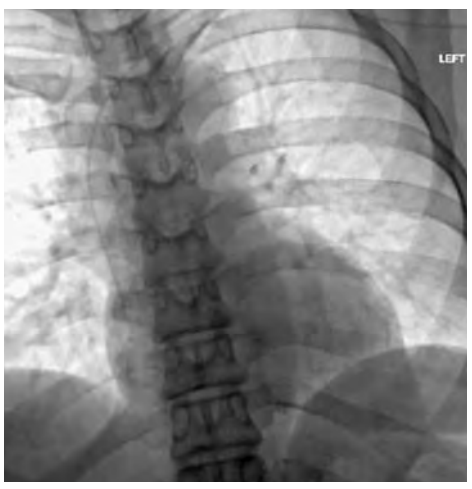


Fig. 2a: Left-sided peripherally inserted central catheter.

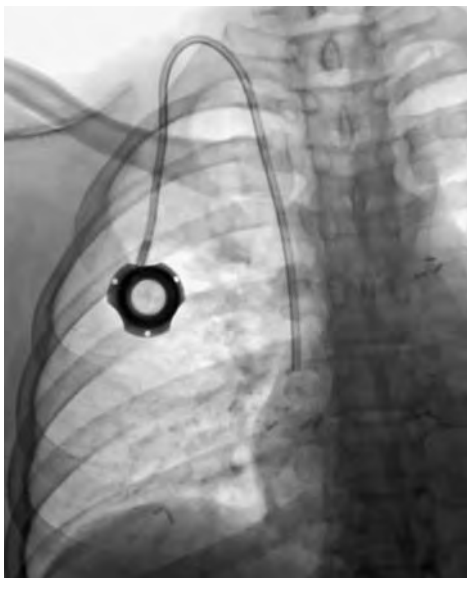


Fig. 2b: Right-sided single-lumen power-injectable chest port.

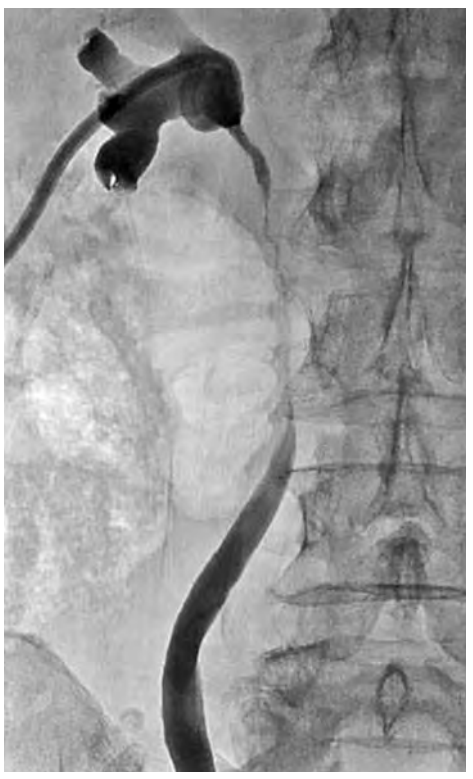


Fig. 3a: Right percutaneous nephrostomy tube.

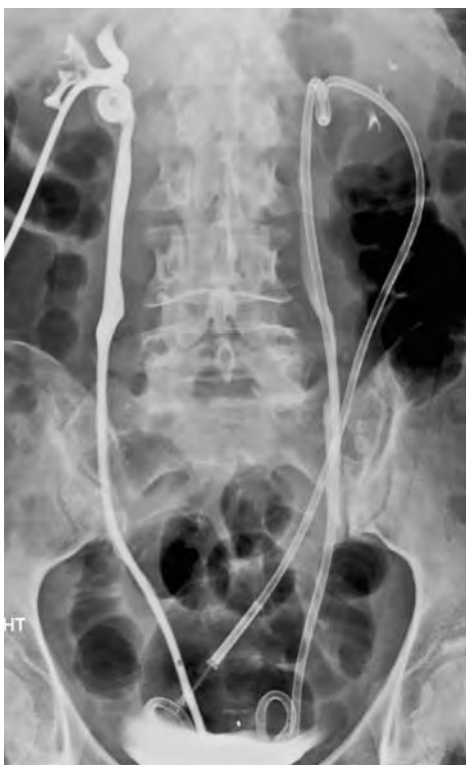


Fig. 3b: Bilateral nephroureterostomy tubes.

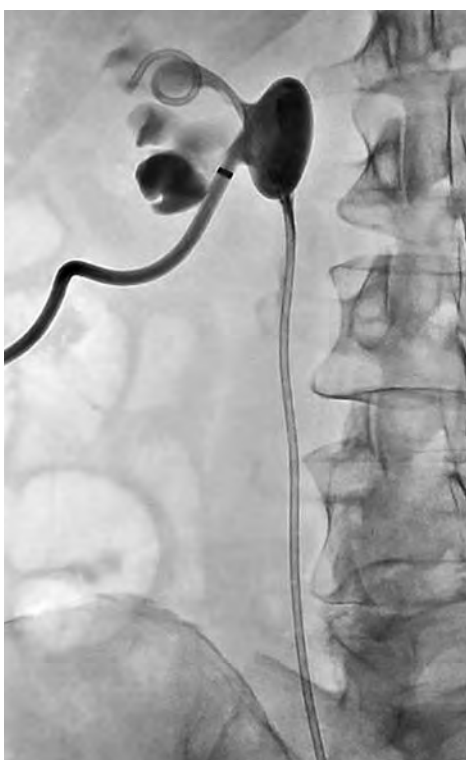


Fig. 3c: Percutaneous nephrostomy tube and ureteral stent.

Maureen P. Kohi
University of California
San Fransico, California, USA

Dr. Kohi received her medical degree with honours from New York Medical College and completed her residency and two fellowships at the University of California, San Francisco. Her primary research interest is interventional oncology and interventions to promote women's health, specifically in evaluating different minimally invasive treatment options for symptomatic uterine fibroids, optimising the management of patients presenting with morbidly adherent placenta and evaluating sex-related differences in vascular and oncologic diseases. As a distinguished researcher and writer, she has authored or co-authored more than 80 published papers and is currently an Associate Professor of Clinical Radiology and Chief of the Vascular and Interventional Radiology Division of the Department of Radiology and Biomedical Imaging at the University of California, San Francisco.

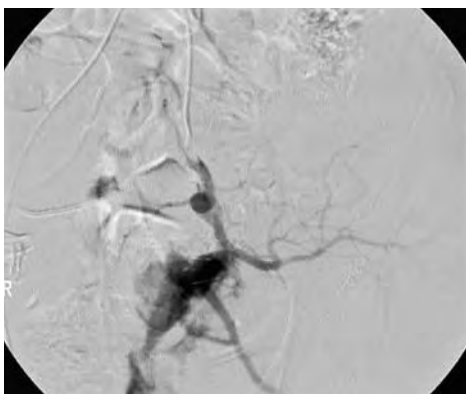


Fig. 4a: Extravasation from the branches of the left internal iliac artery.

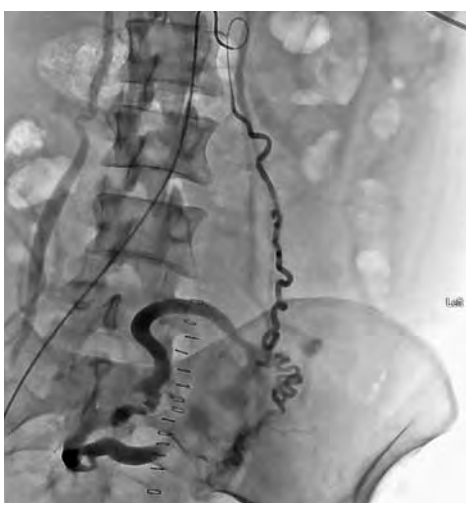


Fig. 4b: Extravasation from the left ovarian artery.

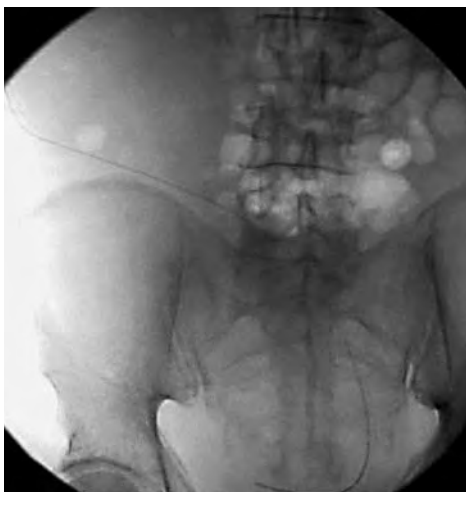
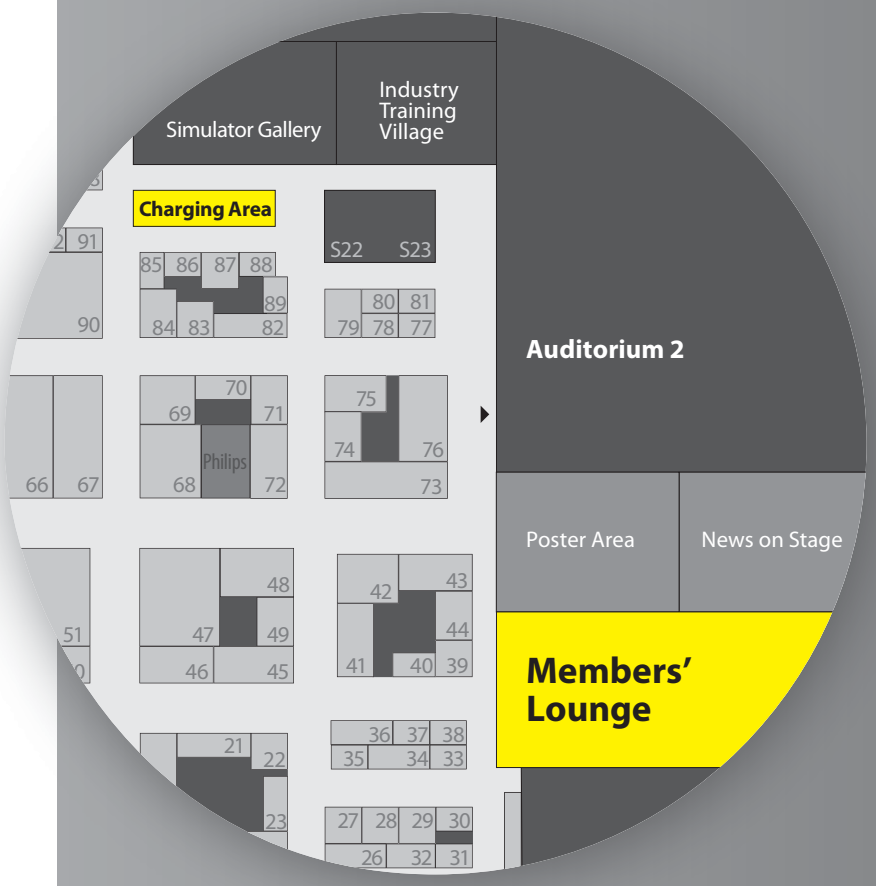


Fig. 5: Tunnelled drainage catheter placed into the peritoneal cavity in a patient with malignant ascites.



Looking after our Members!

A congress as big as CIRSE can be hectic, and we are keen to provide our members with a space where they can rest and recharge between sessions.

The Members' Lounge offers just this, with complimentary coffee and lunch, as well as a strong wireless internet connection and plenty of seating.

You can find it on the entrance level, next to Auditorium 2 and the Poster Area.

Charging Stations

Once you've recharged your own batteries, take the opportunity to charge your phone – several charging stations will be available outside Auditorium 2 and next to the society booths.

Balloon angioplasty of the central outflow venous system

Panos M. Kitrou, EBIR

Don't miss it !
Dialysis masterclass
Focus Session
Monday, September 9, 10:00-11:00
Room 116

By definition, central veins of the upper part of the body are considered the veins distal to the junction of the axillary vein with the cephalic arch i.e. the subclavian vein, the brachiocephalic vein and the superior vena cava [1].

Although an incidental finding in many cases, central venous stenosis (CVS) could become symptomatic resulting not only in inadequate dialysis performance, but also in several other clinical findings including, but not limited to, ipsilateral neck, arm or breast swelling [2]. Prior insertion of foreign materials, mainly central venous catheters, accompanied by the actual use of the access circuit for dialysis, are the main reasons leading to stenosis of central veins in dialysis patients [3]. Symptom occurrence constitutes the absolute reason for treating a central venous stenosis. Treatment of a concomitant stenosis within the circuit may result in symptomatic central venous stenosis unmasking as described by Ehrie et al.[4].

The standard of practice for interventional procedures is conventional angioplasty. Although successful, angioplasty is not durable, with patency rates as low as 28.9% at six months and 25% at 1 year; doubling when high-pressure balloons are utilised [5,6]. For a successful angioplasty result, vessel sizing is crucial. As conventional ultrasound measurements do not apply for central vein diameter calculation and intra-vascular ultrasound has limited use in everyday practice due to cost, the majority of operators will rely on digital subtraction angiography (DSA) and visual estimation. Additionally, a residual stenosis of <30% will define a successful mechanical outcome. However, such a subjective approach is highly influenced by the inability of DSA to properly evaluate luminal diameter due to turbulent flow at the edge of the vessel and the presence of parietal flow; which together with the large fluctuations in intra-thoracic pressures during expiration and inspiration, can highly affect a proper vessel diameter evaluation.

Indirect signs could then define a successful angioplastic result. Complete balloon effacement during angioplasty, disappearance of venous tributaries, and direct antegrade flow during the final angiogram are valid indirect signs. The most critical sign of angioplasty, however, is patient discomfort, that will in the majority of cases define the maximum balloon size. Immediate elastic recoil is another possible problem in central vein treatment. A recent publication by Rajan et al. however, concluded that elastic recoil, although a common finding in vascular access (as high as 16%, fifteen minutes following intervention) does not significantly affect primary patency [7].

Drug-coated balloons (DCB) have been proposed as a tool to decelerate the process of restenosis and hence increase primary patency. In a proof-of-concept randomised controlled trial by our department, a significant difference was observed in favour of DCB angioplasty when compared with plain balloon angioplasty in a clinically assessed intervention-free period (PCB group: 179 days vs. CBA group: 124.5 days, P=0.026) [8].

Bare metal stenting (BMS) is proposed as a bail-out option where restenosis occurs less than 3 months after CBA, with assisted patency rates between 33-56% at 1 year. SIR guidelines published in 2016, however, give a benefit on the use of covered stents over BMS in central veins (12-month primary patency: stents, 34% vs. covered stents, 54%) [9].

In this session, an overview of the available guidelines regarding balloon angioplasty will be described together with an update on the most important studies available. Special emphasis will be given to the symptoms, the different treatment options and devices, while complications will also be discussed.

Panagiotis M. Kitrou
(EBIR)
University of Patras
Patras, Greece

Panos Kitrou is a consultant interventional radiologist at Patras University Hospital, Greece. He completed his PhD focusing on interventional radiology at the University of Patras in 2013. From there his career took him to London, where he was an IR clinical fellow at Guy's and St. Thomas' NHS Foundation Trust. Returning to Greece and to Patras, completed his post-doctoral work at the University of Patras' Department of Interventional Radiology. He has published more than 40 scientific papers with main focuses including dialysis, PAD, and interventional oncology. He was nominated for the Editor's Award for Distinguished Clinical Study in Vascular and Interventional Radiology by JVIR in both 2015 and 2017, and in 2017 he was a Distinguished Reviewer for CVIR.

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Important Travel Notice: September 11

Please note that September 11 is Catalonia's national holiday. It may be more difficult than usual to get around the city, as public ceremonies will be going on throughout the day.

Traditional celebrations will take place throughout the morning in the area surrounding the Arc de Triomf.

Additionally, a mass demonstration will take place in the afternoon between approximately 15:30-19:00 in the Plaça d'Espanya area, including Paral·lel, Creu Coberta, Tarragona, Mª Cristina, Gran Via and Passeig de Gràcia. The flow of traffic and density of public transit in these areas and their surroundings will be significantly impacted.

The city police recommend using the ring route to more easily get around during this time. Delegates should allow ample transport time if they plan to connect to the airport on September 11.

CIRSE academy

Which CIRSE Academy course is depicted in the anagram below?

Avatar Muscular

Email the answer to **academy@cirse.org** by Thursday, September 12 for your chance to win a free CIRSE Academy course!

Abbott

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DIABETES IS AFFECTING 425 MILLION PEOPLE AROUND THE WORLD[1]

141 MILLION 25-64 YEARS

61 MILLION 65-90 YEARS

IT IS ESTIMATED THAT OVER 200 MILLION PEOPLE SUFFER FROM PAD[2]

30 SEC

EVERY 30 SECONDS PAD IS LEADING TO AMPUTATIONS WORLDWIDE[3]

MANY AMPUTATIONS CAN BE AVOIDED

Diabetes Mellitus is the fastest growing health problem worldwide[1] and raises the risk of **Peripheral Artery Disease (PAD)**[2], which can lead to lower limb amputations[4]. Abbott offers a **comprehensive portfolio** of products that can help avoid many amputations and guide patients on a path to **keep on walking.**

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VASCULAR MIMETIC IMPLANT
Supera™ Stent

VESSEL CLOSURE
Perclose Proglide™
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1. International Diabetes Federation, Diabetes Atlas - 8th edition 2017. 2. Fowkes F. G. et al Comparison of global estimates of prevalence and risk factors for peripheral artery disease in 2000 and 2010: a systematic review and analysis. Lancet 382, 1329-1340 (2013). 3. Yazdanpanah. et al Literature review on the management of diabetic foot ulcer. World J Diabetes, 6(1):37-53 (2015). 4. Moxey P.W. et al Lower extremity amputations: a review of global variability in incidence. Diabet. Med. 28, 1144–1153 (2011).

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Drug-coated balloons in 2019

Marianne Brodmann

Don't miss it !
SFA – the unsolved question: angioplasty vs. stent
Expert Round Table
Monday, September 9, 16:15-17:15
Room 112

Marianne Brodmann
University Clinic Graz
Graz, Austria

Currently the head of the Clinical Department of Angiology at Graz's University Clinic of Internal Medicine, Prof. Brodmann is well-known for her expertise in vascular sonography and her work on perfusion models for isolated perfusion of the extremities (mouse model). Following her medical studies at the Karl Franzens University Graz, she completed internal medicine and angiology residencies in the same city. Since 2003, she has been the head of clinical research at Division of Angiology and head of the peripheral catheter laboratory. She has served on many national and international societies, including as President of the Austrian Society of Angiology (ÖGA) and as a National Delegate of the International Union of Angiology, as well as a member of the CIRSE, LINC and TMT faculties.

Peripheral arterial disease (PAD) is an increasing burden, in Europe and worldwide. This is due to increasing risk factors, which cause the late stage of atherosclerotic disease: PAD. We all know that diabetes, obesity, hyperlipidemia and hypertension are increasing, and smoking is not decreasing.

Patients need to be treated with regard to be able to perform their daily routine if they are claudicants and, in patients presenting with critical limb ischaemia, to save their legs. This goes beyond a quality-of-life issue: we know that patients who are able to walk without restriction can reduce their risk of cardiovascular death.

As patients with PAD have so many co-morbidities, they are usually not ideal candidates for open surgery. Endovascular therapies have thus increased in numbers and are the preferred treatment option for these patients.

Different vessel beds need different treatment strategies. So far, we have found effective solutions for the pelvic vessel bed, but everything beyond this was a matter of investigation.

The main focus of endovascular revascularisation in PAD patients is undoubtedly the femoral popliteal region. In this area the standard procedure, 'plain old balloon angioplasty', has not been able to produce 12-month results better than around 50% with regard to primary patency. Primary stenting with bare-metal stents improved the 1-year results, but if in-stent restenosis occurs, this is a hard issue to overcome.

In the coronary sphere, drug-coated technologies are the first-line therapy, namely drug-eluting stents. In PAD, especially in the femoral-popliteal segment where stents should be avoided, drug-coated-balloon technologies have been evaluated for the last 15 years. After encouraging small first-in-human studies, the innovative concept of large randomised controlled trials (RCTs) in PAD has led the way to a new concept.

Drug-coated balloons have not only been declared as treatment of choice in femoral-popliteal lesions, they have been adopted quickly into our daily routine.

The objective outcomes of the first RCTs confirmed the proof of concept: a high primary patency after 12 months (best ever, with approx. 90%), low clinically driven target lesion revascularisation rates after 12 months, a high safety profile regardless of the drug dosage. Long-term follow-up confirmed this promising data.

The greatest advantage of this technology is that it is an easy-to-handle and therefore easily applicable technology, making it a straightforward addition to each cathlab. Physicians using this technology do not need extended extra training to be able to apply adequate treatment.

The second biggest advantage is the reduced necessity of bail-out stenting, so a 'leave nothing behind' strategy can be followed.

This promising and already-applied treatment concept was questioned by a paper in December 2018, which provided a meta-analysis of all drug-coated technologies which have produced published data.

The main conclusion of this meta-analysis of Dr. Katsanos was that there is a mortality signal after long-term follow-up if patients are treated with drug-coated technologies. The second conclusion was that this signal is dose related.

As a consequence of this publication, the FDA issued a letter to health care providers and physicians, trials were stopped and an FDA panel was held in June 2019.

In preparation for this, all industry players who have performed RCTs on drug-coated technologies in the past provided the FDA panel with patient-level data analysis, performed by independent institutions, and reviewed publications. Besides that, independent investigators looked at large sets of Medicare data on patients treated with drug-coated technologies.

The conclusion of all these analyses is that there is higher mortality, but it is not statistically significant. There appears to be no causal relationship with paclitaxel. Co-founders for increased mortality are higher age, renal insufficiency and CV morbidities. The paclitaxel dose was not associated with mortality.

Another eye-catching finding was that the better the follow-up for all treatment arms, the less difference could be found with regard to diverse different modalities. In the Japan InPact trial, for example, there was a consistent follow-up for both groups, DCB and POBA, over the follow-up period and no difference in mortality could be found. A possible explanation for this finding is that the better these severely diseased patients are followed, the higher the possibility to find co-morbidities, which need to be treated to provide a better outcome. Besides that, better risk prevention regarding adherence to antiplatelet therapy, lipid-lowering drugs and further more could be addressed at follow-up visits and can influence outcome.

The FDA panel has not issued a final statement so far, but a communication issued after the panel suggested that trials which are ongoing be continued, and encourage industry and investigators to provide long-term follow-up data on patients investigated so far. A further suggestion was to continue to use drug-coated technologies in patients at high risk of restenosis, which is every patient with a lesion beyond the iliac region.

The main impact of this story will be that in the future, we have to provide long-term data on patients treated with different devices to provide data on the efficacy-safety ratio.

Drug-coated/eluting technologies are indeed needed to treat the underlying disease, which is atherosclerotic disease at its most insidious.

BURNING ISSUES

CIRSE **Radiation Protection**

Burning issues in radiation protection: critical dose levels and substantial radiation dose

Interventional radiologists are exposed to high levels of radiation in daily practice and therefore face particular health risks. Join us at the Radiation Protection Pavilion and learn how to reduce and protect against exposure as well as the health hazards linked to high levels of occupational exposure to radiation with our best-practice guides and information materials; or take a seat and listen to a brief talk hosted by our Subcommittee or industry partners.

Today's RPP Radiation Safety Talks

	Time	Radiation Safety Talks	Speaker
MON SEPT 9	09:30 – 09:45	Radiation protection issues in transhepatic interventions	B. Gebauer *(Berlin/DE)*
	09:45 – 10:00	Dose management and quality enhancement capabilities of Digital Variance Angiography	J. Kiss *(Budapest/HU)*
	11:00 – 11:15	The benefits derived from the use of dose monitoring and management systems	G. Bartal *(Kfar-Saba/IL)*
	11:15 – 11:30	Image quality based dose regulation – how an innovative approach has changed my daily practice	B. Meyer *(Hannover/DE)*
	12:30 – 12:45	IAEA perspectives of radiation protection in fluoroscopically guided interventions	J. Vassileva *(Vienna/AT)*
	12:45 – 13:00	Peak Skin Dose as trigger level to implement dose optimization during embolisation procedures and support patient follow up	A. G. Rampoldi *(Milan/IT)*
	13:00 – 13:15	Radiation protection in percutaneous vertebral augmentation	K.E. Wilhelm *(Bonn/DE)*
	13:15 – 13:30	Using simulation to teach basic C-arm skills	Z. J. Haskal *(Charlottesville, VA/US)*
	13:30 – 13:45	IAEA eLearning tools: How to improve radiation protection of patients and staff	J. Vassileva *(Vienna/AT)*
	13:45 – 14:00	What you do affects your radiation exposure	F. Celén *(Billdal/SE)*

IDEAS 2019

Training and skills for optimal radiation protection

Elias Brountzos, EBIR

Don't miss it !
Radiation exposure: are we doing enough?
Focus Session
Tuesday, September 10, 08:30-09:30
Auditorium 2

Recent advances in medical imaging and interventional tools have led to a significant increase in the number and complexity of interventional radiology procedures. Interventional procedures usually require prolonged fluoroscopy times and a large number of cine acquisition series, delivering high radiation doses both to patients and staff. Therefore, there is increasing concern about the occurrence of deterministic and stochastic adverse effects. A number of studies have reported radiation-induced skin injuries in patients (including erythema, epilation, moist desquamation and dermal necrosis) and radiogenic cataracts among interventional radiologists performing fluoroscopy-guided procedures [1-3]. However, it has been reported that most of the time, the occurrence of the aforementioned adverse effects is caused by insufficient knowledge regarding radiation protection regulations and lack of radiation protection culture.

Endovascular aortic repair (EVAR) has become the most common procedure for the management of abdominal aortic aneurysm (AAA) in recent years. Despite the undisputed advantages of the technique, EVAR is associated with high radiation exposure. According to a review study, the mean radiation exposure to patients is approximately 20 mSv (range: 0.3–1000 mSv) while the radiation exposure to staff ranges from 0 to 600 μSv per procedure [4]. Moreover, an interesting article, based on γ2AX foci analysis for the detection of DNA breaks, revealed radiation-induced DNA damage in operators performing B/F-EVAR (branched endovascular aortic repair/fenestrated endovascular aortic repair), setting the alert for radiation dose reduction [5].

There are various ways to ensure radiation protection in the interventional suite, including optimal acquisition parameters and good technical practices as presented in Fig. 1. Among these, training is considered one of the most efficient ways for achieving radiation dose management and radiation safety. CIRSE and SIR have published occupational radiation protection guidelines in interventional radiology [6] and endorsed interventional personnel visiting and exploring the free training programmes offered by the International Atomic Energy Agency [7].

With the exception of radiologists, the majority of physicians performing fluoroscopy-guided procedures have not received any specific training on radiation protection. Additionally, several studies have shown that interventional personnel is not aware of the radiation risk from the interventional procedures, the level of radiation dose that received and the management of special population groups such as children and pregnant women. It is therefore evident that there is poor knowledge about radiation and associated hazards among medical staff, highlighting the need for the establishment of a robust radiation protection training programme.

Training is defined as the continuous acquisition of knowledge, skills and attitudes through learning that results in improved efficiency. The objectives of radiation protection training are to:

- Enhance radiation risk awareness
- Ensure that doses are kept as low as reasonably achievable (ALARA)
- Minimise the harmful effects of ionising radiation
- Reduce incorrect practices
- Provide a safe work environment

There are various training methods that can be used including lectures, web-based programmes and hands-on practice in the interventional suite. In recent years, radiation protection simulators have been introduced into healthcare training programmes in an effort to enhance knowledge, skills and abilities. Simulation training provides a virtual environment of live practical training by replicating real work experiences. Radiation protection simulation training allows trainees to learn radiation dose strategies and comprehend the factors that affect radiation dose and image quality by providing live information on radiation dose in a radiation-free environment.

Radiation protection training and education is addressed in the new European Directive 2013/59 Euratom [8]. The issue of education on radiation protection is presented more extensively in relation to the previous Directive 97/43 Euratom and it is addressed not only to the practitioners but the referrers as well. The new Directive, inter alia, reports that ''Member States shall ensure that practitioners and the individuals involved in the practical aspects of medical radiological procedures have adequate education, information and theoretical and practical training for the purpose of medical radiological practices, as well as relevant competence in radiation protection'' and additional that ''Member States shall ensure that continuing education and training after qualification are provided and, in the special case of the clinical use of new techniques, training is provided on these techniques and the relevant radiation protection requirements''. According to the new requirements it is also necessary for the practitioner or referrer to provide information to patients regarding the benefits and risks associated with the radiation dose from the medical exposure. Therefore, all physicians performing image-guided procedures should have adequate knowledge on radiation protection aspects.

In 2014, the European Commission published the *'Guidelines on radiation protection education and training of medical professionals in the European Union (Radiation Protection No 175)'*, which provide detailed knowledge and skill requirements for health care professionals, including interventional radiologists as well as non-radiological specialists employing ionising radiation in intervention techniques [9]. In particular, a radiation protection training programme should provide knowledge concerning radiation physics, fluoroscopy equipment, the biological effects of ionising radiation, radiation protection principles, regulations and quality assurance programmes. According to Radiation Protection No 175, interventional radiologists should have the necessary skills to:

- Optimise interventional protocols according to the ALARA principle
- Use technical features to reduce radiation dose
- Choose the best comprise between risk-benefit and radiation dose-image quality
- Supervise the use of personal protective equipment
- Support monitoring, evaluation and follow-up
- Estimate effective dose and patient risk
- Apply the relevant regulations

Based on the training programme introduced by Radiation Protection No 175, it would be essential for each country to establish its own framework of continuing radiation protection education for the certification of physicians employing ionising radiation.

According to the literature, radiation protection training reduces radiation dose for both patients and staff, enhances the use of leaded eyeglasses and shields, improves operating practices and facilitates compliance with guidelines. Indeed, in some cases, the occupational dose decreased by approximately 55% after a radiation protection training programme. Training is the key component of implementing radiation protection and consequently it should be an integral part of the interventional radiologist's education on a periodic basis.

Elias Brountzos
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Prof. Elias Brountzos completed his medical degree at the National and Kapodistrian University of Athens (NKUA) in 1982 before moving on to the University of Patras to complete his training in radiology. Following two fellowships in the US, he returned to Greece and to NKUA as an associate professor, later becoming a full professor in 2009. He has authored or co-authored more than 150 publications, served as a reviewer for several journals, and is a member of many societies both local and international. He is a long-time active member of CIRSE and has served on the Standards of Practice Committee, the Scientific Programme Committee, the Executive Committee, the Executive Board, and as President of CIRSE from 2015-2017.

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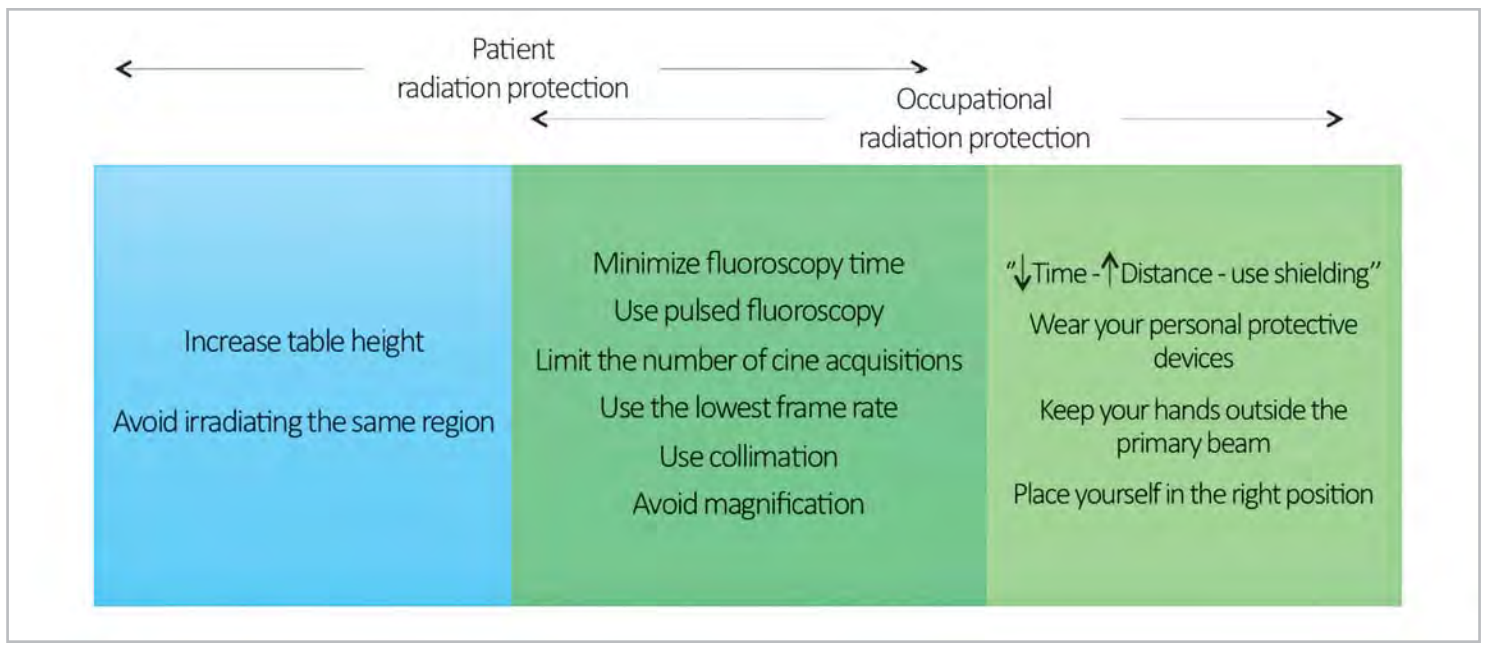

Fig. 1: Practical radiation protection methods in fluoroscopy-guided procedures for patients and staff

Congratulations to this year's CVIR award winners!

The prestigious **"2019 Editors' Medal"** was awarded to:
Martijn R. Meijerink and Robbert S. Puijk et al.
"Radiofrequency and Microwave Ablation Compared to Systemic Chemotherapy and to Partial Hepatectomy in the Treatment of Colorectal Liver Metastases: A Systematic Review and Meta-Analysis"

Most Cited Article: Review Article
Anil Nicholas Kurup et al.
"Avoiding Complications in Bone and Soft Tissue Ablation"

Most Cited Article: Scientific Paper
Umut Ozyer
"Transcatheter Arterial Embolization with N-Butyl-2-Cyanoacrylate in the Management of Spontaneous Hematoma"

Most Cited Article: CIRSE Standards of Practice
Dimitrios K. Filippiadis et al.
"CIRSE Quality Assurance Document and Standards for Classification of Complications: The Cirse Classification System"

Most Downloaded Article
Anna-Maria Belli & Meridith Englander
"The Female Threat"

Article with the Best Media Performance
Sanne M. Schreuder et al.
"Predictive Parameters for Clinical Outcome in Patients with Critical Limb Ischemia Who Underwent Percutaneous Transluminal Angioplasty (PTA): A Systematic Review"

Outstanding Service to the Journal for the most reviews carried out in 2018
Kyung Cho, University of Michigan, USA
Ali Alsafi, Imperial College Healthcare NHS Trust, London, UK

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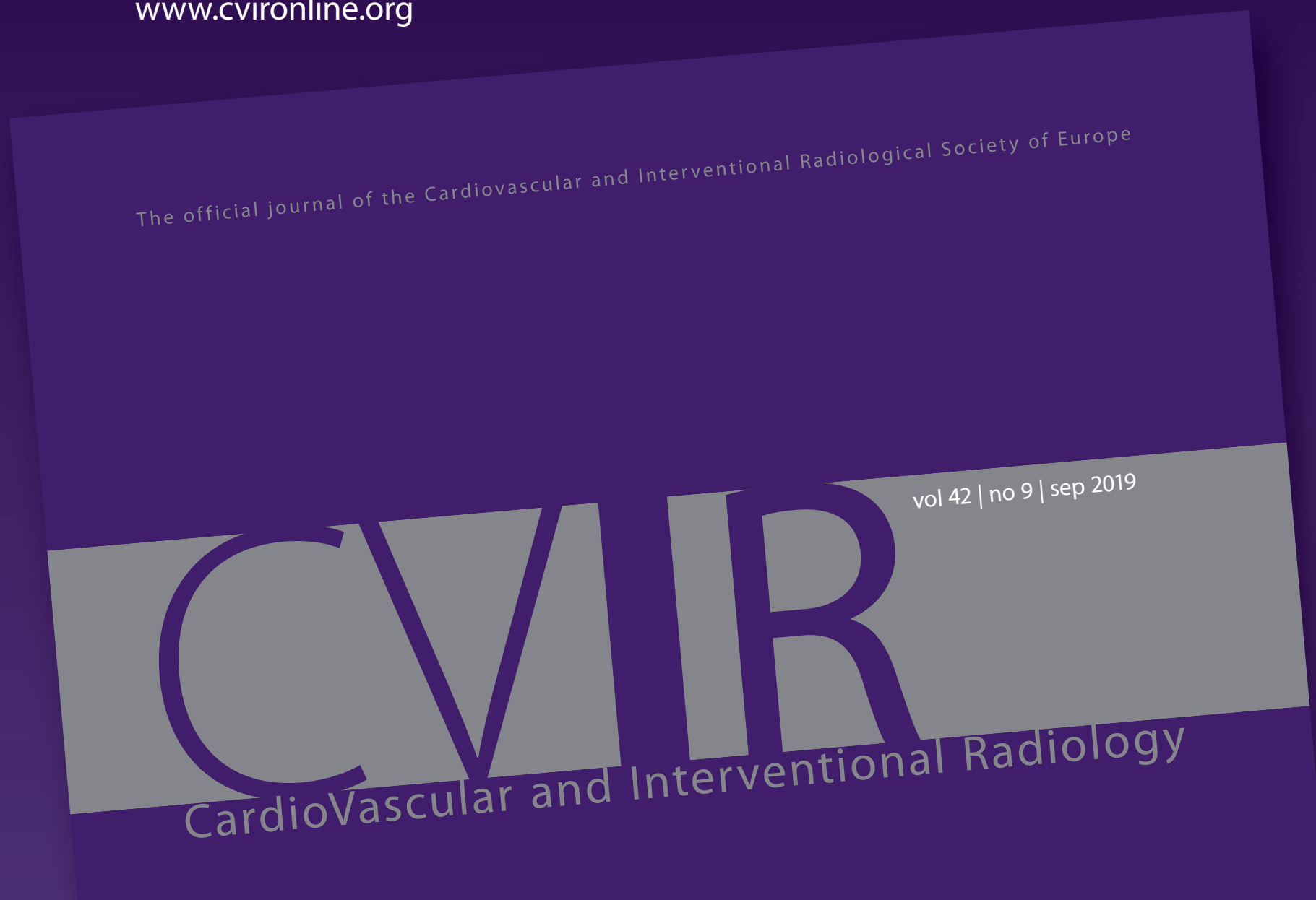

Don't miss it !
Medical therapy to improve outcomes of PAD interventions
Focus Session
Monday, September 9, 10:00-11:00
Room 115

Single vs. double antiplatelet therapy: any evidence?

Nikolaos D. Ptohis, EBIR

Nikolaos D. Ptohis
(EBIR)
G. Gennimatas General Hospital of Athens
Athens, Greece

Nikos Ptohis began his career in medicine the University of Patras in Greece, where he completed his medical studies in 2000. In 2007, he completed the vascular and interventional radiology residency programme at the National and Kapodistrian University of Athens, where he later stayed on as a consultant interventional radiologist. He obtained his MSc diploma in 2008 and a PhD in interventional radiology at the University of Athens in 2007. He has been a consultant interventional radiologist at G. Gennimatas General Hospital of Athens since 2011, and has completed fellowships in Austria and the USA during this time, and served as a consultant IR in the UK. He is an EBIR-certified interventional radiologist and author or co-author of more than 45 papers in international peer-reviewed journals.

Definition and incidence of PAD

Peripheral artery disease (PAD) is estimated to affect more than 200 million people worldwide (incidence 3-12%) and has high morbidity and mortality rates [1]. According to the European Society of Cardiology, PAD should not be restricted to lower-extremity artery disease (LEAD), as it also includes the carotid and vertebral, upper extremities, mesenteric and renal arteries [2].

Comorbidities

Patients with PAD are at increased risk for major adverse cardiac events (MACE) [myocardial infarction (MI), ischaemic stroke and cardiovascular (CV) death] and major adverse limb events (MALE) (major amputation and acute limb ischaemia). Across the spectrum of symptomatic PAD, annual rates of MACE are 4-5%, and rates of MALE are 1-2% [3].

Indications for individualisation of therapy

It is well established that platelet activation and aggregation is associated with these adverse events, setting antiplatelet therapy as a cornerstone in the treatment of patients with PAD. Additionally, evidence suggests individualisation of antiplatelet therapy relative to clinical presentation [3]. Multiple antiplatelet agents have been studied in the PAD population, including aspirin, a combination of aspirin and dipyridamole, clopidogrel, ticagrelor, cilostazol and vorapaxar [3].

Antiplatelet therapy in patients with LEAD, according to the 2017 ESC Guidelines on the Diagnosis and Treatment of Peripheral Arterial Diseases

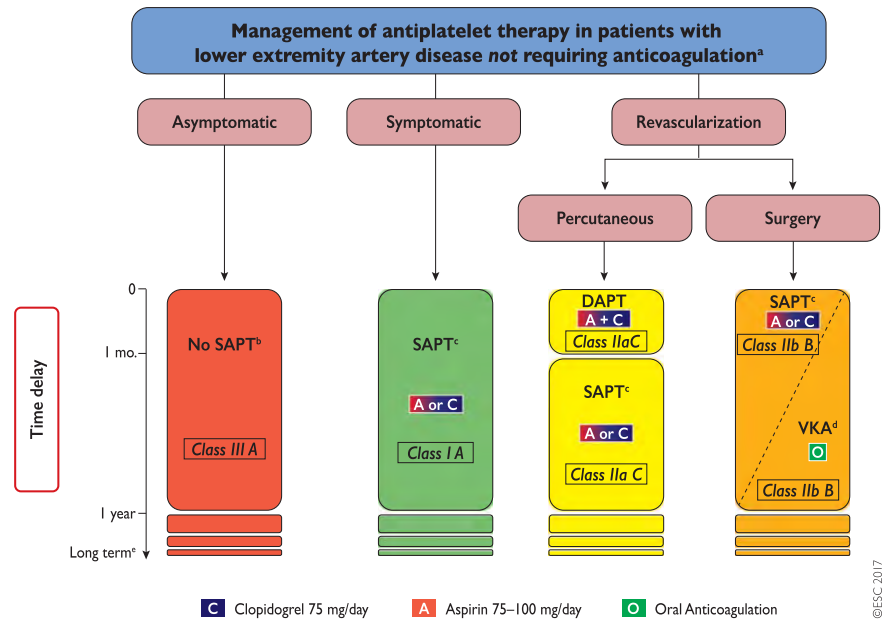

Fig. 1: 2 Antiplatelet therapy in patients with LEAD [2].

DAPT = dual antiplatelet therapy; SAPT = single antiplatelet therapy; VKA = vitamin K antagonist.

[a] : e.g. concomitant AF or mechanical valve prosthesis.
[b] : SAPT should be considered if there is another concomitant atherosclerotic disease (e.g. coronary artery disease).
[c] : DAPT may be considered in patients with recent acute coronary syndrome and/or percutaneous coronary intervention (<1 year), stenting of the last patent coronary artery, multiple coronary vessel disease in diabetic patients with incomplete revascularisation.
[d] : Evidence is weak and bleeding doubles as compared to SAPT.
[e] : Stands for as long as it is well tolerated.

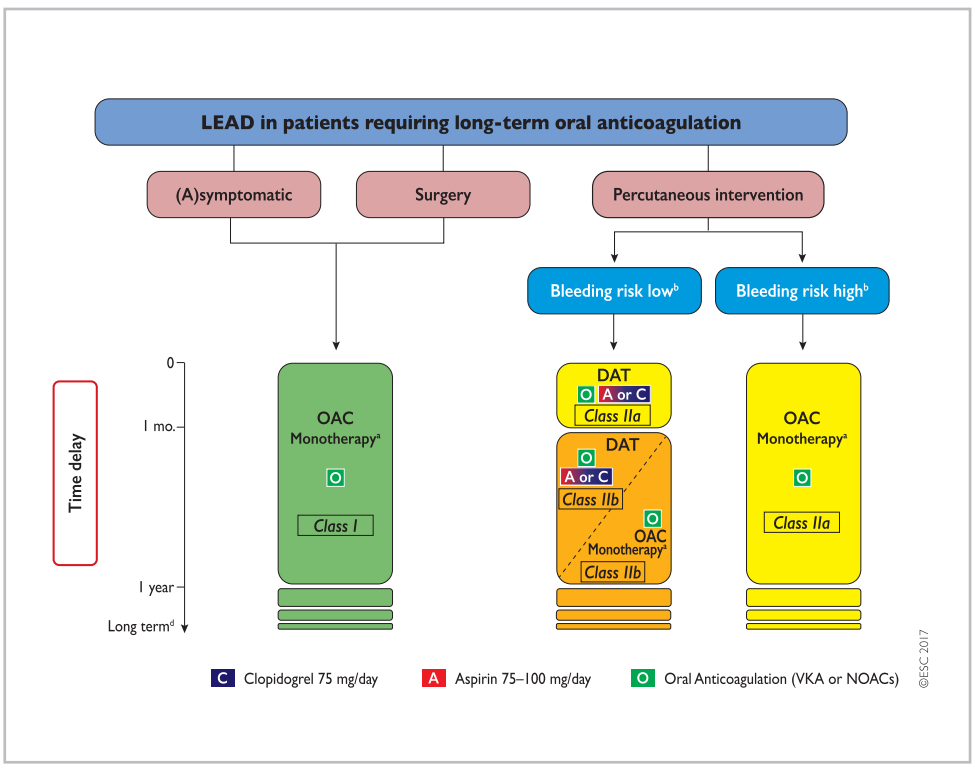

Fig. 2: Antithrombotic therapy in patients with LEAD requiring oral anticoagulation [2].

ACS = acute coronary syndrome; CAD = coronary artery disease; CLTI: chronic limb-threatening ischaemia; DAT = dual anti-thrombotic therapy; LEAD = lower extremity artery disease; NOACs = non-vitamin K oral anticoagulants; OAC = oral anticoagulation; VKA = vitamin K antagonist.

[a] : DAT may be considered in high-risk ischaemic patients defined as prior stent thrombosis, acute limb ischaemia on OAC and concomitant CAD (recent ACS, stenting of the last patent coronary artery, multiple coronary vessel disease in diabetic patients with incomplete revascularisation).
[b] : Compared to the risk for stroke/CLTI due to stent/graft occlusion.
[c] : Stands for as long as it is well tolerated.

Antiplatelet therapy in patients with CAD according to the 2017 ESC Guidelines on the Diagnosis and Treatment of Peripheral Arterial Diseases

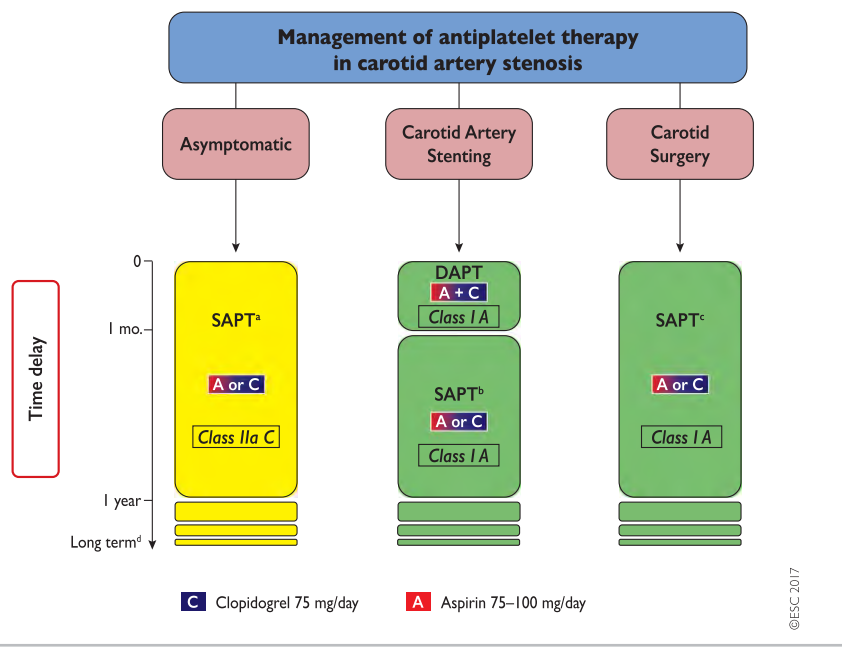

Fig. 3: Management of antithrombotic treatment in patients with carotid artery stenosis [2].

DAPT = dual antiplatelet therapy, a daily combination of aspirin (75–100 mg) and clopidogrel (75 mg); CAS = carotid artery stenting; SAPT = single antiplatelet therapy; TIA = transient ischaemic attack.

[a] : At the exception of patient at very high bleeding risk.
[b] : DAPT may be used if another indication supersedes that of carotid artery stenting such as acute coronary syndrome or percutaneous coronary intervention of less than 1 year.
[c] : In case of recent minor stroke or TIA. A loading dose of aspirin (300 mg) and/or clopidogrel (300/600 mg) is recommended at the acute phase of stroke/TIA or during CAS.
[d] : Stands for as long as it is well tolerated.

Primary prevention of stroke or TIA

According to R. Melfi and E. Ricottini, the benefit observed in terms of reduction of ischaemic events balances the risk of bleeding and haemorrhagic stroke associated with the daily use of aspirin, if the risk of CV events is high [14]. Antiplatelet agents, other than aspirin, have still no evidence of benefit in asymptomatic patients with carotid stenosis [14].

Secondary prevention of stroke

Regarding secondary prevention, a systematic review of literature suggested that aspirin alone, combination of aspirin and dipyridamole, clopidogrel, and triflusal could reduce the relative risk of stroke after a first event. In particular, the combination of aspirin and extended-release dipyridamole reduces the relative odds of stroke, MI or vascular death by about 18% (OR 0.82, 95% CI: 0.74–0.91) compared with aspirin alone, without causing more bleeding events [10]. Early administration of aspirin in the acute phase of stroke or TIA was also shown to be safe and effective [10]. In the same meta-analysis, cilostazol was also proven to be effective in reduction of major vascular events when compared to placebo [4.2% vs. 6.8% (placebo); RR 0.61, 95% CI: 0.41–0.91]. In the CARESS trial, the efficacy of DAPT (aspirin plus clopidogrel) was compared to aspirin alone, in reducing asymptomatic embolisation in patients with recently symptomatic carotid stenosis, measured with microembolic signals (MES) detected by transcranial Doppler ultrasound. Patients treated with DAPT had lower MESs (RR 39.8%, 95% CI, 13.8–58.0, P=0.0046), fewer MESs per hour (95% CI: 31.6–78.2, P=0.0013) and fewer strokes compared to patients treated with aspirin alone in the first week after stroke [11].

Acute treatment of TIA or minor stroke

The CHANCE trial, enrolling patients with TIA or minor stroke treated within 24 hours after the onset of symptoms, showed that DAPT was better than aspirin alone in reducing the risk of stroke in the first 90 days (8.2% vs. 11.7%; HR 0.68, 95% CI: 0.57–0.81, P<0.001) and did not increase the risk of haemorrhage (0.3% vs. 0.3%, P=0.73). There was no different incidence of moderate to severe haemorrhage in patients treated with aspirin monotherapy versus DAPT [13].

Conclusions

Despite an abundance of data demonstrating efficacy of antiplatelet therapy in coronary artery disease and cerebrovascular disease, there is a paucity of clinical information, clinical guidelines and randomised controlled studies in the PAD population. Hence, data on antiplatelet therapy in coronary interventions is frequently extrapolated to peripheral interventions. Another challenge that necessitates further trials specifically focused on different subsets of populations is related to the extreme variability of PADs scenarios: stable and unstable conditions, different treatment options (medical, endovascular and surgical), variable extension and localisation of artery disease.

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CIRSE Clinical Research
your partner in research

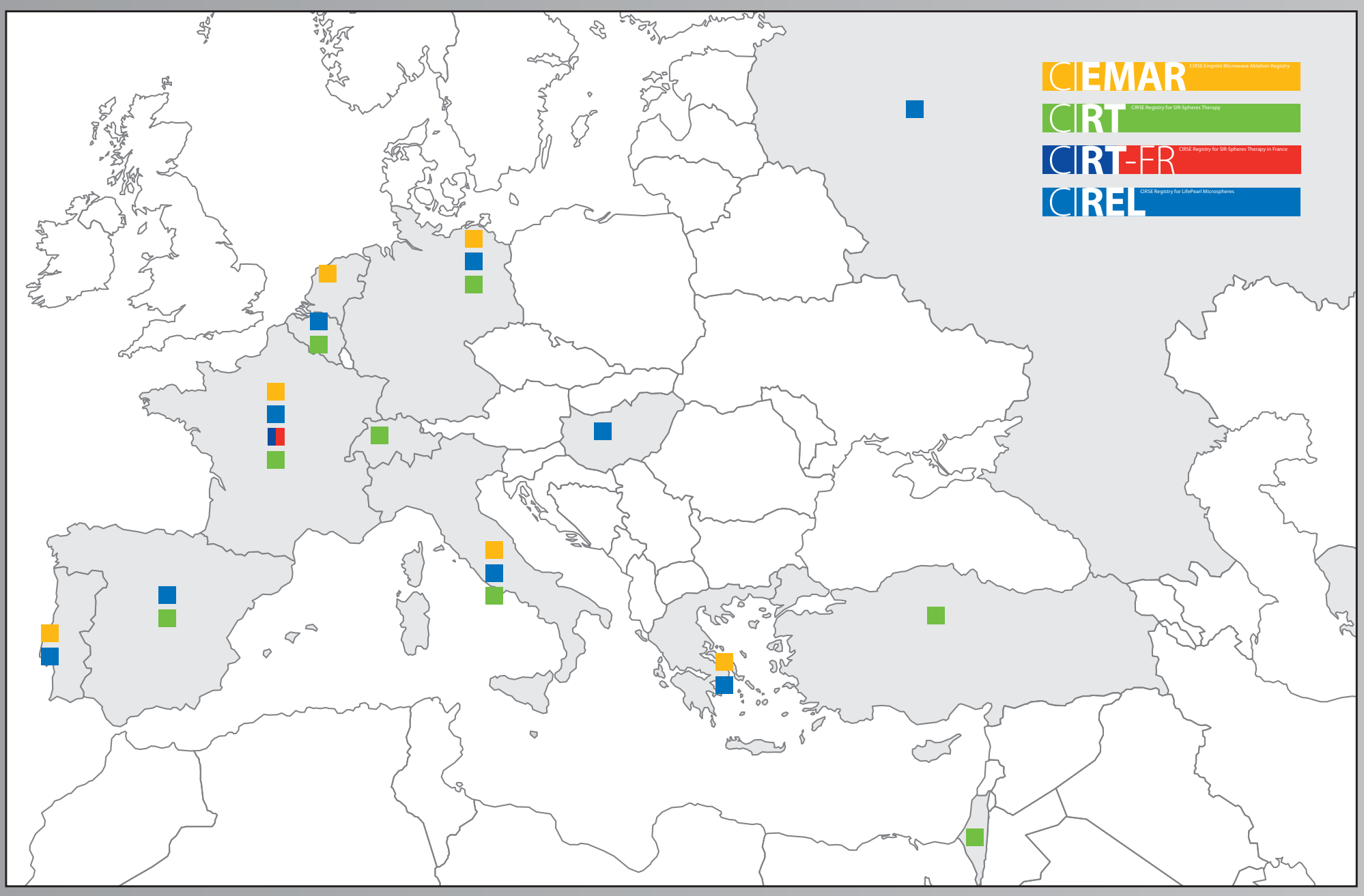
Research is a key building stone of any medical specialty, and the fast pace of change within interventional radiology makes it doubly so. Starting in 2013, CIRSE has been gradually redefining its role in IR research. In addition to pursuing its conventional role of disseminator and supporter of research, the society shifted towards becoming a collector of data, by officially developing an in-house research infrastructure tailored to high-quality observational studies.

With grants by our industry partners and guided by scientific Steering Committees, the CIRSE Clinical Research Department has since then successfully designed and conducted observational studies in post-market observation as well as national reimbursement settings.

With our clinical research operations and projects, the demands on our infrastructure have grown too, and we currently face new challenges in developing our service to be able to even better meet the demands for high-quality data collection in the IR community. Stay tuned for updates in 2020 or visit the Clinical Research Booth for more information.

CIRSE Research Network

- Hundreds of hospitals across Europe and North Asia, including 60+ Hospitals currently actively participating
- 13 countries
- 3 industry partners
- Health care professionals
  a. IRs/CIRSE members
  b. other specialties/non-CIRSE members



Visit us at our booth located in the entrance hall to find out about our projects and services in IR research.

Booth in the entrance hall

CIREL

CIREL CIRSE Registry for LifePearl Microspheres

Key points
- Includes Central Image Review
- Population: all mCRC patients treated with LifePearl Microspheres
- Patient target: up to 500, 12 months minimum follow-up

Objectives
- Primary: To observe the real-life clinical application
- Secondary: To observe safety and effectiveness and Quality of Life

Multidisciplinary Steering Committee
- Co-Chairs: Prof. Philippe Pereira (SLK Kliniken Heilbronn GmbH, Germany) and Prof. Julien Taieb (Hôpital Européen George-Pompidou, France)

Status quo
- ✓ data collection ongoing
- ✓ drafting methodology paper
- ✓ preparation of publication of 50-patient interim analysis

CIRT

CIRT CIRSE Registry for SIR-Spheres Therapy

Key points
- First CIRSE-sponsored study
- Population: all indications treated with SIR-Spheres Therapy
- Patient inclusion: 1,051 patients from 8 countries

Objectives
- Primary: To observe the real-life clinical application of SIR-Spheres Therapy
- Secondary: To observe safety and effectiveness and Quality of Life

Multidisciplinary Steering Committee
- Prof. Thomas Helmberger (Städtisches Klinikum München – Klinikum Bogenhausen, Germany)

Status quo
- ✓ preparation of methodology paper
- ✓ preparation of results publication

CIRT-FR

CIRT-FR CIRSE Registry for SIR-Spheres Therapy in France

Key points
- Regulatory study in France: reports to the French ministry of health (HAS)
- Patient enrolment extended until August 2020
- Population: all indications treated with SIR-Spheres Therapy in France
- Patient target: 200-300, 24 months minimum follow-up

Objectives
- Primary: To observe the real-life clinical application
- Secondary: To observe safety and effectiveness and Quality of Life

Multidisciplinary Steering Committee
- Co-Chairs: Prof. Thomas Helmberger (Städtisches Klinikum München – Klinikum Bogenhausen, Germany) and Prof. Valerie Vilgrain (Hôpital Beaujon, France)
- National Coordinator: Dr. Olivier Pellerin (Hôpital Européen George-Pompidou, France)

Status quo
- ✓ data collection ongoing
- ✓ 30 centres included

CIEMAR Study design

CIEMAR CIRSE Emprint Microwave Ablation Registry

The CIRSE Emprint Microwave Ablation Registry (CIEMAR) will collect high quality data on microwave ablation using the Emprint Microwave Ablation System in a large multinational cohort. Design of the outcome measures was completed during the last scientific meetings around CIRSE 2019 and the database is currently being implemented by the CIRSE Clinical Research department using the OpenClinica data capturing system. With a target enrolment of 1,000 patients CIEMAR aims to be the largest data collection on MWA so far. Although CIEMAR is limited in terms of its explanatory power compared to a fully randomised controlled trial the investigators are confident that the open, observational design will allow a clinically importantt assessment of the effectiveness of the therapy outside the ideal conditions created in controlled trials, achieve sub-sets of patients large enough to provide meaningful sub-group analysis as well as exploring how variability of the deliverance of treatment in routine practice may effect outcomes.

Project Outlook

Co-chaired by Prof. Phillipe L. Pereira (SLK Kliniken Heilbronn GmbH, Heilbronn, Germany) and Prof. Thierry de Baère (Gustave Roussy Cancer Center, Villejuif, France) the CIEMAR Steering Committee is comprised of experts in the field of interventional radiology and oncologic surgery from seven different countries. CIEMAR is launched and contract negotiations will commence with centres that fulfil the selection criteria. Centres deemed suitable for participation were contacted in October 2018 to establish initial interest in the study and make contracting more efficient once the study protocol was ratified. Until the start of patient enrolment in January 2020 the CIEMAR Steering Committee will finalise the CRF and the statistical analysis plan and explore the possibility of including a cost-effectiveness analysis in the scope of CIEMAR. Patient enrolment is planned to last for two years with a follow-up period of three years.

The study is sponsored by the CIRSE Society and independently managed by the CIRSE Clinical Research Department in conjunction with the CIEMAR Steering Committee. The study is funded by a research grant provided by Medtronic, the manufacturer of the Emprint Microwave Ablation System. The project is scheduled to run until 2025.

Key points
- Planned to be the largest data collection on MWA for liver metastases
- Population: all mCRC patients treated with Emprint Microwave Ablation
- Patient target: 1,000, 12 months minimum follow-up

Objectives
- Primary: To assess the effectiveness of microwave ablation in the liver.
- Secondary: Evaluate Safety and Toxicity, Survival, Quality of Life and Health Economic aspects

Multidisciplinary Steering Committee
- Co-Chairs: Prof. Philippe L. Pereira (IR, Germany) and Prof. Thierry de Baère (IR, France)

Status quo
- ✓ Study protocol finalised
- ✓ Study launched
- Data collection to be started in January 2020

www.cirse.org/research/research-agenda/

Dinner & Farewell Party
CIRSE 2019

Tuesday, September 10

Come join us to celebrate the end of another successful Annual Congress!

The CIRSE 2019 Dinner & Farewell Party will be held at Can Travi Nou restaurant, an authentic Catalan farmhouse situated in a picturesque rustic setting. You can look forward to a delicious three-course dinner, followed by a party in the compound's beautiful garden which is sure to last until the early morning hours.

Dinner and party tickets
(include cocktail reception, dinner, complimentary drinks, entertainment): EUR 75 each

Party only tickets
(include free drinks and entertainment): EUR 25 each

Don't miss out!
Buy your tickets at the "Hotel | Social Events | City Information" desk, located in the entrance hall of the congress centre.

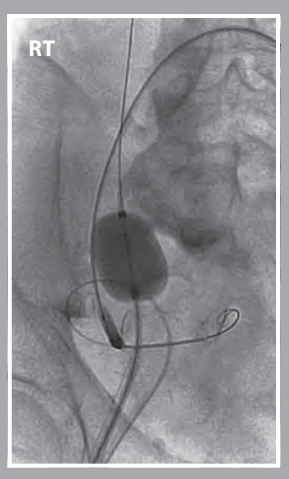
CIRSE supports compliance with ethical standards. Therefore, CIRSE emphasises that the present offer (made by Kuoni Congress) is directed to participants of CIRSE 2019 and recommends that the participants who want to accept the present offer shall bear any and all costs in this context themselves. Kindly note that entrance to the CIRSE 2019 Dinner & Farewell Party is NOT included in the CIRSE 2019 registration fee!

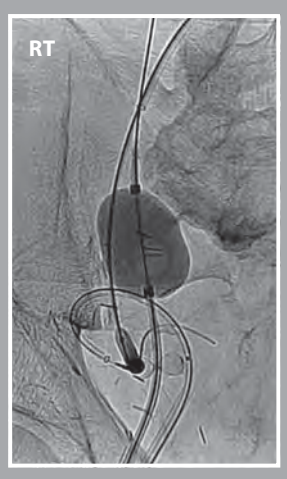
SOLVE THE CASE
and win a ticket to the CIRSE Farewell Party!

CVIR ENDOVASCULAR

These images come from an article in CVIR Endovascular.

What is this case about?





Send your answer to info@cvirendovascular.org by 17:00 today to be in with the chance of winning a ticket to the CIRSE Farewell Party.

Find out more at **www.cvirendovascular.org**

Meet your partner in IR research –

CIRSE Clinical Research

CIRSE Research Network

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providing us with ideas and benefitting from our research

Over 70 CIRSE Members/IRs
currently act as Primary Investigators in CIRSE-sponsored studies.

Our multidisciplinary Study Steering Committees
include:
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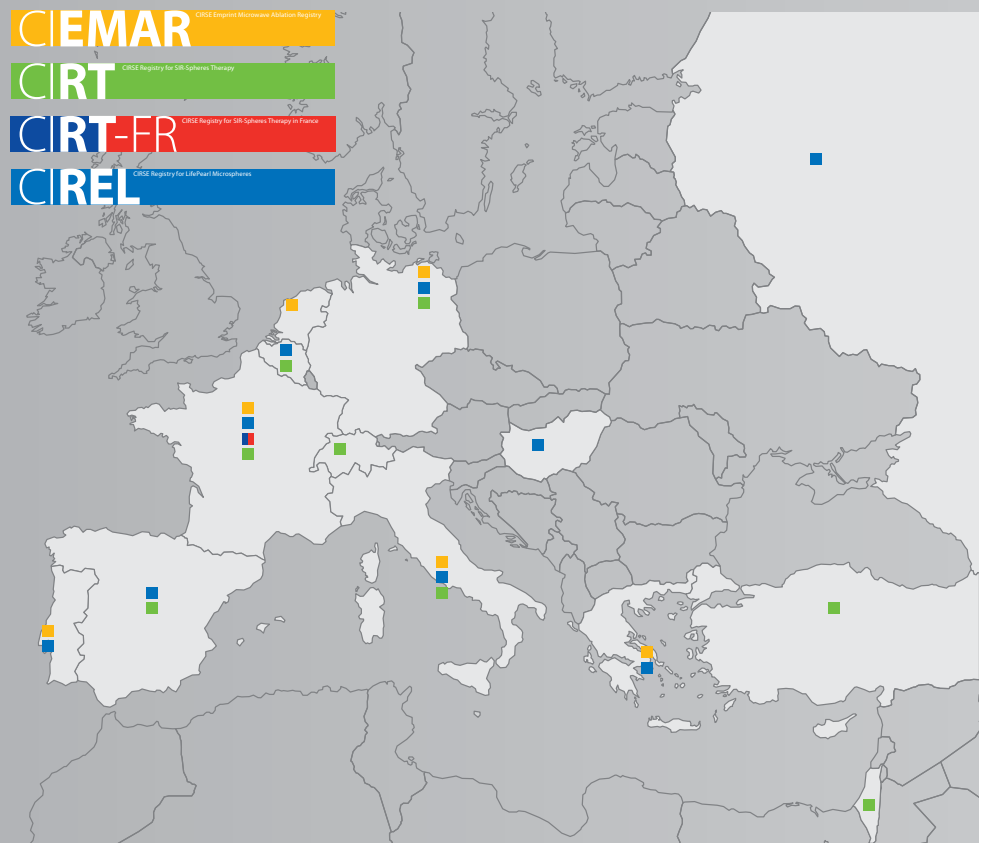
- Surgeons
- Nuclear Medicine
- Hepatologists

Over 60 Hospitals from 13 European Nations
From small, local medical centers to some of the largest full-service hospitals in Europe, wherever IR is performed in Europe, CIRSE seeks to collect data.

Medical Device Manufacturers
Our research is only made possible through the research grants provided by our trusted partners in the medical device industry.

Partners & Service Providers
CIRSE partners with prestigious academic institutions such as EORTC or FFCD and contracts high-quality suppliers to get the job done.

Initiative Overview



Visit us at our booth located in the entrance hall to find out about our projects and services in IR research.

Whether you have an idea for a project, are a current CIRSE study investigator (or would like to become one!) or work in the medical industry, we're interested to hear your unanswered questions and eager to help you find an answer.

Cardiovascular and Interventional Radiological Society of Europe CIRSE

STUDENT CORNER

Elizabeth Wenzel, CIRSE Office

Becoming an IR – an interview with ETF Subcommittee member Robyn Benz

CIRSE: Let´s start from the beginning; why did you decide to study medicine and when did you first hear about IR?

Benz: Medicine was always the last subject I would have considered studying, but after two years at a school of fine arts I was longing for a more tangible education, and so I sought guidance. We collected all the subjects that interested me – I'm not even sure how medicine got on that list. I suppose I put it there because my dad, who is a radiologist, always thought it would be the right thing for me. I was asked to cross out the subjects that interested me least and seemed the least feasible to achieve as a future career. In the end, medicine was the last remaining item on the list, so I thought I might as well give it a try. I'm not sure when I first heard about interventional radiology. My dad had told us several stories about his time in interventional neuroradiology, I suppose that was the first time.

CIRSE: What inspired you to choose IR as your future career? Have you ever regretted your decision?

Benz: I've always liked working with my hands, the fiddlier the better, and I like to "do" things. Initially, I considered going into surgery, which I didn't do for several reasons. I chose radiology because I liked the visual, analytical approach. I always had it in the back of my mind that this choice would leave the door open to IR, that seemed a good mix between the two specialities. I realised that I would have to step through that door during my fellowship in musculoskeletal radiology, when I started getting antsy after any more than two hours in front of the computer and I realised that best part of my day was when I got to perform arthrographies.

No, I don't regret my choice at all. The only moment I have a hint of doubt is during on-call duty when the phone rings at 2 o'clock in the morning or when I'm still at work very late on a Friday night. But these hints of doubt are gone instantaneously when I think of the seemingly never-ending interpretation list in diagnostics, the gratitude the patients express for helping them or even saving their lives, or the satisfaction of a complicated procedure going well.

CIRSE: What would you consider the most exciting part of your work day as an IR?

Benz: I think there a two most exciting moments in my day. The first is when I realise that the intervention is not as straightforward as foreseen and something turns into a complicated case. This is when all the creative neurons in my head start firing. The second one is when the procedure is over, everything went well and the intervention was successful, so that the patient is on his way to getting better. This fills me with a deep satisfaction and gratitude for the work I get to do.

CIRSE: As you are Swiss and performing interventional radiology in France – can you tell us more about why you decided to move from your home country? Have you trained in any other places?

Benz: During my fellowship at the University Hospital in Basel I got to work in almost all fields of IR, but some of the interventions were performed only in very small numbers. Therefore, I felt I was lacking experience in some areas of IR after my fellowship. I've always wanted to work abroad to expand my horizons and gain experience on a personal and professional level, and in Switzerland at least one year abroad is required for an academic career. So, I seized the opportunity to work with in Nice with Prof. Chevalier, who is a designated expert in the field of oncological IR, when we were put in contact.

I haven't trained in other places yet, but I will move to Montreal for another fellowship next year.

CIRSE: How many of your colleagues performing IR are women? Do you think that the IR gender gap is closing?

Benz: None of my colleagues are women, neither in Basel nor in Nice. I do hope the gender gap is closing, but I think it will take at least one or two more generations of IRs and I'm not sure if it will ever close completely.

CIRSE: What would you suggest changing in order to make the field of IR more appealing to female physicians? How is the ETF contributing to this?

Benz: The two most common reservations I hear are radiation exposure and compatibility with children and family. I think we have shown that under the condition of adequate radiation protection the former is no longer of any real concern. The latter I believe is a biological as much as an issue of society. IR teams tend to be small. Therefore, a working IR will always be bound to frequent on-call duties. Compatibility of these on-call duties with childcare requires a partner who is willing and capable to back up childcare. This is true for both men and women, but I believe it is still rooted deep in former patriarchal societies and in the thoughts of many people that childcare is bound to be more of a female responsibility. I'm not sure there is much WE can change about that. But I think it is important to rid IR off the reputation of being a male domain not meant for women. I was confronted with these prejudices quite a few times and it made me question my decision and feel not very welcome.

The ETF keeps addressing the gender issue and awareness is an important step in improvement. Within the committee there are a lot of women. Also, the committee ensures that we get a voice, as our vice-chairperson is a woman. Furthermore, I feel that some tasks are directed straight towards the female members who might be a little less fast in coming forward; I think there is some work that can be done on our side too.

CIRSE: IRs who would like to certify their expertise and demonstrate their ongoing commitment to pursuing a career in IR usually take the EBIR exam. As you have successfully passed this exam this year, can you share your experiences in preparing for the exam?

Benz: It was quite stressful. I moved to France at the end of December last year and took the exam at the end of February. It was quite difficult to prepare the exam properly, while I was starting a new life from scratch in a language I was less fluent in than I thought I was. But with the help of the teaching videos on the CIRSE webpage, I managed to learn even in moments where I was too tired to read. Nevertheless, I found it to be very satisfying to acquire structured knowledge, and I enjoyed being able to implement this knowledge immediately into my daily work. For some themes it was hard to find structured teaching material, though.

CIRSE: When did you become a member of the ETF? What would you consider is the biggest achievement made by the ETF since you joined?

Benz: I joined the ETF at the end of 2017. I think every single one of us is working hard to support young IRs on a national level, but I believe the biggest achievement was to have CIRSE offer free registration for the CIRSE congress to all IR trainees and residents who submit an abstract, whether it is accepted or not. This makes IR and the knowledge being shared by all the experienced speakers very accessible.

Info about the ETF

Not only is CIRSE catering for undergraduates, it is also engaged in supporting young IRs who are in training and pursuing their future IR career! In 2015, CIRSE established the European Trainee Forum, which is currently represented by 26 young IRs from different European countries, and which has become the voice of IRs-in-training who provide important input on IR training pathways across European countries.

The European Trainee Forum Subcommittee puts together a scientific programme tailored especially to IR trainees and invites all young IRs as well as the medical students to attend all the sessions which will discuss topics such as future IR technologies, building an IR career, clinical practice, working with medical devices or building an own start-up as IR. It also offers a series of Short Talks, which are spread across three days according to their topics. Those attending can look forward to learning more about clinical and academic opportunities in and outside the EU, getting practical career advice or obtaining insight into using social media to promote IR and their practice.

Are you about to finish your undergraduate medical degree and thinking which way you should go next? Join the ETF community and get involved in the field of IR!

www.cirse.org/trainees

be inspIRed...

Students in the Spotlight

We had a chance to speak with some of your peers about their interest in medicine and experiences studying throughout Europe. Meet today's students studying in Croatia and the United Kingdom.

Nika Jemrić
Zagreb, Croatia
University of Zagreb Medical School

CIRSE: When did you hear about IR for the first time?

Nika: I'd first heard about IR during my internal medicine rotation in nephrology. One of the patients had renal artery stenosis and was sent to interventional radiology for stenting and I was sent to observe the procedure. It was my first clinical rotation and first encounter with lead aprons and radiation. The attending doctors helped us get dressed in lead and explained the procedure. It was all very exciting.

CIRSE: Why did you decide to study medicine and why are you interested in IR?

Nika: I decided I wanted to study medicine during my first year of high school. I wanted something where I could use my abilities and gain knowledge that would do some good. As I like both science and helping others, it was best of both worlds. IR is one of the most exciting and fastest developing fields in medicine. Its connection to technology and minimally invasive nature is what drew me in the most.

CIRSE: How did you hear about CIRSE?

Nika: I heard about CIRSE through friends from medical school. A group of us decided to attend the Student Programme to learn something new and extended the trip to enjoy Lisbon in 2018. It was my first international congress and sparked my interest in IR. I realised what an amazing and broad field IR was, and how fast it was developing.

Krishanth Ganesan
Sheffield, United Kingdom
(originally from Singapore)
University of Sheffield

CIRSE: Why did you decide to study medicine and why are you interested in IR?

Krishanth: I decided to study medicine as I liked science and wanted to make an impact on patient's lives. I felt it would be meaningful to be able to do a job that can make a positive impact on people. I like IR as it seems to be the future of medicine with cutting-edge technology and is a quickly growing specialty. I enjoy anatomy and imaging and liked the idea of applying imaging for procedures.

CIRSE: When did you hear about IR for the first time?

Krishanth: I heard about IR after reading a BBC article on a shortage of "specialist surgeons" that was compromising care in the United Kingdom, and looked IR up online to learn more. I found the procedures very novel and cutting-edge. I decided to then spend some time in IR with my local department and enjoyed it.

CIRSE: What kind of exposure do you get to IR at your university and within your undergraduate studies?

Krishanth: In my university, we have a one-week radiology placement. For students in the main teaching hospital, they may be able to spend one day with vascular IR. However, most students will not get any exposure to IR throughout medical school. I am currently the president of the Radiology Society at my university and am trying to improve the awareness of IR in the undergraduate level through career talks and posting interesting cases on the society's Facebook page.

QUESTIONS OF THE DAY

Monday, September 9, 2019

Read today's Congress News and make sure that you are one of the first two students to send the correct answers to **students@cirse.org** by **14:00 today!**

Get inspIRed by reading the articles and win a voucher allowing you to choose up to 4 CIRSE Academy online courses!

1. Which cancer has been the proving ground for most immunotherapies?
2. There is a travel notice for Wednesday! What route do the police recommend you use to get around more easily?
3. PAD is an increasing burden worldwide. Name at least three factors that are contributing to this
4. Renal cell cancer is usually diagnosed when it is still confined to where?
5. In radiation protection, what does "ALARA" stand for?

TODAY'S HIGHLIGHTS

CEC 1705: Trauma
08:30-09:30, Auditorium 1

IRT: Clinical practice for trainees, residents and young IRs
10:00-11:00, Room 114

ETF Short Talks
11:30-12:45, News on Stage area

FIQ 2101: Film Interpretation Quiz
14:30-15:15, Auditorium 1

Students on Stage
17:30-18:30, News on Stage area

IR Congress News is published as an additional source of information for all CIRSE 2019 participants. The articles and advertorials in this newspaper reflect the authors' opinions. CIRSE does not accept any responsibility regarding their content.

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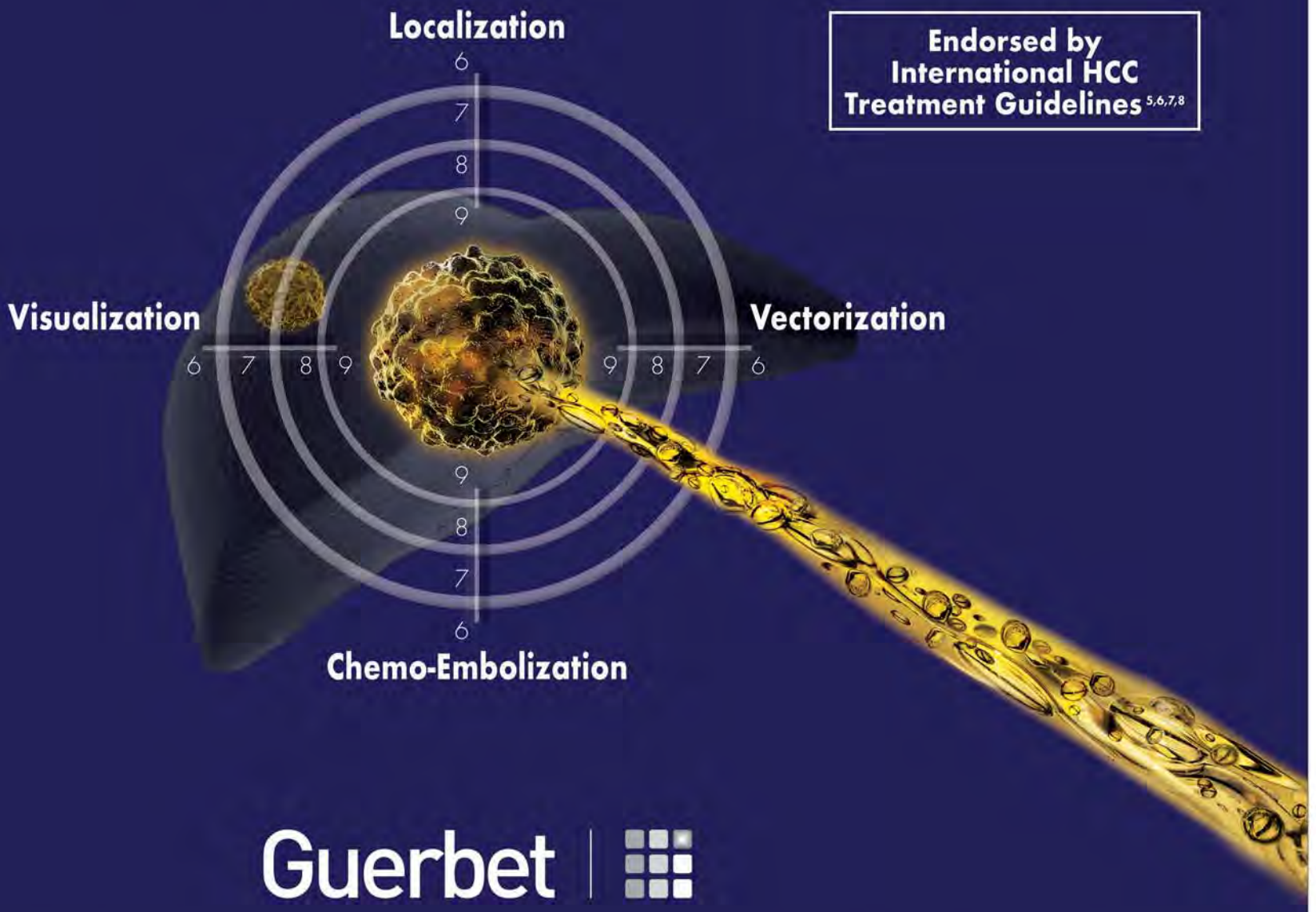
LIPIODOL® ULTRA FLUID

Ethyl ester of iodized fatty acids of poppy seed oil

Lipiodol® efficacy & safety for improved overall survival in HCC[1,2,3,4]



Endorsed by International HCC Treatment Guidelines[5,6,7,8]

Guerbet

LIPIODOL® ULTRA-FLUID. Composition: Ethyl esters of iodized fatty acids of poppy seed oil 10 mL, corresponding to an iodine content of 480 mg/mL. **Indications (**):** In diagnostic radiology - Hysterosalpingography - Ascending urethrography - Lymphography - Sialography - Fistulography and exploration of abscesses - Exploration of frontal sinuses - Pre and post-operative cholangiography. In interventional radiology - Visualisation and localization (by selective intra-arterial use during CT) of liver lesions in adults with known or suspected hepatocellular carcinoma - Visualisation, localisation and vectorisation during Trans-Arterial Chemo-Embolisation (TACE) of hepatocellular carcinoma at intermediate stage, in adults - Selective embolization in combination with Histoacryl glue (particularly for arteriovenous malformation or aneurysms) - Selective injections of LIPIODOL ULTRA-FLUID into the hepatic artery for diagnostic purposes where a spiral CT scan is not practical. In endocrinology - Prevention of severe cases of iodine deficiency. **Posology and method of administration (*):** have to be adapted according to the type of examination, the territories explored, the age and weight of the patient. The volume to be administered depends on the particular requirements of the technique and the size of the patient. **Contraindications:** Hypersensitivity to LIPIODOL ULTRA-FLUID - Confirmed hyperthyroidism - Patients with traumatic injuries, recent haemorrage or bleeding – Hysterosalpingography during pregnancy or acute pelvic inflammation – Bronchography. In interventional radiology (Trans-Arterial *Chemo-Embolization)*, Administration in liver areas with dilated bile ducts unless drainage has been performed. **Special warnings and special precautions for use (*):** There is a risk of hypersensitivity regardless of the dose administered. Lymphography: Pulmonary embolism may occur immediately or after few hours to days from inadvertent systemic vascular injection or intravasation of LIPIODOL ULTRA-FLUID: Perform radiological monitoring during LIPIODOL ULTRA-FLUID injection and avoid use in patients with severely impaired lung function, cardiorespiratory failure or right-sided cardiac overload. Hypersensitivity: all iodinated contrast agents can lead to minor or major hypersensitivity reactions, which can be life-threatening. These hypersensitivity reactions are of an allergic nature (known as anaphylactic reactions if they are serious) or a non-allergic nature. They can be immediate (occurring within 60 min) or delayed (not occurring until up to 7 days later). Anaphylactic reactions are immediate and can be fatal. They are dose-independent, can occur right from the first administration of the product, and are often unpredictable: avoid use in patients with a history of sensitivity to other iodinated contrast agents, bronchial asthma or allergic disorders because of an increased risk of a hypersensitivity reaction to LIPIODOL ULTRA-FLUID. Thyroid: can cause hyperthyroidism in predisposed patients. Lymphography saturates the thyroid with iodine for several months and thyroid exploration should be performed before radiological examination. Chemo-Embolization: Trans-Arterial Chemo-Embolization is not recommended in patients with decompensated liver cirrhosis (Child-Pugh ≥8), advanced liver dysfunction, macroscopic invasion and/or extra-hepatic spread of the tumour. Renal insufficiency must be prevented by correct rehydration before and after the procedure. Oesophageal varices must be carefully monitored. Hepatic intra-arterial treatment can progressively cause an irreversible liver insufficiency in patients with serious liver malfunction and/or undergoing close multiple sessions. The risk of superinfection in the treated area is normally prevented by administration of antibiotics. Embolization with glue: An early polymerisation reaction may exceptionally occur between LIPIODOL ULTRA-FLUID and certain surgical glues, or even certain batches of glue. Before using new batches of LIPIODOL ULTRA-FLUID or surgical glue, the compatibility of LIPIODOL ULTRA-FLUID and the glue must be tested in vitro. **Interaction with other medicinal products and other forms of interaction (*):** Metformin, Beta blockers, vasoactive substances, angiotensin-converting enzyme inhibitors, angiotensin-receptor antagonists, Diuretics, Interleukin II. **Fertility, pregnancy and lactation (*):** LIPIODOL ULTRA-FLUID must only be used in pregnant women if absolutely necessary and under strict medical supervision. Breastfeeding should be discontinued if LIPIODOL ULTRA-FLUID must be used - **Effects on ability to drive and use machines:** The effects on ability to drive and to use machines have not been investigated - **Undesirable effects (*):** Most adverse effects are dose-related and dosage should therefore be kept as low as possible :hypersensitivity, anaphylactic reaction, anaphylactoid reaction, vomiting, diarrhea, nausea, fever, pain, dyspnea, cough, hypothyroidism, hyperthyroidism, thyroiditis, pulmonary embolism, cerebral embolism, retinal vein thrombosis, lymphoedema aggravation, hepatic vein thrombosis, granuloma. **Overdose (*):** The total dose of LIPIODOL ULTRA-FLUID administered must not exceed 20 mL **- Pharmacodynamic properties (*):** Pharmacotherapeutic group: X-ray contrast media, iodinated; ATC code: V08A D01. Water-insoluble iodinated contrast medium. **Presentation (**):** 10 mL glass ampoule. **Marketing authorization holder (*):** Guerbet - BP 57400 - F-95943 Roissy CdG cedex - FRANCE. Information: tel: 33 (0) 1 45 91 50 00. **Revision**: April 24th, 2018.

(*) For complete information please refer to the local Summary of Product Characteristics (SPC).

(**) Indications, volumes and presentations may differ from country to country.

Countries in which cTACE indication is registered: Austria, Argentina, Belgium, Brazil, Cambodia, Czech Republic, France, Hong Kong, Hungary, Luxembourg, Ireland, India, Iran, Mexico, Mongolia, New Zealand, Peru, Portugal, Philippines, South Korea, Switzerland, Turkey, The Netherlands, Thailand, Taiwan, Tunisia, Vietnam

Country in which adjustment of drugs or medical devices is registered: Japan.

Reporting of suspected adverse reactions is important as it helps to continuously assess the benefit-risk balance. Therefore, Guerbet encourages you to report any adverse reactions to your health authorities or to our local Guerbet representative.

For a copy of the SPC, please contact a member of Guerbet.

1. Ikeda M. et al., Prospective Study of Transcatheter Arterial Chemoembolization for Unresectable Hepatocellular Carcinoma: An Asian Cooperative Study between Japan and Korea J. Vasc. Interv. Radiol. 2013; 24: 490-500

2. Lo C.M. et al. Randomized Controlled Trial of Transarterial Lipiodol Chemoembolization for Unresectable Hepatocellular Carcinoma Hepatology 2002; 35: 1164-1171

3. Llovet J.M. et al. arterial embolization or chemoembolisation versus symptomatic treatment in patients with unresectable hepatocellular carcinoma: a randomised controlled trial The Lancet 2002; 359: 1734-1739

4. Llovet J.M. et al . Systematic Review of Randomized Trials for Unresectable Hepatocellular Carcinoma: Chemoembolization Improves Survival Hepathology 2003; 37: 429-442

5. EASL-EORTC Clinical Practice Guidelines: Management of hepatocellular carcinoma. J. Hepatol. 2012; 56: 908-943

6. Japan Society of Hepatology, Recommendation, Chapter 5, Hepatology Research 2010; 40 (Suppl.1) 96-112

7. Bruix J. & Sherman M. AASLD Practice Guidelines; American Association for Study of the Liver Diseases; Hepatology 2011; 53: 1020-1022

8. Chinese guidelines 2011 edition, Chin. Clin. Oncol. 2012; 1:10

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IR congress news

New Product Launches CIRSE 2019

The CIRSE Annual Meeting has become the number one platform for minimally invasive image-guided procedures worldwide. Every year, key players in the field choose CIRSE to launch their innovative new products.

To find out more about the products being officially launched during CIRSE 2019, please visit the company booths in the Exhibition Hall. You will find a detailed floor plan overleaf! A full list of exhibitors and a floor plan can be found in your pocket guide, as well as via the CIRSE app.

Cardiovascular and Interventional Radiological Society of Europe

CIRSE

I

Cordis

MYNX CONTROL™ Vascular Closure Device: SECURE EXTRAVASCULAR CLOSURE

MYNX CONTROL™ VCD provides active extravascular sealing and resorbability properties with a next-generation delivery system to maximize predictability, safety, and ease of use in sealing 5-7F femoral arterial access sites.

Featuring:

- A next-generation deployment system designed for predictability and ease of use with a 2-button design to simplify procedural steps
- A sheath catch that is compatible with the procedural sheath
- A tension indicator that provides visual confirmation of device position for proper sealant deployment
- Available in 5F as well as 6/7F sizes

MYNX™ VCD has been clinically proven to reduce surgical complications, expedite recovery, shorten hospital stays, and increase patient comfort [1-5].

Visit Cordis at booth #52 to learn more!

1 Pruski MJ Jr et al. MynxGrip for closure of antegrade puncture after peripheral interventions with same-day discharge. Vasc Endovasc Surg. 2017 Feb;51(2):67-71.
2 Baker NC et al. Active versus passive anchoring vascular closure devices following percutaneous coronary intervention: a safety and efficacy comparative analysis. J Interv Cardiol. 2016 Feb; 29(1): 108-112.
3 Hutchings D et al. Success, safety, and efficacy of the Mynx femoral closure device in a real-world cohort: single-center experience. J Invasive Cardiol. 2016 Mar;28(3):104-108.
4 Noor S et al. Successful reduction of surgeries secondary to arterial access site complications: a retrospective review at a single center with an extravascular closure device. Vasc Endovascular Surg. 2010 Jul;44(5):345-349.
5 Fargen KM et al. A prospective randomized single-blind trial of patient comfort following vessel closure: extravascular synthetic sealant closure provides less pain than a self-tightening suture

II

Philips Image Guided Therapy

See clearly. Treat optimally.

Philips Azurion with FlexArm – the advanced suite that works around you. Philips Azurion 7 C20 with FlexArm is a revolutionary new approach to image-guided therapy, giving you the freedom to improve and grow your minimally invasive care.

This new ceiling-mounted system provides unlimited imaging flexibility for interventional radiology procedures, and exceptional positioning freedom for medical teams. All of this in a compact set-up, providing a highly cost-effective environment ready for the procedures of the future. By working around you, Philips Azurion with FlexArm helps optimize your suite performance, so you can deliver superior care.

Stop by the Philips booth to discover how Azurion with FlexArm empowers you to deliver better clinical outcomes in interventional radiology with:

- **SmartPerfusion** – perfusion imaging technology that provides you with an objective understanding of the impact of your patients' treatment, helping you determine the outcome of CLI procedures.
- **Philips Devices** – offering the world's first dedicated BTK IVUS platform to complement crossing solutions, atherectomy, drug-coated balloons and existing intravascular imaging (IVUS), for peripheral vascular, aorta, and deep venous procedures.

Join us at booth #3 and attend our Lunch Symposium on September 7th in Auditorium 2 (13:00 to 14:00) to discover more about FlexArm, SmartPerfusion, IVUS and many more.
www.philips.com/flexarm

III

Siemens Healthineers

Transforming care delivery in image-guided therapy

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Multi-disciplinary usage between different clinical specialties and procedural intelligence for efficient workflows will allow to transform care delivery and expand precision medicine. Optimize your clinical operations with Case Flows, a sequence of system settings matching the diagnostic steps and treatment path.

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ARTIS icono. An icon of innovation.

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The ARTIS icono system and its features are not commercially available in all countries.
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IV

Terumo Interventional Systems

MEDSPHERE

MEDSPHERE is a complete Radiofrequency Ablation System that allows the physician to ablate soft tissue in organs such as Liver, Kidney, Lung, Thyroid, as well as bone (osteoid osteoma). The system can be used with or without cooling system.

The versatility of MEDPSHERE can expand RFA ablation options, supporting the physician in choosing the best solution to approach each lesion and organ.

In fact, MEDSPHERE offers a wide range of treatment options:

- Two ablation modalities: Power Mode and Temperature mode
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- Various Gauges: 15G and 17G for Umbrella electrodes; 16G, 17G, 18G and 19G for straight cooled electrodes.
- Various sizes: umbrella diameters 2cm, 3cm, 4cm, active tips from 5mm, 10mm, 15mm, 20mm, 30mm.
- Various lengths: 7cm, 10cm, 15cm, 20cm, 25cm

All electrodes have a detachable cable, for an easy positioning and management during CT operations.

An intelligent protection mechanism stops RF delivery in case of malfunctioning.

V

Terumo Interventional Systems

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QuiremScout® has been shown to be more accurate than the commonly used surrogate 99mTc-MAA at predicting lung shunting[1] and intrahepatic distribution[2]

It has also been proven to be clinically safe in a population of 82 patients[3]

1 Elschot et al. 2014 EJNMMI
2 Dassen et al, 2018 CIRSE Abstract
3 Braat et al, 2017 Eur Rad

Floor Plan

Discover more about these exciting new products:
visit the company booths in the Exhibition Hall!

Links to the company websites can be found on the CIRSE website, www.cirse.org, or via the CIRSE app.