

CIRSE 2019 – Barcelona
Saturday, September 7, 2019

To kick off the congress, CIRSE 2019 will both return to IR's roots and examine its future, with a special PAD focus day! This micro-programme within the arterial track will give participants the latest updates and opinions on a host of controversial topics in peripheral arterial interventions – be sure to join us for an exciting day of data and debates!

CIRSE 2019

WHERE THE WORLD OF IR MEETS

Welcome to the congress!

Welcome to CIRSE's 34th annual congress, the most comprehensive platform for interventionalists from around the world. Expanding upon its more than three decades of continuous growth, this year's meeting promises to be a memorable one with an educational and scientific programme delivering the most up-to-date information on both established and novel therapies.

The diverse eight track programme will once again ensure that there will be something for everyone, regardless of background and level of experience, but also for different levels of clinical knowledge, with special programmes for medical students and IR trainees.

PAD Day at CIRSE 2019 – Giving the periphery centre stage

Peripheral treatments have always been a mainstay of interventional radiology, their importance increasing continuously with the constant rise of obesity and diabetes in the world's population.

This is why the comprehensive arterial track at CIRSE 2019 will feature a new highlight; a dedicated PAD micro-track being held today. PAD Day will offer a variety of sessions honing in on technical and safety issues in peripheral treatment, offering a complete image of where the field stands based on a multidisciplinary, multinational discussion by leaders in the field. Including educational sessions such as Hands-on Device Trainings and Focus Sessions, as well as scientific sessions such as First@CIRSE, PAD Day will scrutinise current technologies, real-world applications and controversies in PAD management.



"Attending PAD Day will give participants the opportunity to dive deep into the discussion of the most important concepts surrounding the femoropliteal and BTK areas. At the end of the day, you will most certainly have improved your knowledge and expertise in this ever-important field."

Fabrizio Fanelli
CIRSE 2019 SPC Chairperson

From technology to real-world applications

Interventional radiologists remain on the front lines in combating the debilitating symptoms and potentially dire consequences of peripheral arterial disease. This morning's **Focus Sessions** will discuss the evolution of and open questions surrounding practice guidelines and determinations as well as the current technologies and devices. The various lectures will also take an in-depth look at the indications for endovascular management for patients with intermittent claudication as well as for patients experiencing critical limb ischaemia. Both the possibilities and uncertainties regarding procedures and clinical management, including alternative options for patients with difficult cases and options beyond drug-eluting devices, will be discussed.

Spotlight on peripheral research

This afternoon's **First@CIRSE** session will feature data releases from several trials and studies on endovascular PAD treatment giving attendees a unique opportunity to get the most recent updates from the AVeNEW study, the IN.PACT AV access trial, the EffPAC trial, the SAVER registry, an analysis on patient-level data from two large studies of the Zilver PTX stent (DES), as well as a real-world-study about long-term mortality of patients treated by high-dose paclitaxel-coated balloon vs plain balloon angioplasty.

Paclitaxel-eluting technologies: what now?

Late last year, the interventional community was rocked by new meta-analysis data released by Konstantinos Katsanos et al., drawing a possible link between the use of paclitaxel-eluting devices in the peripheries and heightened mortality risk.

An FDA investigation this June was inconclusive, stating merely that the current data does not unequivocally demonstrate a risk to patient health, but the mortality signal is worrying and more carefully designed studies will be necessary to help throw light on the situation. For now, paclitaxel-eluting technologies are being closely monitored. They continue to be used in the SFA and other territories in selected patients and with full disclosure in the consent process.

As part of today's PAD Day programme, the **Hot debates on drug-eluting technologies Hot Topic Symposium** will be held at 10 o'clock in Auditorium 1, allowing prominent speakers to utilise session-style presentations to address open questions in PAD, most

notably the concerns about paclitaxel-coated devices. This timely discussion is sure to provide a valuable opportunity for IRs to not only delve into the current research and debate, but also to inform their practice. Ahead of this lively discussion, we spoke to a number of renowned faculty members to get their personal views on the controversy surrounding the use of paclitaxel-eluting stents and balloons in the SFA.



"It is difficult to determine which is the best way forward as there seems to be an impasse at the moment. I had thought that once patient level data became available from the various trials that we could put the issue of increased mortality to bed for once and for all. It would appear that the level of missing data is large and negates any helpful statistical analysis."

Michael Lee
Endovascular Subcommittee Chairperson

To read CIRSE's position statements and full interviews, visit cirse.org/current-updates

Welcome Address



Robert A. Morgan
CIRSE President



Afshin Gangi
Vice-President



Fabrizio Fanelli
Scientific Programme
Committee Chairperson



Thomas J. Kroencke
Scientific Programme
Committee Deputy
Chairperson



**Fernando Lopez
Zarraga**
CIRSE 2019 Local
Host Committee
Chairperson



José Urbano
CIRSE 2019
Local Host Committee
SPC Representative

¡Bienvenidos a CIRSE 2019! We are delighted to welcome you all to this year's congress, which, for the fourth time, takes place in breath-taking Barcelona. Both city and congress centre have proven themselves ideal for hosting a congress of this scale, and we are certain that you will find the onsite and local facilities more than adequate.

As ever, our Scientific Programme Committee have been working tirelessly to ensure that those attending have access to the latest data, presented in a wide array of learning formats. These cater for all levels of clinical experience, from novices (our dedicated Student Programme), through to trainees, residents and those looking to branch out into new areas, all the way to experienced practitioners. All levels can benefit from lively debates, intense hands-on learning, exciting lectures and video learning sessions, as well as plenty more!

Scientific highlights

The scientific sessions for this year are once again stratified into eight clinical tracks, ensuring that delegates can easily follow those sessions most relevant to their own practice. These are clearly colour-coded in the pocket guide and our online planner. If you haven't yet downloaded the CIRSE App (or the CIRSE 2019 plug-in), we recommend you do so to make your congress experience as smooth and successful as possible.

Endovascular interventions remain the cornerstone of our meeting, with sessions grouped into arterial, venous and aortic procedures, the latter being hosted again as the IDEAS symposium, a successful congress-within-a-congress that encourages interdisciplinary discussion among interventional radiologists, vascular surgeons and all other relevant clinical disciplines.

The comprehensive arterial track will feature some particular highlights in 2019, notably three Expert Round Tables that will delve into unsolved questions in below-the-knee, SFA and aorto-iliac stenosis, respectively. Today's "PAD Day" was carefully curated and will bring us all closer to answering open questions in the field. We will start by looking into technologies and techniques before moving to the hot

debate surrounding the use of drug-eluting technologies. Part of the PAD Day is also the First@CIRSE session, in which the latest evidence from trials and studies on peripheral arterial disease will be presented for the first time.

Meanwhile, the venous programme will offer an excitingly diverse range of sessions, including a Clinical Evaluation Course entitled "ilio-femoral venous stenting masterclass" and a Hot Topic Symposium on the implications of the ATTRACT trial for DVT management.

Interventional oncology will be prominently featured, with a multitude of sessions examining immunotherapy, colorectal metastases, RCC, cholangiocarcinoma, and, naturally, HCC, with a Focus Session on Wednesday presenting the top 20 most important studies on HCC. A Hot Topic Symposium on Monday will ask if renal tumour ablation is ready for prime time.

The ever-evolving field of embolotherapy will also be given ample coverage, investigating trauma, BPH, fibroids and adenomyosis, with Case-Based Discussions on IR in gynaecological emergencies, and AVMs and lymphatics, respectively.

A highlight of the neurointerventions track will be the Expert Round Table on controversies in endovascular thrombectomy; those wishing to refine their knowledge of non-vascular interventions can choose from a range of events, not least a Case-Based Discussion on IR salvage for abdominal surgical disasters, and an Expert Round Table showing that vertebral augmentation is alive and kicking.

CIRSE 2019 received a staggering 1,705 abstracts, again a new record and almost 12% more compared to last year. We would like to encourage all delegates to stay for the Free Paper sessions in the afternoon and attend these scientific presentations, to support your colleagues and interact with the authors.

Welcoming the next generation

We are delighted to once again welcome many trainees and residents, whose needs have been catered for in cooperation with

CIRSE's European Trainee Forum. We hope they will benefit from the dedicated talks and networking events that have been laid on for them. We also warmly welcome our many medical students, who are here to learn what the specialty has to offer them and their future patients. They will find news and information in a special section at the back of each newspaper.

Social events

We've also endeavoured to organise networking events for our full members, most notably, the traditional dinner and party that rounds off each congress, taking place on Tuesday night. Tickets are fast selling out, so please enquire at the Hotels, Social Events and City Information Desk in the entrance hall if you wish to attend. We're also offering the chance to win tickets – CVIR Endovascular is generously sponsoring a daily "solve the case" quiz: the lucky winners will secure tickets to the party! Please turn to page 23 to answer the first question!

Here to help

Should you need any assistance while at the congress, please ask one of our friendly staff – we have engaged a large number of experienced local hosts, as well as our regular office staff, and all are ready to help with any queries you may have. For information about accommodation, transport or post-congress leisure activities, please visit our travel partners, Kuoni Congress, at the Hotels, Social Events and City Information Desk.

Last but not least, we warmly invite all congress goers to attend today's opening and awards ceremony in Auditorium 1, as we congratulate our 2019 dignitaries and winners, as well as enjoy a stunning entertainment programme on stage! You'll find more information overleaf.

We hope you will have a wonderful stay, and look forward to seeing you at the opening ceremony today at 14:30 and, of course, throughout the congress!

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.

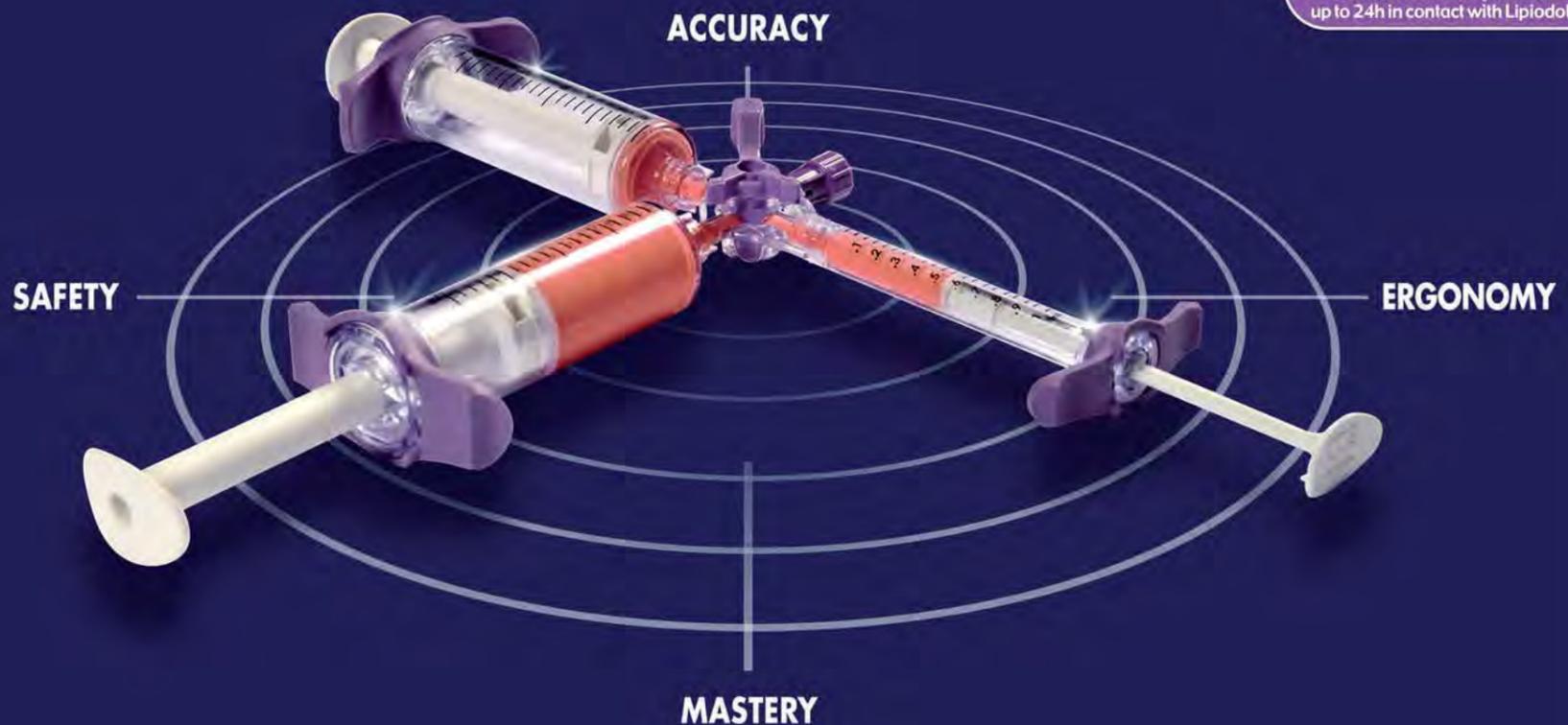
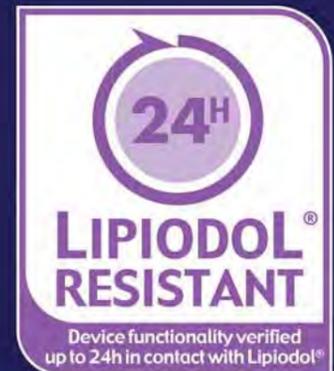
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Once you've recharged your own batteries, take the opportunity to charge your phone – several charging stations will be available outside Auditorium 2 and next to the society booths.

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

The Opening and Awards Ceremony

The CIRSE Opening and Awards Ceremony is the official opening of the congress, bringing delegates together to celebrate the achievements of their peers and get everyone ready for the next four days of education, science and innovation. CIRSE President Dr. Robert Morgan will host the ceremony, during which Prof. Thierry de Baère will receive the Gold Medal for his exceptional contributions to interventional radiology. We will also be honouring Prof. Viktor Bérczi, Prof. Ricardo García-Mónaco and Dr. James Jackson as Distinguished Fellows.

Highlighting important contributions to research in the field, the CVIR Editors' Medal will this year go to authors Martijn R. Meijerink, Robbert S. Puijk, Aukje A. J. M. van Tilborg, Kirsten Holdt Henningsen, Llenalia Garcia Fernandez, Mattias Neyt, Juanita Heymans, Jacqueline S. Frankema, Koert P. de Jong, Dick J. Richel, Warner Prevoo and Joan Vlayen for their work on thermal ablation and chemotherapy for the treatment of small unresectable colorectal liver metastases.

The Award of Excellence and Innovation in IR will go to Profs. Boris Guiu and Mathieu Boulin and their team for their work on the anti-cancer agent idarubicin for transarterial chemoembolisation of hepatocellular carcinoma.

Today marks our fourth Opening and Awards Ceremony in the city of Barcelona. In 2016, our last meeting in this enchanting city featured a flamenco performance by Barcelona's Quindalé dance company, and

delegates at the 2013 meeting enjoyed the music of guitarist Pedro Javier González.

This year, attendees can look forward to a captivating performance that gives a nod back to past Barcelona congresses, featuring both Spanish guitar and flamenco dancers.

Don't miss this kick-off event in Auditorium 1 at 14:30 today!



Award of Excellence and Innovation in Interventional Radiology



Since its establishment in 2012, the Award of Excellence and Innovation in Interventional Radiology has been awarded on a yearly basis for outstanding contributions to the advancement of interventional radiology. Sponsored by the Rolf W. Günther Foundation, this distinction has been granted to some of the most innovative physicians in the field. The recipient will receive a cash prize of €6,000 as well as a certificate of merit at the Opening and Awards Ceremony.

This year, two great innovators have been chosen. For 2019, the honour will go to Prof. Boris Guiu and Prof. Mathieu Boulin and their team for their excellent work on the anti-cancer agent idarubicin for transarterial chemoembolisation (TACE) of hepatocellular carcinoma (HCC), which included in-vitro and in-vivo studies, several clinical trials, multiple published papers and one patent.

About the winner

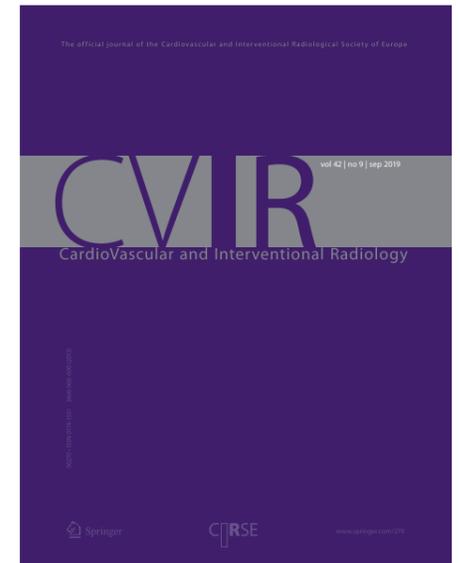


Boris Guiu began his medical studies at the University of Dijon in Dijon, France, receiving a preparatory diploma in biological and medical research in general anatomy and morphogenesis in 1998. He continued his studies in both Dijon and Villejuif, earning multiple diplomas in oncological and radiodiagnostic imaging. He completed his PhD in 2012 at the University Hospital in Dijon before completing a clinical fellowship in the department of interventional radiology at CHUV, Lausanne, Switzerland. Prof. Guiu is currently the head of the Department of Radiology and a professor of radiology at the St-Eloi University Hospital in Montpellier, France.



Mathieu Boulin started his career at the University of Burgundy, graduating with credentials in hospital pharmacy in 2003. He continued on in Burgundy, receiving his doctoral degree in clinical pharmacy in 2011, and then travelled to Canada to complete a post-doctorate at the University of Montreal. Returning to France, he received his habilitation for clinical pharmacy and oncology from the University of Burgundy in 2018. Prof. Boulin is presently a clinical pharmacist and associate professor at the Ambulatory Medical Unit of Oncology at the University Hospital Centre of Dijon Bourgogne in Dijon, France.

CVIR Editors' Medal



This year it is our pleasure to award the CVIR Editors' Medal 2019 to the author group listed below for their publication on the topic of thermal ablation and chemotherapy for the treatment of small unresectable colorectal liver metastases.

"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."

Martijn R. Meijerink, Robbert S. Puijk, Aukje A. J. M. van Tilborg, Kirsten Holdt Henningsen, Llenalia Garcia Fernandez, Mattias Neyt, Juanita Heymans, Jacqueline S. Frankema, Koert P. de Jong, Dick J. Richel, Warner Prevoo and Joan Vlayen.

CVIR 2018 (Aug) Vol 41: 1189-1204

Congratulations to the winners, and thank you for making CVIR your preferred journal for your submissions!

More Winners at CIRSE 2019

Gold Medallist

Thierry de Baère

Laudation: Jean Pallusière



Thierry de Baère was born in 1962 in Paris, France, and completed his medical studies at the University of Paris-Sud. Following this, he was a resident at the Université de Caen Basse in Normandy.

In 1991 he joined the Gustave Roussy Cancer Centre in Villejuif, where he has worked ever since. The institute is considered to be one of the world leaders in cancer care, and it was the first cancer centre to have its own dedicated IR department, which has been headed by Prof. de Baère since 2003.

Prof. de Baère's special research interests are portal vein embolisation, inter-arterial therapy for liver cancer, image guidance for IR and percutaneous ablation of lung, liver and bones with RFA and cryoablation. His clinical work has been dedicated to the minimally invasive treatment of liver, lung and kidney tumours.

An inexhaustible researcher, Prof. de Baère has also authored or co-authored over 200 peer-reviewed scientific publications.

He is on the editorial board for *CVIR* and is a reviewer for *JVIR*, *European Journal of Cancer* and *Journal of Hepatology*. He has authored several guidelines with CIRSE and EASL, and is currently working with ESMO, ESTS and ESTRO.

Prof. de Baère has been a dynamic and active member of CIRSE since 1993. He served as Chairperson of the Standards of Practice Committee from 2007-2009 and as Deputy Chairperson of the European Conference on Interventional Oncology (ECIO) in 2012 and 2013, before chairing the conference in 2014 and 2015. He was on the Scientific Committee for GEST and GEST Europe from 2008 to 2011, and has also served as a member of the CIRSE Foundation Advisory Council and on the Oncology Alliance Task Subcommittee of CIRSE. He is currently on the Advisory Board and Scientific Programme Committee for ECIO 2018-2019, the Programme Committee for ET, and he is leading the IO4IO (interventional oncology for immunoncology) Task Force for CIRSE.

Distinguished Fellow

Viktor Bérczi

Laudation: Trevor Cleveland



Viktor Bérczi is currently a professor and chairman at Semmelweis University's Department of Radiology in Budapest, Hungary, from which he graduated in 1983. After some time working in the US, he decided in 1994 to pursue clinical work and started learning about IR at Semmelweis University's Cardiovascular Surgical Clinic. After receiving a CIRSE Education Grant in 2000, Prof. Bérczi spent three months at the Karl Franzens University in Graz, Austria. From January 2004-2006, he was employed as an endovascular fellow at the Sheffield Vascular Institute in Sheffield, UK.

Prof. Bérczi's primary interest is vascular interventional radiology. Within IR, he has a specific interest in uterine fibroid embolisation (UFE), for which he set up a major centre in Hungary.

Prof. Bérczi has been a CIRSE Member since 1995, a CIRSE Fellow since 2002, and he was a part of the CIRSE Membership Committee from 2009-2011, 2011-2013 and 2015-2017. He received the award for the best oral presentation at the CIRSE Annual Congress

in 1997, and he has consequently been invited as a lecturer for various CIRSE congresses, as well as for numerous ECR congresses. He has been EBIR-certified since 2011.

He has served as a host and faculty member for the ESIR Basic Course in 2007 and 2008 in Budapest and was a Local Host Committee Chairperson for the ECIO Annual Congress in 2013. He has worked in various editorial capacities for *CVIR* – both as a consultant to the editors and as a member of the Editorial Board – since 2008, and he was a member of the Oral Examination Council for the EBIR from 2012-2014. Prof. Bérczi has been a member of the Programme Planning Committee for the ECR Annual Congress since 2017, and is Chairman of the Interventional Radiology Subcommittee for ECR 2020. He was a local host for the School of MRI, European Society of MR in Medical Biology (ESMRMB) in 2012 and 2018, and President of the Hungarian Society of Radiology from 2014-2018. He was also Secretary for the Hungarian Society of Cardiovascular Interventional Radiology from 2006-2011.

Distinguished Fellow

Ricardo D. García-Mónaco

Laudation: Elias Broutzos



Ricardo García-Mónaco completed his medical degree with honours at the University of Buenos Aires in 1981, before successfully sitting the boards for Radiology and Imaging Diagnosis of Argentina's National Ministry of Health in 1988. Shortly thereafter, he acquired a diploma in MRI from the University of Paris in 1991. Following his residency at the Hospital Italiano in Buenos Aires, he completed training in angiography and interventional radiology at the Bicêtre Hospital, University of Paris from 1988-1992 and visiting fellowships at both New York University, USA and Toronto Western Hospital, Canada in 1990.

After returning to Argentina in 1996, he took positions as both an associate professor of radiology and as the programme director of interventional and vascular radiology at the University of Buenos Aires. He completed a doctorate (PhD) in medicine in 2004, becoming a full professor of radiology at the university in 2007. That same year, he became the director of the University of Buenos Aires' radiological medical school programme, a position he still holds to this day.

Since 1992, Prof. García-Mónaco has been the head of endovascular therapy and interventional radiology at the Hospital Italiano

in Buenos Aires, and from 2005-2018 held a position of chairperson of the hospital's Department of Radiology.

His international medical career is complemented by his active membership in many medical associations, both national and international. Prof. García-Mónaco is a founding member of the Argentine College of Vascular and Interventional Radiology (CARVI), where he currently serves as president. He has served as president of the Argentine Society of Radiology (2001-2006), the Inter-American College of Radiology (2006-2008) and the International Society of Radiology (2016-2018).

Prof. García-Mónaco has received awards for 39 scientific presentations and has been conferred honorary membership of various societies. He is a SIR fellow, an ECIO 2019 honorary lecturer and has received the Gold Medal of the Argentine Society of Radiology. Throughout his career, he has served on many advisory boards and educational committees, currently serving as a member of the ISR Nomination Committee, the ISSR Membership Committee and the RSNA Vascular/Interventional Education Exhibits Subcommittee.

Distinguished Fellow

James E. Jackson

Laudation: Alex Barnacle



James Jackson is a consultant interventional radiologist at Hammersmith Hospital in London, UK, where he started his training in radiology in 1986.

In 1988, he was appointed as a Cook Research Fellow and Honorary Senior Registrar in Diagnostic Radiology at the Royal Postgraduate Medical School, Hammersmith Hospital. In 1989, he was awarded a British Institute of Radiology Scholarship, enabling him to visit the departments of radiology in Lund University Hospital and Malmo General Hospital in Sweden. Upon his return, he was appointed to the post of full-time radiology consultant at the Royal Postgraduate Medical School.

In his early years in interventional radiology, he specialised in percutaneous biliary work and, with Professor Andy Adam, published some of the first work on the use of metallic biliary endoprostheses. He subsequently developed a passion for visceral angiography and its use in the localisation of obscure sources of gastrointestinal haemorrhage.

During the mid-1990s he worked with William Cook Europe to develop the first detachable embolisation coil in order to make the

embolisation of pulmonary arteriovenous malformations both easier and safer. With his colleague in respiratory medicine, Professor Claire Shovlin, he has been a major contributor to the literature on the clinical management of patients with hereditary haemorrhagic telangiectasia and pulmonary arteriovenous malformations, and their publications are recognised as having had an important impact on the long-term wellbeing of this group of individuals.

During his career he has published over 150 papers and book chapters on a wide range of topics in interventional radiology, but it is for his work on the treatment of haemoptysis by embolisation and the management of systemic and pulmonary arteriovenous malformations that he is particularly well known. The clarity and fluency of his lectures and workshops, with his desire to disseminate important interventional techniques that, above all, improve patient safety and clinical outcome, have established him as an authoritative and sought-after contributor to national and international meetings.



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REFERENCES

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Embolisation for Adenomyosis: Pro

Paul N.M. Lohle

Hysterectomy is a good and definitive treatment method for women with symptoms of adenomyosis. However, hysterectomy is also considered a major surgical procedure with a long recovery time and possible long-term sequelae. In addition, and certainly not unimportantly, more and more patients want uterine-sparing treatments, even when conception is no longer necessary or desired. This justifies research into alternatives to hysterectomy, such as uterine artery embolisation (UAE) in the treatment of symptomatic adenomyosis.

Eisen Lang and co-workers retrospectively reviewed 309 women who underwent UAE and identified 117 women with MR imaging features of adenomyosis (junctional zone thickness ≥ 12 mm). With a mean follow-up of 22.5 months, overall clinical success was achieved in 89% of women; heavy menstrual bleeding control was achieved in 88%; dysmenorrhea relief was achieved in 90%, with VAS reduction of 6.13 ($p < 0.001$). Mean symptom severity score and QoL score improved significantly at 12-month follow-up compared to baseline ($p < 0.001$). Hysterectomy was performed in only 5% of women treated. There were few complications, apart from two important issues with two women who had unintended pregnancies which were complicated.

Man-Deuk Kim and colleagues retrospectively analysed 50 women who underwent UAE for symptomatic adenomyosis. All patients underwent contrast-enhanced MR imaging at baseline and 3 months after UAE, and were followed clinically. The percentage of adenomyosis infarction after UAE predicted symptom recurrence at mid-term follow-up. The cut-off percentage of infarction required to predict symptom recurrence was 34.3% in this study.

Results of a systematic review and meta-analysis have been reported evaluating the effect of UAE on symptomatic adenomyosis. Patients from 30 prospective and retrospective cohorts were evaluated and divided into four groups: short-term (< 12 months) pure adenomyosis, short-term adenomyosis with fibroids (combined adenomyosis), long-term (> 12 months) pure adenomyosis, and long-term combined adenomyosis. Improvement of symptoms occurred in 83.1% (872/1,049) of patients. Reported symptom-reduction was 4.8% greater in the short-term combined group ($p = 0.169$) and 11.4% greater in the long-term combined group ($p = 0.003$) compared to pure adenomyosis groups. Hysterectomy rates in the short-term group varied from 2.6% in the pure adenomyosis group and 1.4% in the combined group. The long-term group showed a comparable hysterectomy rate of 7.2% in the pure adenomyosis group compared to 7.0% in the combined group. The weighted absolute uterine volume reduction at 3 months was reduced in all patients; however, it was statistically greater in the pure adenomyosis group.

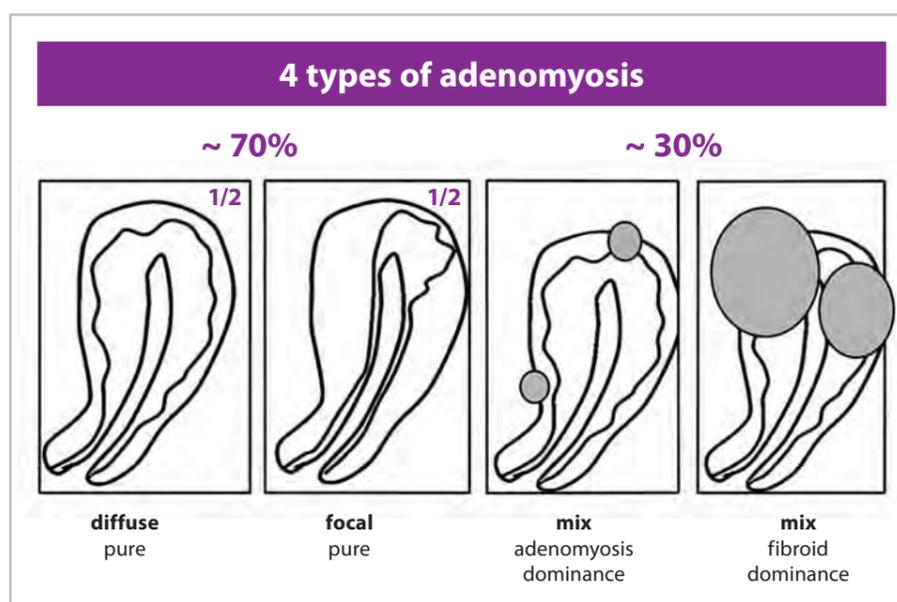
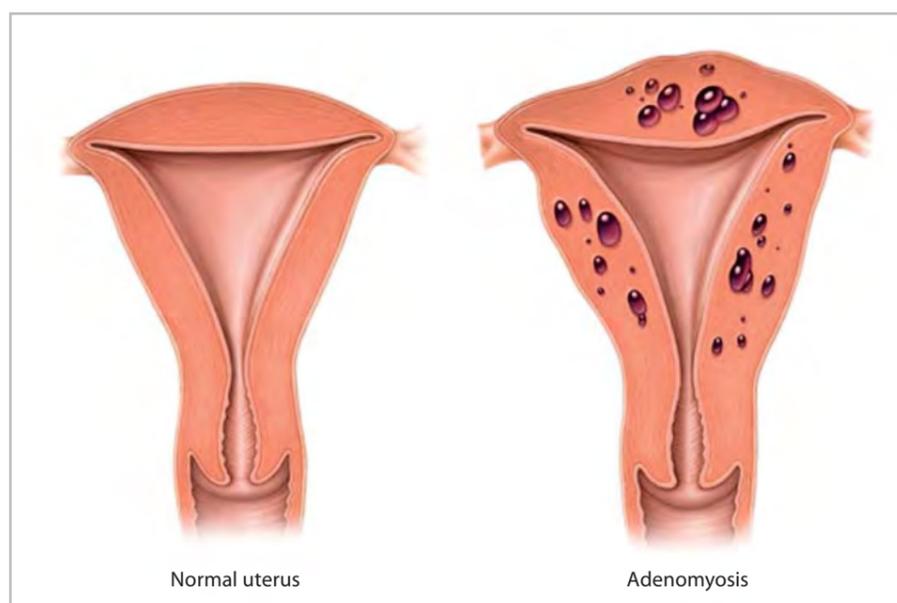
Long-term clinical results with seven years' follow-up after the UAE in the treatment of symptoms caused by adenomyosis have been published. Seven years after the intervention, various items such as: health-related quality

of life (HRQoL), symptom severity scores (SSS), patient satisfaction, menopause and re-intervention rates were assessed using standardised questionnaires. Twenty-nine patients with adenomyosis (15 of these in combination with fibroids) were included and treated with UAE between September 2006 and January 2010. Seven years after treatment, 5 of 28 patients (18%) had a secondary hysterectomy due to persisting complaints. The initially significantly improved HRQoL after UAE remained stable throughout the years up to seven years. The SSS showed a small statistically significant difference in favour of the adenomyosis-in-combination-with-fibroids group compared to the pure adenomyosis group. It was concluded that in 82% of patients, UAE results in preservation of the uterus. 72% of patients were satisfied and two-thirds responded well to UAE in terms of improvement of HRQoL and SSS.

The effects of UAE on symptom improvement and uterine volume reduction in patients with adenomyosis are successful. More evidence for this treatment would be desirable, for example by conducting comparative (preferably randomised) trials. For this reason, the multicentre prospective **QUESTA trial** (Quality of Life after Embolization versus

Hysterectomy in Adenomyosis) was designed and conducted in The Netherlands to further evaluate the effectiveness of UAE compared to hysterectomy. Randomised controlled trials are needed, also to determine whether UAE provides the ability to preserve fertility in women seeking pregnancy with symptomatic adenomyosis with or without fibroids.

UAE may be considered a valuable uterine-sparing, minimally invasive treatment option for symptomatic adenomyosis. UAE offers an alternative to hysterectomy in which good long-term results are obtained, also in the field of health-related quality of life (HRQoL). We consider it **substandard care if UAE is not offered** as part of the total treatment options in patients with symptomatic adenomyosis. Proper counseling of patients including standardised, independent and complete information is of paramount importance in helping patients with symptomatic adenomyosis (with or without fibroids) make the right choice of treatment. Based on the current available evidence, embolisation for adenomyosis seems to be an attractive and useful alternative to hysterectomy. It is therefore unjustified to withhold the option of uterine artery embolisation for symptomatic adenomyosis.



Don't miss it!

Fibroids and adenomyosis Controversy Session

Saturday, September 7, 11:30-12:30
Room 116



Paul N.M. Lohle
Elisabeth Tweesteden Ziekenhuis
Tilburg, The Netherlands

Dr. Lohle is an interventional radiologist and the Director of the Residency Programme at the Elisabeth Tweesteden Hospital (EHZ) in Tilburg, The Netherlands. He studied medicine in the city of Groningen and then completed his radiology training in The Hague. He subsequently started at the EHZ as Director of the Residency Programme, with interventional radiology as a key focus area. In his work as an IR, Dr. Lohle performs blood vessel interventions in various parts of the body including the arms, abdomen and legs, using techniques such as dotter procedures, stenting and embolisation. He is well-known for his extensive work on image-guided treatment symptomatic fibroids and adenomyosis.

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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.



Saturday, September 7, 13:15-14:15, News on Stage Area

News on Stage: Peripheral interventions

Moderators: E. Stabile (Naples/IT), G. Tepe (Rosenheim/DE)

- 404.1 ZILVERPASS study – ZILVER PTX versus bypass surgery for long femoropopliteal lesions: final 12-month and preliminary 24-month results
M. Bosiers; Hamme/BE
- 404.2 Benefits of DEB post stenting in diabetic patients and males: subgroup analysis of the randomized Freeway stent study
J. Tacke¹, K.A. Hausegger², S. Müller-Hülsbeck³, H. Schröder⁴, S. Stahnke⁵, J. Dambach⁵; ¹Passau/DE, ²Klagenfurt/AT, ³Flensburg/DE, ⁴Berlin/DE, ⁵Bonn/DE
- 404.3 Cost-effectiveness of a polymer-coated, paclitaxel-eluting stent (Eluvia) compared to a polymer-free, paclitaxel-coated stent (Zilver PTX) for endovascular femoropopliteal intervention: a payer perspective
S. Müller-Hülsbeck¹, P.W.M. Elroy², R. Akehurst³, S.L. Amorosi⁴, C. Giretti⁵, R.I. Griffiths⁶, W.A. Gray⁷; ¹Flensburg/DE, ²Utrecht/NL, ³Sheffield/UK, ⁴Marlborough, MA/US, ⁵Milan/IT, ⁶Maple Grove, MN/US, ⁷Philadelphia, PA/US
- 404.4 T.I.N.T.I.N. trial: combining luminor DCB and iVolution self-expanding stent in real life: 6-month outcomes
K.R. DeLoose; Dendermonde/BE
- 404.5 Cost-effectiveness of drug-eluting stents versus PTA with bail-out bare metal stents for infrapopliteal lesions in critical limb ischemia (PADI Trial)
T. Wakkie¹, M. Spreen¹, L. Konijn¹, J. Wever¹, R. van Eps¹, H. Veger¹, L.C. van Dijk¹, W.P.T.M. Mali², M. Maessen³, N. van Herpen³, H. van Overhagen¹; ¹The Hague/NL, ²Utrecht/NL, ³Arnhem/NL
- 404.6 The Lutonix® global drug coated balloon registry real world patients with below the knee disease
M. Lichtenberg¹, M. Brodmann², D. Scheinert³; ¹Arnsberg/DE, ²Graz/AT, ³Leipzig/DE

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

Poster Awards 2019

SCIENTIFIC POSTERS

MAGNA CUM LAUDE

NIR-absorbing gold nanoparticle-coated stent-mediated photothermal therapy suppresses stent-induced tissue hyperplasia
J.-H. Park, K.Y. Kim, N.G. Bekheet, H.-Y. Song, J.S. Kim; Seoul, KR

CUM LAUDE

Iradubicin-loaded superabsorbent polymer microsphere: in vivo analysis using rabbit VX2 liver tumor model
Y. Kimura, K. Osuga, K. Nagai, H. Hongyo, K. Tanaka, Y. Ono, H. Higashihara, N. Tomiyama; Suita, JP

A phase 1 study using autologous natural killer cells in advanced HCC patients with hepatic arterial infusion chemotherapy
Y.J. Kang¹, B.C. Lee¹, N.Y. Yim², H.-O. Kim², J.K. Kim²; ¹Jeollanam-do, KR, ²Gwangju, KR

Development of radiopaque drug-eluting beads based on lipiodol/biodegradable-polymer for transarterial chemoembolization
T. Hasebe¹, T. Matsumoto¹, Y. Okamoto², K. Yano², K. Bitō², K. Tomita¹, S. Maegawa², S. Kamei¹, E. Matsuoka¹, Y. Imai¹, A. Hotta²; ¹Tokyo, JP, ²Yokohama, JP

CERTIFICATE OF MERIT

Cadaveric classification of geniculate artery anatomy
M. Sighary, A. Sajan, J.P. Walsh, S. Marquez; New York, NY, US

EDUCATIONAL POSTERS

MAGNA CUM LAUDE

The essential role of iodized oil-based CT-lymphangiography for dedicated treatment planning of specific lymphatic second-line interventions in patients with complex postoperative therapy-refractory lymphatic fistula (LF) in different locations
C.M. Sommer¹, F. Pan¹, M. Loos¹, T. Hackert¹, H.U. Kauczor¹, A. Hatopp², G.M. Richter², C. Goerig², H. Killguss², T.D. Do¹; ¹Heidelberg, DE, ²Stuttgart, DE

CUM LAUDE

Management of transcatheter arterial embolization for frozen shoulder: focus on anatomical findings
A. Kuhara, M. Koganemaru, T. Kugiyama, Y. Shinjyo, S. Tanoue, N. Tanaka, T. Abe; Kurume, JP

Mixed reality for interventional radiology: an intuitive real-time radiation visualization system
T. Takata¹, H. Kondo², M. Yamamoto², S. Furui², T. Kobayashi¹, K. Shiraiishi², H. Oba², J. Kotoku¹; ¹Itabashi-ku, JP, ²Tokyo, JP

CERTIFICATE OF MERIT

Duodenal varices: a review of porto-systemic collateral pathways and endovascular interventions
M. Tsurusaki, I. Numoto, T. Oda, A. Suzuki, T. Kadoba, Y. Yagyu, N. Kashiwagi; Osakasayama, JP

The phrenic nerve: you can use it or abuse it
J.S. Kriegshauser¹, C.D. Czaplicki¹, J.H. Schildmeyer², N.R. Langley³, M.-G. Knuttinen¹, S.G. Naidu¹, S.J. Alzubaidi¹, I.J. Patel¹, R. Oklu¹; ¹Phoenix, AZ, US, ²Rochester, MN, US, ³Scottsdale, AZ, US

Wishing a happy 90th birthday to one of the founding fathers of IR!

Elizabeth Wenzel, CIRSE Office

"We never stop learning and, whenever possible, we have to continue improving ourselves."

Dr. Plinio Rossi

Plinio Rossi was born on June 4, 1929 in Santi Cosma e Damiano, a small town in the Garigliano river plain of Italy. He was the second son born to Attilio and Fortunata Rossi, a doctor and a primary school teacher, respectively. The family moved to nearby Formia in the mid-1930s; in spite of the tremendous hardships of World War II, the Rossi family survived, rebuilt, and Plinio received his secondary school certificate in 1946 before enrolling at the medical school of the University of Rome, where his brother Giuseppe also studied. In 1952, he graduated from the university with perfect marks.

Dr. Rossi then moved to Tuscany to attend the division of Surgical Pathology at the University of Florence at Careggi. He tried to enrol in the school of radiology, but due to an oversight was not admitted. Temporarily dissuaded from radiology, he enrolled and completed a course in respiratory diseases while volunteering at the division of surgical semeiotics at Careggi Hospital. Afterwards, he returned to Ospedale Dono Svizzero in Formia, where his father was president, working tirelessly as a volunteer in order to learn as much as he could in all branches of medicine.

Though he found his work in Formia rewarding, it soon became clear that in order to progress in his career, change was needed. He decided to join his brother, then working in America, and in 1954 he left Italy to head to New York. There, Giuseppe assisted him in finding a position as an intern at the Martland Medical Center in Newark, New Jersey.

When his internship ended, he again applied to study radiology – this time with success. In 1955, he began a three-year residency at Queens General Hospital in New York City. Here, he focused on vascular radiology and found himself serving as the hospital's

reference doctor for neuroradiology, even though he'd never had any formal training in the subject, as he learned quickly and used any spare moment to further his own education. To motivate himself, he held a radiology course for European doctors wishing to obtain an American medical licence, paradoxically teaching others what no one had taught him. He completed his training in autumn of 1958 before enrolling in New York University to prepare for the State Medical Board exams that would allow him to launch his career as a doctor.

After receiving his qualifications, Dr. Rossi took up the post of attendant in radiology at St. Vincent's Hospital in Manhattan, where he would ultimately stay for the next 13 years, eventually as the chief of cardiovascular radiology, while earning a name for himself as "a new breed of radiologist", propelling the future of what was to evolve into interventional radiology. He began presenting at conferences, speaking at meetings and publishing his research.

Returning to Formia for a summer break in 1964, Dr. Rossi reconnected with Maddalena Terraneo, whom he'd known as a family friend for years, and the couple were married shortly thereafter. Of Maddalena, Dr. Rossi writes in his autobiography "To me, home has always meant a safe harbour where to find shelter during a tempest, and for this reason I have no words to thank my Maddalena for the security and the encouragement she has given me."

In the early '70s, feeling the need for change, Dr. Rossi returned to Italy with his family, which by then included two small children, Adriano and Alexandra. Upon returning to Rome, he obtained an Italian specialisation and then his qualifications as an academic teacher. In a twist of fate, the professor who had turned down his original application to study radiology ultimately conferred his teaching qualifications along with words of praise.

He began work at the San Filippo Neri Hospital, as well as in private practice with other doctors

who had returned to Italy after years in the United States, while still periodically taking leave to go to America. He then turned his attention to organising an English language meeting featuring courses in vascular radiology aimed at bringing Italy up to speed on the techniques being used in the US and elsewhere in Europe. This meeting, CARVAT (Updating course in abdominal and thoracic vascular radiology) was an unprecedented success, attracting participants from around the world and growing larger each year.

In 1972, Dr. Rossi won a tenured position as assistant professor of radiology at the University of Rome "La Sapienza". Between the CARVAT courses and the monthly seminars, the University of Rome became a centre of attraction for vascular radiology in Europe. In 1973, with a group of German, North European, French and Italian radiologists, he laid the foundation for a European Society of Vascular Radiology, the society that would later become CIRSE. He also was a founding member of the American Society of Vascular Radiology (now SIR) and the Italian Society of Medical Radiology (SIRM).

In 1974, along with Dr. Barry Katzen and Dr. Giovanni Simonetti, Dr. Rossi carried the first angioplasty with a primordial balloon ever conducted in Italy. Immediately thereafter, they started to use another type of catheter developed by Andreas Grüntzig, a cylindrical polyvinyl balloon that inflated uniformly, some of the first to implement this groundbreaking innovation that allowed all selectively catheterised arteries to be dilated anywhere in the body. In 1977, he was invited to work in a private facility, Casa di Cura Villa Margherita, which had the second CAT scanner in all of Italy (Dr. Rossi quickly arranged to have it replaced with a newer, more advanced machine.)

Dr. Rossi began his activities as a chaired professor at the University of Milan in 1986, commuting every week from Rome in order to teach. He began setting up a series of monthly "Clinical Radiological Meetings" in Milan, which were highly attended, and an

international course on IR called "Milano 90", which was also a great success.

In 1991, he returned to Rome full-time to take up the position as chair and head of the third division of radiology at the University of Rome "La Sapienza", updating the facilities and devoting himself entirely to interventional radiology.

Dr. Rossi's career has spanned well over half a century, during which he has been integral in helping IR evolve into what it is today. He has been the president of CIRSE, ISHBR, ESGAR and SIRM; the recipient of a total of five gold medals from different radiological societies (including CIRSE) and is an Honorary Member of several societies, both European and international. Since 1964, he has spoken at more than 700 congresses and has been a writer for several journals, including CVIR. His memberships in societies both national and international number too many to list here, as do his publications; he is author or co-author of more than 400 publications in both English and Italian, and is the editor of several volumes on IR.

Of Plinio Rossi, former student and lifelong friend Dr. Barry Katzen aptly observes "This is a man whose energy, integrity, commitment to innovation and change, technical prowess and educational drive have benefited so many colleges and the patients he and we have treated over the years, it is extremely difficult to measure his accomplishments in traditional terms."

Truly, Dr. Rossi's contributions to IR cannot be overstated. We extend the warmest of wishes, thanks and congratulations on the occasion of his 90th birthday!

"Be inventive, creative, imaginative and bold, be constant and determined because these qualities will enable you to change things. If no one does anything for fear of making a mistake, no one will ever move forward."



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Cardiovascular and Interventional Radiological Society of Europe

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Be the first to discover the new outcomes in the sessions:

Saturday 7th

13:15h -14:15h; News on Stage

TINTIN 6-month complete outcomes

Presented by Dr Koen Deloose (Belgium)

16:15h -17:15h; Room 117

EFFPAC 24-month outcomes

Session: FIRST@CIRSE -First data release on endovascular research

Presented by Prof Ulf Teichgräber (Germany)



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THE BEST DCB EVER

Intra-arterial chemotherapy for pancreatic cancer

Toshihiro Tanaka

Pancreatic cancer is the fourth-leading cause of cancer death. The prognosis is extremely poor with a five-year survival rate of 34% in localised, 12% in regional and 3% in distant disease [1]. Systemic chemotherapy has been widely used as a standard therapy for unresectable pancreatic cancer. Recently, FOLFIRINOX and gemcitabine combined with nab-PTX have been developed. However, the response rate and overall survival are not satisfactory. In addition, severe adverse events of not only haematological toxicity but also fatigue and neuropathy frequently occur. Furthermore, if refractory to these standard chemotherapies, there are currently no treatment options.

Even after curative resection, there is a high probability of recurrence. The most common site of recurrence after resection is hepatic metastasis. After adjuvant chemotherapy using 5-FU or gemcitabine, hepatic recurrence occurs in 30% of patients and post-operative liver metastasis is a critical factor limiting survival [2].

Intra-arterial therapy is one of the expected therapies for chemo-resistant cancer patients (Fig. 1). Several published papers on intra-arterial therapy have demonstrated interest and promising results.

Intra-arterial drug distribution in pancreatic cancer

When we conduct intra-arterial chemo-infusion for pancreatic cancer, we must consider the drug distribution. Previously, we reported the drug distribution in advanced pancreatic cancer evaluated by CT during arterial injection of contrast material, using the hybrid CT and angiography system [3]. Our results indicated that pancreatic head and body/tail cancer required chemo-infusion from the celiac and the superior mesenteric arteries. From this result, we conducted a clinical study, in which 5-FU was infused from both the celiac and

superior mesenteric arteries and extra-beam radiotherapy was delivered concurrently [4]. This chemoradiotherapy using the dual-arterial infusion technique achieved a high response rate of 70%. However, the side effects of diarrhea and hypoalbuminemia occurred due to the chemo-infusion into the superior mesenteric artery.

Redirection of blood flow supplying pancreatic cancer

We developed a technique to convert the dual pancreatic blood supply into a single one from the celiac artery [5]. With the embolisation of the pancreatic branches which arise from the superior mesenteric artery, the whole tumour was supplied from the celiac artery alone in selected patients. Using this technique, we conducted a phase I/II study of intra-arterial 5-FU combined with full-dose systemic gemcitabine [6]. The high response rate of 68.8% was achieved without any severe toxicity. The outstandingly high tumour response to intra-arterial 5-FU can be explained by the pharmacokinetic study. In an animal study using pigs, the AUC of 5-FU in the pancreatic head was around 2.5 times higher in the intra-arterial with superior mesenteric balloon occlusion group compared with those in the intra-venous group and the intra-arterial without occlusion group [7]. Intra-arterial therapy could be effective for a neoadjuvant setting, prior to surgery or radiotherapy, because of the high possibility of tumour size reduction [8].

Adjuvant hepatic arterial infusion chemotherapy after pancreatic resection

To prevent hepatic recurrence, we developed a novel adjuvant strategy combining intra-arterial 5-FU infusion with systemic gemcitabine [9]. In our study, the overall hepatic recurrence rate was only 13%. After pancreatic surgery, catheter placement is

occasionally difficult due to tortuous and stenotic celiac and/or hepatic arteries. To overcome this difficulty, we used the coaxial indwelling catheter system [10]. Regarding the safety of arterial infusion chemotherapy after pancreaticoduodenectomy (PD), it is necessary to carefully evaluate the possibility of biliary complications. Our reported rate of complication was only 6.5% by hepatic arterial chemo-infusion after PD [11]. Previous randomised controlled trials demonstrated improvement of hepatic recurrence-free survival and overall survival in adjuvant hepatic infusion chemotherapy [12,13].

DEBIRI-TACE for pancreatic liver metastases

TACE using irinotecan-eluting bead is also effective for liver metastases from pancreatic cancer. The results of a multi-centre registry showed the response rate was 80% when refractory to standard chemotherapy [14]. We also have experienced several cases in which DEBIRI was effective for multiple liver metastases from pancreatic cancer (Fig. 2). Currently, we are developing a new device, a microcatheter-accessible port, which can perform both selective TACE and arterial infusion chemotherapy through the port [15]. This combined therapy could contribute to suppress pancreatic liver metastases (Fig. 3).

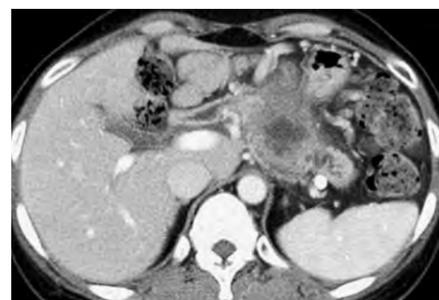


Fig. 1: Locally advanced pancreatic body cancer refractory to all current standard chemotherapies

- CT before treatment: A growing pancreatic body cancer was seen, which had been refractory to FOLFIRINOX and Gemcitabine combined with nabPTX.
- CT after arterial infusion 5-FU combined with radiotherapy showed remarkable tumour shrinkage (arrow).

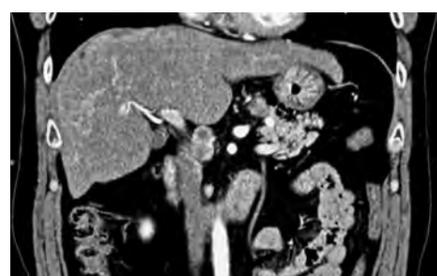
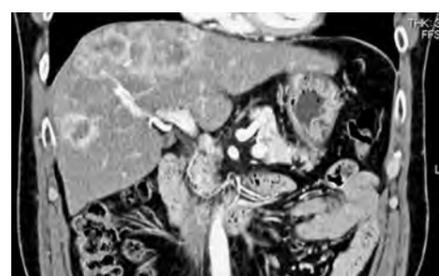


Fig. 2: Multiple pancreatic liver metastases after failure of standard systemic chemotherapies treated by DEBIRI-TACE.

- CT before DEBIRI-TACE
- CT obtained after the 4th DEBIRI-TACE, 2 years after the first DEBIRI, showed remarkable shrinkage of the tumours.



Fig. 3: Development of repeatable microcatheter access port: the design of a currently used implantable port was modified. The septum was punctured by a 20-gauge indwelling needle and 2.0-Fr non-tapered microcatheter was inserted into the port.

Don't miss it!

Pancreatic cancer: role of IR Focus Session

Saturday, September 7, 08:30-09:30
Room 115



Toshihiro Tanaka
Nara Medical University,
Kashihara, Japan

Toshihiro Tanaka completed his medical education in 1995 at Nara Medical University, returning there again as an M.D. in 2000 after completing his residency in interventional radiology at the Aichi Cancer Center in Nagoya, Japan. In 2009 he expanded his career internationally, traveling to Aachen, Germany as an invited researcher at the Department of Applied Medical Engineering, and then to Maastricht as a clinical fellow at the Department of Radiology at Maastricht University Medical Center in the Netherlands. Returning to Japan, he resumed his position at Nara Medical University, where he later became an associate professor of the department of radiology in 2015.

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Register by emailing info@cvironline.org, as participation is limited.

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CVIR vol 42 | no 9 | sep 2019
CardioVascular and Interventional Radiology

Intrahepatic cholangiocarcinoma: is ablation alone enough?

Rafael Duran

Intrahepatic cholangiocarcinoma (ICC) is the second most common primary liver cancer after hepatocellular carcinoma, and the worldwide incidence of this malignancy is increasing [1]. Surgical resection is the treatment of choice with best reported outcomes, with a median overall survival of 27-36 months and a five-year survival ranging from 15-40% [2]. However, the vast majority of patients (60-70%) is diagnosed at an advanced stage of disease for which surgery is not an option [2,3]. Moreover, even in surgical candidates, the recurrence after resection is high (50-60%), with the liver being the most common site of recurrence [4-6].

For patients who are not surgical candidates or who experience recurrence after surgery, treatment options are limited in many centres to systemic chemotherapy. Chemotherapy (cisplatin and gemcitabine) offers a median overall survival of 8-12 months at the cost of severe toxicities [7]. Locoregional treatments have been increasingly performed in ICC patients with liver-limited or liver-dominant disease with promising outcomes. These locoregional therapies performed by interventional radiologists include transarterial chemoembolisation, radioembolisation, intra-arterial hepatic chemotherapy and thermal ablations.

Although few studies have reported on the outcomes of thermal ablations in patients with ICC, published data is encouraging and highlights that a subset of patients with ICC may benefit from these minimally invasive therapies. Indeed, thermal ablation modalities such as radiofrequency ablation (RFA) or microwave ablation (MWA) are excellent therapeutic options for ICC patients with limited hepatic disease (lesion \leq 3 cm) who are not surgical candidates and who experience recurrence after surgery. For non-surgical patients with small ICC lesions, the technical success of RFA (defined as complete tumour ablation) is high (90-100%). Importantly, reported median overall survival is similar to most surgical series, ranging from 33-38 months [8-10] (Fig. 1). In cases of disease recurrence after initial complete hepatic resection or residual tumour after curative-intent surgery (incomplete resection), RFA achieved a median overall survival of 27-51 months [11-13]. Although less data are available for MWA, reported outcomes on primary unresectable or recurrent ICC seem similar to RFA [14].

Repeated hepatic resection vs. thermal ablation (RFA, MWA) were compared in patients with recurrent ICC after initial surgical resection [12]. The disease-free and overall survival rates of the whole study population were similar between the groups. However, when stratifying both treatments groups according to the size of the recurrence, patients with lesions $>$ 3 cm had a better overall survival when resected, whereas for lesions \leq 3 cm no difference in survival could be observed. This is particularly important in light of the fact that major complications were significantly greater in the repeated resection group [12].

Similarly to other tumour types such as hepatocellular carcinoma, a key limitation for the expansion of ablation to larger ICC has been the difficulty in obtaining complete ablation of tumour margins. Strategies have

been developed to improve the completeness of the ablation zone and to expand the indication of thermal ablations to larger tumours (i.e. $>$ 3 cm). One approach consists of combining thermal ablation with transarterial chemoembolisation. In a recent work, MWA was combined with simultaneous transarterial chemoembolisation in patients with either naïve treatment ICC lesions or recurrent ICC following surgery [15]. The mean tumour size was 3.6 ± 1.1 cm. The complete ablation rate was 92.3%. There were neither major complications nor death related to the combination therapy. Median progression-free survival and overall survival were 6.2 and 19.5 months, respectively [15].

The field of thermal ablations in ICC is growing. Although available data is limited and based on retrospective evidence, reported outcomes are promising and select ICC patients benefit from thermal ablation. Taken together,

available results show that thermal ablation should be considered in ICC patients with liver-limited or predominant disease with small lesions (\leq 3 cm) who are not surgical candidates or who recur after initial surgery. For patients with intermediate-size ICC lesions (3-5 cm) who are not surgical candidates, several locoregional options are possible based on patient and lesion characteristics such as the combination of ablation and transarterial chemoembolisation vs. intra-arterial therapies such as radioembolisation [2]. Prospective studies are needed to further investigate the efficacy of thermal ablation for ICC patients and their combination with systemic therapies.

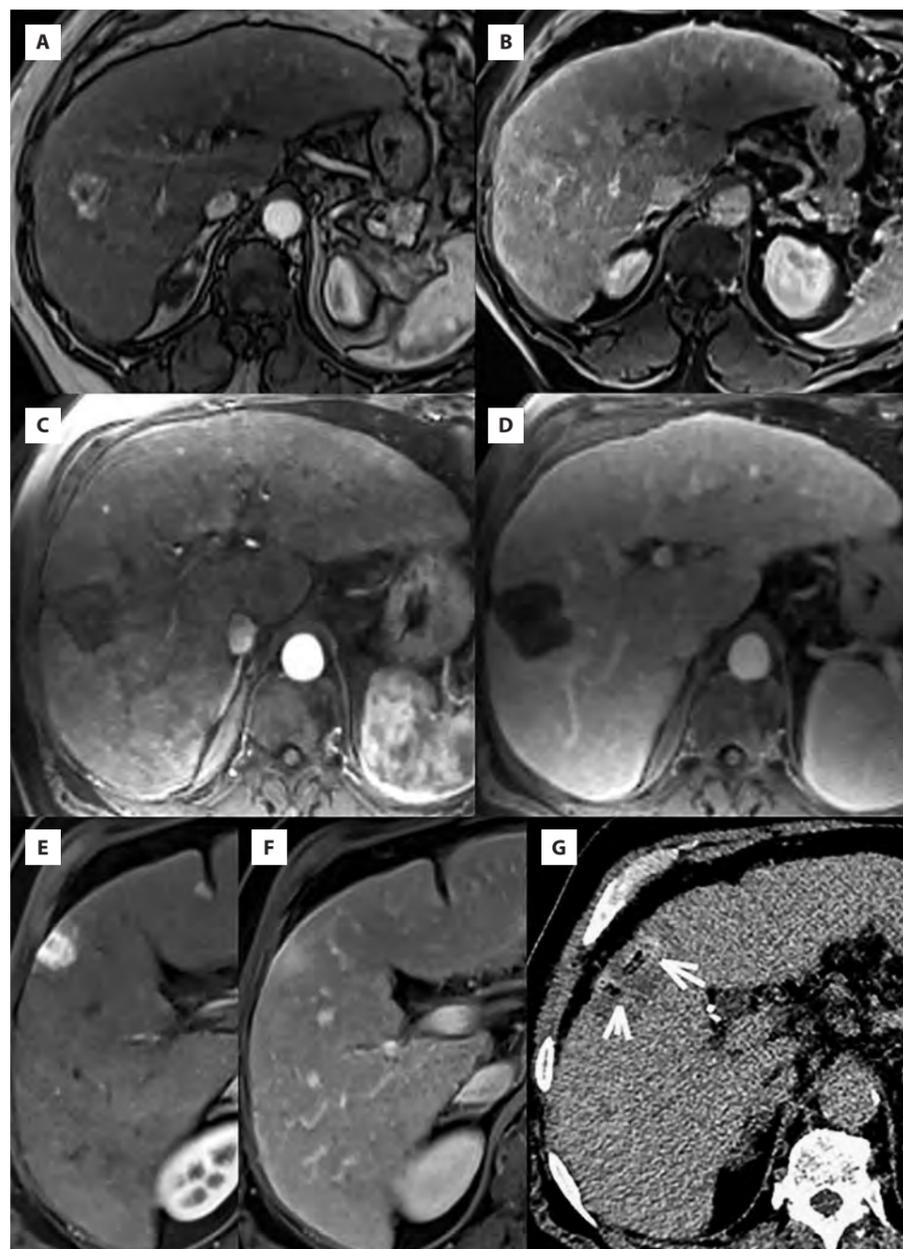


Fig. 1: 62-year-old male with known history of alcoholic cirrhosis (asymptomatic, ECOG 0, Child-Pugh A5). (A) Axial contrast-enhanced (arterial phase) T1-weighted MR image showing a 3 cm hyper-enhancing right-sided liver lesion with heterogeneous aspect on the portal venous phase without clear wash-out (B). The patient refused surgery and underwent a simultaneous biopsy (which confirmed ICC) and RFA. Axial contrast-enhanced arterial phase (C) and portal venous phase (D) T1-weighted MR image showing the absence of tumour recurrence at 6 years of the initial RFA. (E) The patient developed another hyper-enhancing lesion in segment V with persistent enhancement on the delayed phase (F). This lesion was biopsied and corresponded to another ICC. Patient refused surgery again and was treated with RFA. (G) Unenhanced-CT immediately performed after the RFA showing the adequacy of the ablation zone (arrows).

Don't miss it!

Intrahepatic cholangiocarcinoma Clinical Evaluation Course

Saturday, September 7, 11:30-12:30
Auditorium 2



Rafael Duran
University of Lausanne
Lausanne, Switzerland

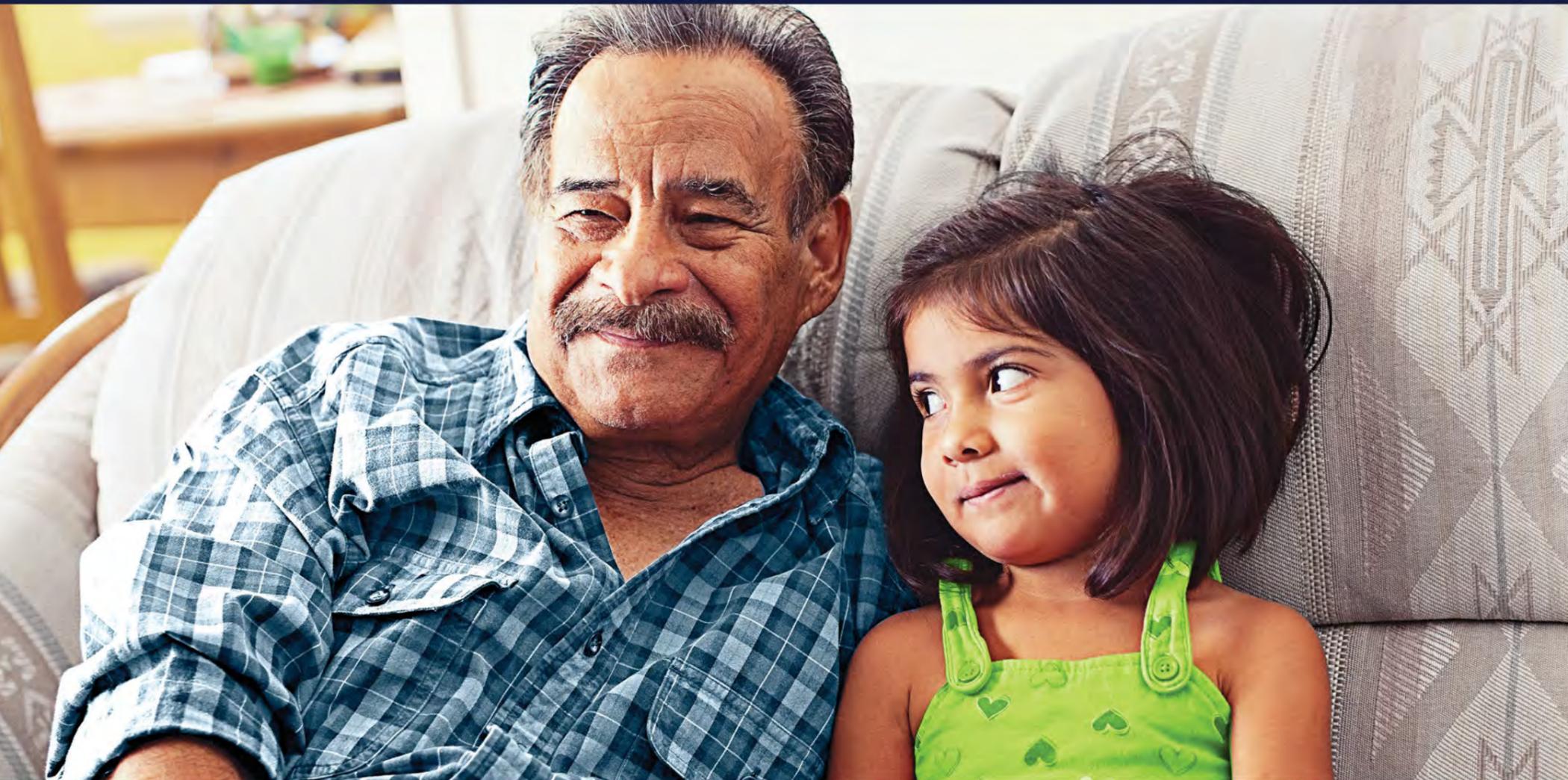
Dr. Rafael Duran is an interventional radiologist specialised in interventional oncology at the Lausanne University Hospital in Switzerland. He obtained his medical degree at the University of Lausanne, and did his training in Vascular and Interventional Radiology and in Interventional Oncology in the Russell H. Morgan Department of Radiology and Radiological Science, Division of Vascular and Interventional Radiology at The Johns Hopkins Hospital in Baltimore, MD, in the USA. His topics of interest include liver-directed locoregional therapies such as tumour ablations and intra-arterially delivered therapies. His research interests include translational research in the field of interventional oncology and the impact of locoregional therapies on the tumour microenvironment.

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IR for the Management of Trauma Patients

Chang W. Kim

Trauma is one of the leading causes of mortality across all ages and the main cause of death in children. Trauma patients lose blood and unless the bleeding stops, become hypotensive, hypothermic, coagulopathic, hypoxic and acidotic. Most preventable deaths from trauma are caused by unrecognised and untreated haemorrhage. Early management is focused on resuscitation and the diagnosis and treatment of life-threatening bleeding. The main interventional radiology (IR) method for trauma care is embolisation and success rates of greater than 90% have been reported when embolisation was used to achieve haemostasis.

Embolisation is the intentional occlusion of a vessel to arrest blood flow by the introduction of embolic material. The primary goal of embolisation is to control haemorrhage at its source intravascularly. The choice of embolic agent varies based on the targeted bleeding organ or vessel. Most embolic agents require a functioning coagulation cascade to work efficiently. Hence, embolisation should be performed as soon as possible before the onset of coagulopathy. Coagulopathy is more common in patients with hypothermia and with major haemorrhage requiring multiple blood transfusions.

Diagnosis and characterisation of solid organ and major vascular injuries are primarily done by multi-detector computed tomography (CT), and then the interventional radiologist can step in and utilise advanced endovascular techniques to finely carry out distal embolisation with micro-catheters and newer embolic agents, or offer stent grafts of various sizes. The availability, speed and spatial resolution of multi-detector CT scanners have improved diagnostic efficacy in traumatic injury, with whole-body scan acquisitions performed within minutes.

The spleen is the most commonly injured abdominal organ in blunt abdominal trauma. The current standard of care for splenic

trauma in haemodynamically stable patients is non-operative management. However, among patients with a vascular blush or pseudoaneurysm on CT scan, grade III injuries with large haemoperitoneum or a grade IV or V injury, this approach is thought to be at a high risk of failure. From June 2014 to May 2017, we've conducted splenic artery embolisation for a total of 31 patients with shattered spleen (grade V injury) in Pusan National University Hospital (PNUH), Busan, Republic of Korea. We've achieved 100% technical success and 90.3% clinical success. Only three patients underwent additional splenectomy. Moreover, normal splenic tissue could be found in 27 of 28 patients (96.4%) on follow-up CT scans (presented at ECR 2019). Embolotherapy is effective for not only haemorrhage control but also organ preservation.

Posterior urethral injury can be caused by pelvic trauma. This is difficult to surgically realign because the proximal urethra may be hard to find via endoscopic observation. However, early urethral realignment is mandatory to prevent severe urethral stricture. We achieved a favourable outcome by performing interventional primary urethral realignment in patients with posterior urethral rupture accompanied by bleeding and haematoma from complex pelvic fracture. From November 2016 to May 2018, 10 patients with posterior urethral injury underwent interventional primary urethral realignment and the technical success rate was 80% in PNUH (presented at ECR 2019).

Traumatic vascular injuries, such as thoracic aortic injuries, also can be treated via endovascular methods. Improvements in delivery systems and imaging modalities have resulted in a significant interest in the application of endovascular techniques to vascular injuries throughout the body. Other interventional procedures also can be used to treat trauma patients, and interventional radiologists are very familiar with these vascular and non-vascular procedures.



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CIRSE meets

Saturday, September 7, 11:30-12:30
Room 113



Chang W. Kim
Pusan National
University Hospital
Busan, Korea

Changwon Kim completed his medical studies in 1991, and accordingly completed his resident training in 1999, when he became a radiologist. He has been working as an interventional radiologist at Pusan National University Hospital since 2000. He was the recipient of the Best Scientific Paper award at the 12th Asian Oceanic Congress on Radiology, and is a member of the Korean Society of Radiology. Dr. Kim is both a contributor to and reviewer of the Journal of the Korean Society of Radiology and the Korean Journal of Radiology, and is on the Executive Board of the Asia Pacific Society of Cardiovascular and Interventional Radiology (APSCVIR), currently serving as treasurer.

Currently, there is an emphasis on non-surgical management of haemodynamically stable patients who have suffered traumatic injuries. Deciding between surgery, IR or a combined procedure early on is imperative and can potentially change the outcome for these patients. IR management of trauma is potentially easier, more cost-effective, safer, and may prevent surgery altogether or facilitate smaller, limited surgery. There has been an expanding role for IR in haemodynamically stable and unstable patients due to technological advances in IR.

For efficient management and time-sensitive triaging of trauma patients, a standardised institutional workflow algorithm using a multidisciplinary team is recommended. Effective integration of IR with surgery and emergency medicine requires adequate staffing, organised multidisciplinary evaluation and direct communication with quick response times. Nowadays, the necessity of IR is increasing for care of trauma patient, so understanding the role and position of IR is mandatory for the development of trauma patient care systems.

At a recent count, there are 17 trauma centres in Korea and interest in serious trauma is rising. We are conducting a registry of trauma intervention administered by the Korean Interventional Society for Trauma (KIST). Interim results show the most common injury mechanism is car accident and the most common interventional procedure is embolotherapy. Elapsed time from the door to the procedure is less than 2 hours in 70% of patients. Based on data from the Korean Trauma Intervention Registry (KTIR), we would like to emphasise the role of trauma intervention and contribute to enhancing this role further.

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Case M/24 Motor vehicle collision

CT scan showed shattered spleen accompanied with redundant perisplenic hematoma and contrast extravasation
Initial BP 90/60mmHg, 80/min, Hb 9.4g/dL

Multiple pseudoaneurysm and contrast pooling

Gelatin sponge particle, microcoil embolization

9 days F/U 15 days F/U 21 days F/U 30 days F/U

4 months F/U 16 months F/U

Gradual recovery of viable portion of the spleen on serial follow up

Case M/32 Traffic accident while riding his motorcycle

Primary Urethral Realignment | Rendezvous Technique

CT scan showed complex pelvic fracture accompanied by findings of contrast extravasation in the internal iliac artery and a significant amount of intra- and extra-pelvic hematomas. The bladder (arrow) showed signs of being compressed by these hematomas.

An initial fluoroscopy the bladder being filled with the contrast agent and the urethral balloon (arrow) being situated in the lower pelvic cavity, distant from the bladder, which corresponded to posterior urethral rupture accompanied by complex pelvic fracture identified on CT scan.

Retrograde urethrogram showed posterior urethral disruption. The end of the disrupted membranous urethra has a beak appearance (arrow).

A 16 Fr indwelling urinary catheter was inserted into the bladder over the guidewire (thru-and-thru technique).

Supported by the 5 Fr catheter, a 0.035-inch guidewire (arrowhead) was located in free-space in pelvic cavity without finding the disrupted contralateral proximal urethra (Retrograde approach).

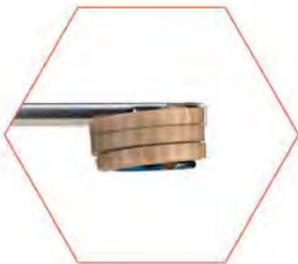
Other 0.035-inch guidewire (arrow), which was loaded in the 5 Fr catheter, was passed through the suprapubic cystostomy and was navigated to pass through the site of posterior urethral disruption so to reach the external urethral orifice (antegrade approach).

By successfully placing an indwelling urinary catheter inside the bladder, we completed the interventional urethral realignment procedure.

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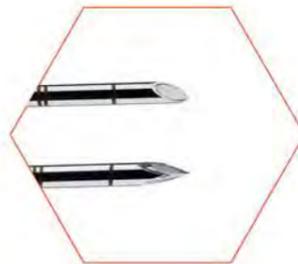
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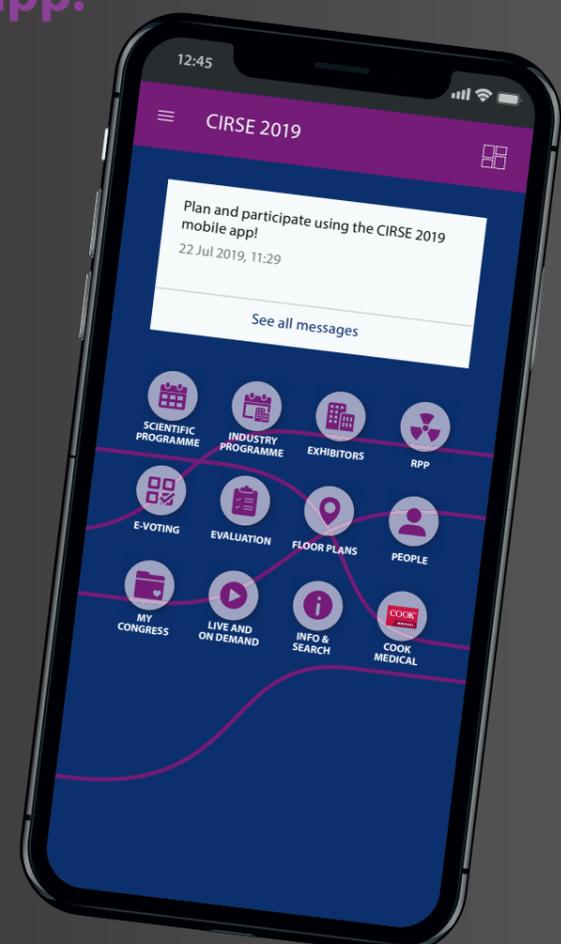


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Spine implants – a trend for the future?

Alexis D. Kelekis, EBIR

Apart from pain and mobility impairment, vertebral compression fractures (VCFs) result in deformities which in the long term can cause potential systemic complications as well as increased chance of future vertebral fractures either in the vertebral body affected or other vertebral bodies.

One of the indications for use of intraosseous implants is the attempt to correct the kyphotic angle and stabilise the fracture. The mechanical effects of kyphosis include decreased thoracic and abdominal space, anterior shift of the cranio-thoracic centre of gravity and a compensatory counter-kyphotic stance with subsequent clinical consequences such as decreased appetite with resultant nutritional impact, frailty, increased future VCF risk and secondary chronic back pain due to constant paraspinal muscular contraction. With current evidence, it is clear that percutaneous vertebroplasty and balloon kyphoplasty are more efficient than conservative therapy for the management of painful fractures, prolonging survival and preventing morbidity in these patients. Use of vertebral implants combined with cement injection is intended to provide analgesic and stabilising effects along with kyphotic angle correction and vertebral height restoration.

Correction of the kyphotic angle may be associated with optimal spinal alignment, paraspinal muscle relaxation, a more upright posture and reduced pain, along with a significantly higher improvement in function and quality of life.

Another potential use of the intraosseous implants is to provide stabilisation of the fracture along with the improved sagittal alignment to optimise and decrease the stress on the adjacent vertebral bodies. The prospect of stabilising the vertebral body by using vertebroplasty or even kyphoplasty might be associated with a higher risk of re-fracture due to the less optimal restoration or increased mechanical stress due to shear forces. In fracture types where simple augmentation is contraindicated, the use of an alternative material with different mechanical properties than PMMA can have an additive effect to

normalise the spinal compression and shear forces.

The purpose of the lecture is to describe the most commonly used vertebral implants and the implantation procedures associated with placing these implants. The advantages and disadvantages of different products will be addressed.

Vertebral implants for fracture treatment include stents, jacks, PEEK cages and fracture reduction systems. Indications for implants include osteoporotic or traumatic fractures as well as primary or metastatic neoplastic spine disease. The contraindications are similar to those for standard vertebral augmentation techniques, including asymptomatic fractures, pain relief with conservative therapy, local or systemic infection, severe coagulopathy and severe cardio-respiratory disease. From a technical point of view, introduction of these devices is performed through working cannulas of larger diameter than the standard trocars used in vertebroplasty and therefore size of the pedicle is an important feasibility and success factor. In some cases, where there is a preference for the use of implants, an extrapedicular approach can be opted for. Additionally, deployment of each implant is a more complex procedure when compared to standard augmentation techniques, requiring a

learning curve for optimal performance. In all cases and products, the patient is placed in a prone position and implantation is performed under fluoroscopic guidance.

Implants aim to provide long-term vertebral height restoration and correction of kyphosis, as well as additional support compared to standard augmentation. In selected cases of extreme fractures, implants can work as anchors, thus theoretically providing extra support for shearing forces, where the risk of cement failure is higher. Most biomechanical and clinical comparative studies versus standard augmentation techniques thus far report non-inferiority of spine implants with a reduced volume of injected cement. The disadvantage of all implants is their significantly higher financial cost when compared to that of standard vertebral augmentation techniques; the approximately one third of VCF patients who are treated with implants actually cost 70% of the total budget for vertebral augmentation.

As our skill and experience increases, as the available technology leaps forward, so do the complexity and the severity of the cases one can treat percutaneously. The material at hand evolves to cover those needs and provide solid biomechanical support for the simpler, but also for the more complicated cases at hand.

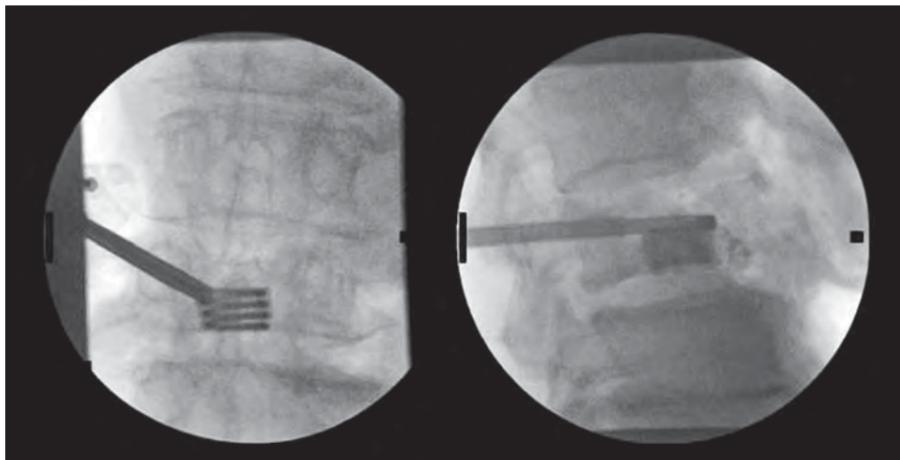


Fig. 1: Intraosseous PEEK implant for stabilisation and kyphotic angle correction of a vertebral fracture

Don't miss it!

Future trends in spine treatments
Focus Session
Saturday, September 7, 10:00-11:00
Room 115



Alexis D. Kelekis
(EBIR)
Attikon University Hospital
Athens, Greece

Prof. Alexis Kelekis currently works at the Division of Radiology – Radiotherapy II in the National and Kapodistrian University of Athens. His clinical work has, in recent years, been heavily focused on image-guided treatment of musculoskeletal lesions, and he is actively researching on injectable biomaterials for bone lesions, pain management and disc disease. He is currently president of the (originally French) Society for Injectable Osteoarticular Biomaterials (GRIBOI). He has been an ongoing faculty member at CIRSE meetings, and is a board member of the Society of Interventional Oncology. He is also interested in medical education, clinical research, epidemiology and informatics.

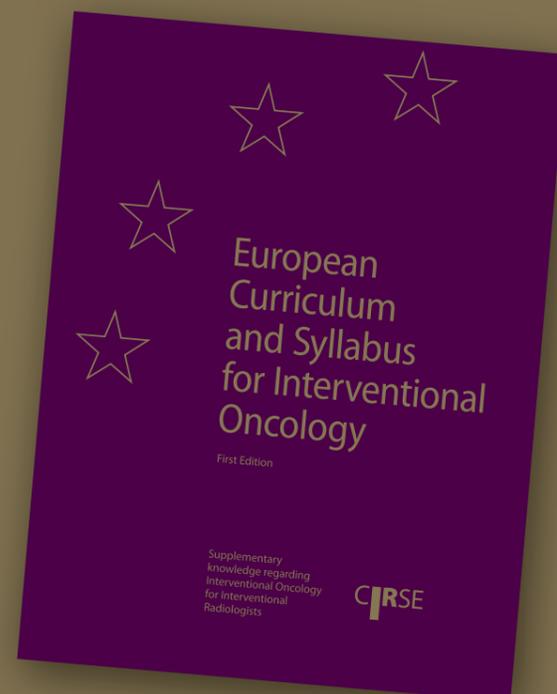
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This curriculum is a supplementary document that is dedicated specifically to interventional oncology. It provides recommendations and guidelines for the knowledge, skills and competencies essential to providing optimal IO care to cancer patients.

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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
SAT SEPT 7	12:45 – 13:00	Opening ceremony	W. Jaschke (Innsbruck/AT)
	13:00 – 13:15	Unintended exposures, substantial radiation dose and trigger levels	E. Vano (Madrid/ES)
	13:15 – 13:30	Development of modular protective glasses	D. Janssen (Hilvarenbeek/NL)
	13:30 – 13:45	Advantages of electronic occupational dosimetry and impact on dose reduction for professionals	G. Paulo (Coimbra/PT)
	13:45 – 14:00	Radiation doses to the eye lens and forehead of interventional radiologists	A. Ploussi (Athens/GR)
	14:00 – 14:15	Think Integrated – Dosimetry & Protection	M. Schmid (Munich/DE)

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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.

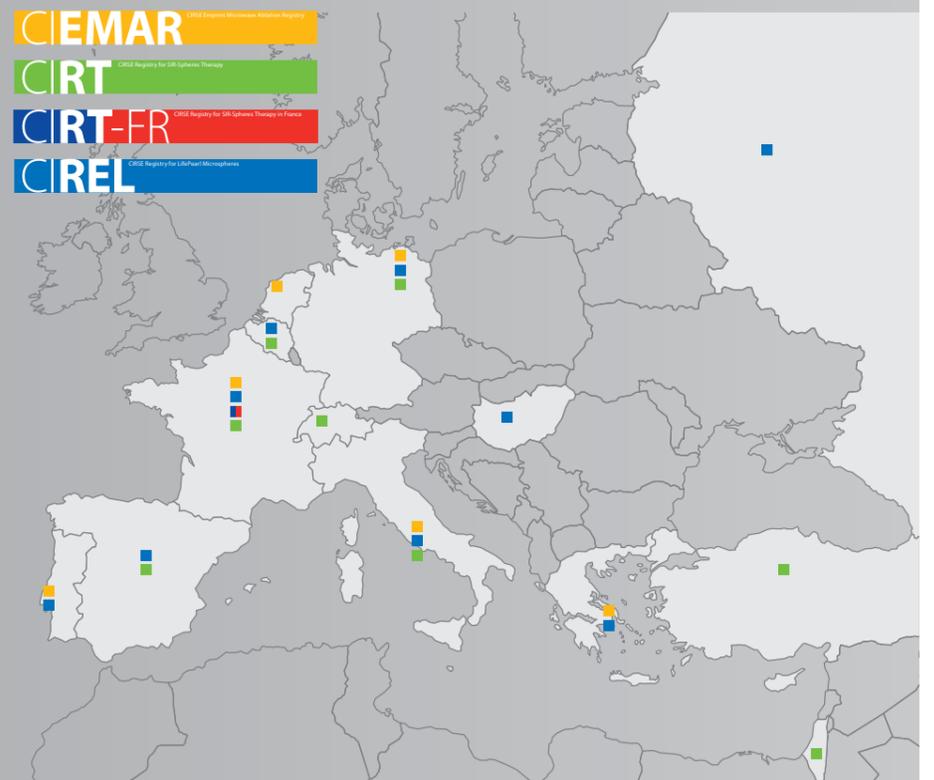
Medical Device Manufacturers

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.

STUDENT CORNER

Romana Šumpichová and Elizabeth Wenzel, CIRSE Office

Be inspiRed at CIRSE 2019!

It's already the ninth year since CIRSE has started supporting medical students by providing them with free congress registration for its annual meetings and a tailored Student Programme! The number of students coming to CIRSE annual meetings is rising every year and since 2010, when the Student Programme was officially launched, more than 1,500 students have taken advantage of this great initiative and got the chance to improve their knowledge of IR by attending educational, engaging and fun IR-related onsite sessions and events.

Attending the CIRSE congress opens up the possibility of getting more familiar with IR and its applications, and it also enables student participants to meet peers who share the same interest and speak to leading IRs who may give them valuable advice on what to do in order to pursue their career in interventional radiology.

Get involved, be inspiRed and get most out of this great initiative which may change your future!



Welcome to Barcelona!

Enjoying one of Europe's most vibrant cities

Situated on the picturesque east coast of Spain, the Catalan city of Barcelona stands as one of the most vibrant and international cities in Europe. Known for architecture and artistic pursuits of all kinds, the city was named 2014's European Capital of Innovation, and has been a UNESCO City of Literature since 2015. With no shortage of things to do, this sunny seaside location allows students to make the most of their time – both at the congress and in their down-time.

The Nightlife

Barcelona comes alive after dark. With sunny, beautiful weather well into autumn, there's no need to hide inside after sunset.

A stroll down Las Ramblas, the city's main thoroughfare, is the perfect introduction to a first evening out in Barcelona. Surrounded on either side by the winding streets of the medieval Old Town, restaurants and bars abound, and are particularly lively early in the evening.

For a less touristy feel, head to the Gothic Quarter to seek out smaller, local venues nestled in the labyrinth of alleyways. The trendy, central districts of El Born and Raval also offer ample opportunities for sitting and sipping Cava.

Tapas – the perfect social food

Barcelona is home to a vibrant and modern dining scene. During the day, the food court of the Diagonal Mar shopping centre across from the CCIB is a convenient spot to grab a quick bite. In the evening, relax with tapas (small plates of food meant for sharing) or pincho (individual bites of food served on a toothpick). Alternatively, stop by one of the city's plentiful seafood restaurants for a classic paella, made with fresh fish straight from the Mediterranean.

Ciudad Condal – The City of Counts

Barcelona's nickname, "The City of Counts", references the city's status as the seat of the Counts of Barcelona, who began presiding over the city well over 1,000 years ago. The city continues to juxtapose the ancient and the modern right next to each other, the progressive spirit of the city existing in harmony with the medieval streets, the old fishermen's quarter, and the nine UNESCO World Heritage sites within the city.

For those who want a feast, a party or a cultural experience, opportunities are everywhere. For those who just want to relax after the bustle of the congress, the seaside location means that the nearest beach is never more than a few minutes away. Regardless of how you wish to spend your free time, Barcelona provides something for everyone to enjoy.

What to look forward to at CIRSE 2019

This year, the CIRSE Student Programme is more popular than ever and will welcome a record number of students. More than 400 students from across Europe have registered for this year's Student Programme, with most coming from Romania, Hungary, Spain, Poland or Italy. Non-European students have also expressed their interest to join the Student Programme and CIRSE 2019 will welcome students from the US, Canada, China, Saudi Arabia and India. As in previous years, the Student Programme will feature an **introductory lecture** on the first day of the congress, where some of the CIRSE leadership will introduce students to the field of IR and its applications in modern medicine.

By attending the **Mentoring Breakfast** on Sunday at 08:30, students will be able to learn more about career opportunities in European countries. This event will allow students to

meet and speak with young as well as senior IRs, and might be the pivotal point for them to pursue a career in IR!

In order for students to have a **hands-on experience**, they have been invited to attend one of the planned hands-on device training sessions, simulation sessions or Learning Centre workshops, which are organised by CIRSE's industry partners.

To help students to get to know each other better, they are all invited to come to the **Students' Evening**, which will take place in one of the Barcelona's bars. To make it even more appealing, the first 300 students will receive a free drink!

As a novelty this year, the Student Programme will introduce a **"Students on Stage"** session, taking place on Monday afternoon, where

six student authors of the best abstracts submitted for the congress will present their work!

Last but not least, students will again have a chance to prove their knowledge gained during the congress by attending the **Students' Quiz**. In order to get ready for this challenge, it is highly recommended to pay close attention to the scientific sessions which are recommended to students.

All the above-mentioned sessions and events, as well as the full list of recommended scientific sessions, is to be found in the Student Programme 2019 promotional flyer – the student's bible throughout the congress.

A look back at CIRSE 2018

More than 250 students from 24 countries attended CIRSE 2018 in Lisbon, Portugal, in order to network, learn and gain insight into IR through 23 hours of student-recommended sessions and talks. The congress provided several specialised student opportunities, including an introductory lecture in which IR professionals led the way through a comprehensive overview of IR and its applications in modern medicine, as well as IR training, career perspectives and further Student Programme activities at the congress. A mentoring breakfast allowed for informal networking with professionals, and students were also able to join in on Hands-On Device

training, Learning Centre workshops and a pub-style IR quiz based on the recommended sessions.

The 2018 Student Programme feedback survey, conducted directly after the congress, shows the programme had an overwhelmingly positive impact on both IR knowledge and the perception of IR as a career choice. Before the congress, more than half of the students classified their IR knowledge as "average" at best and "very poor" at worst.

Additionally, nearly 90% of the students said that the experience positively affected the way

they thought of IR as a career choice, making it more attractive than they previously had thought. As one student wrote in the survey comments, "I've always liked radiology but have never considered it as a career, as I didn't want to lose patient contact. Now that I realise this is possible, I am considering interventional radiology."

QUESTIONS OF THE DAY

Saturday, September 7, 2019

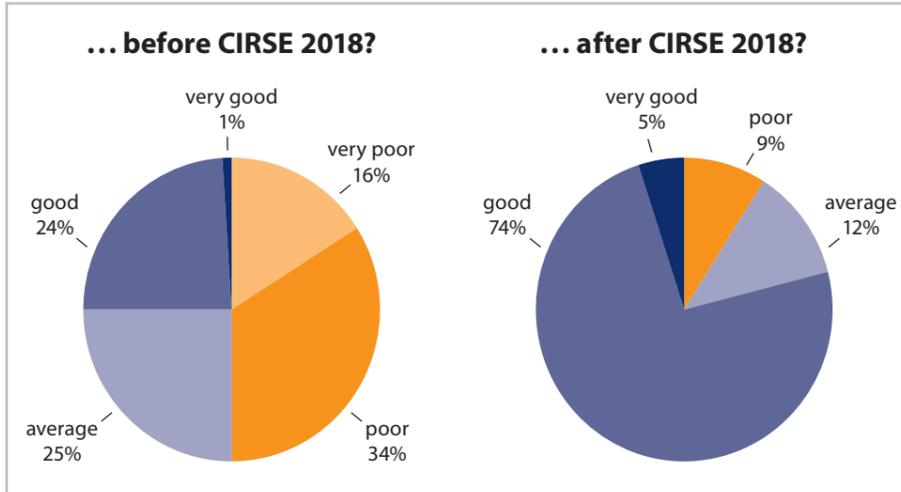
Read today's Congress News and make sure that you are one of the first two students to send the correct answers to students@cirse.org by 14:00 today!

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

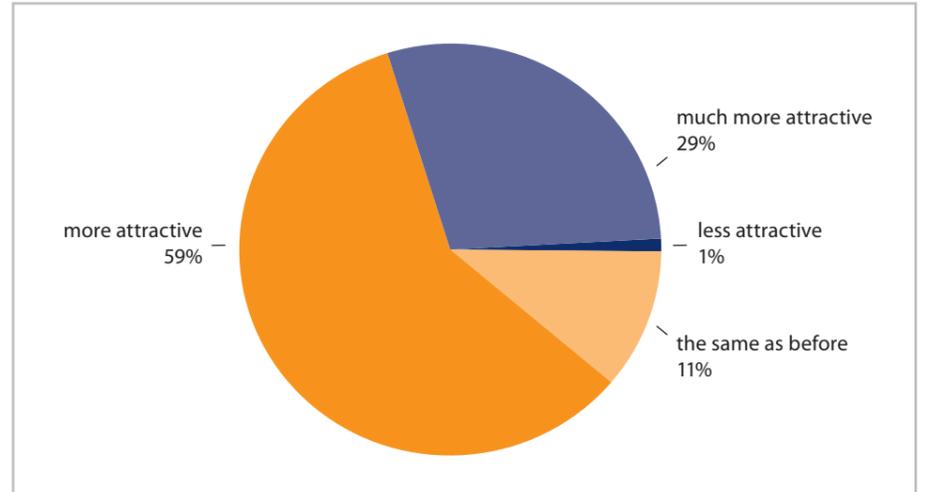
1. Which award winner has served as president for four different societies?
2. Name three Radiation Safety Talk speakers.
3. What minimally invasive procedure is an alternate to hysterectomy in the treatment of symptomatic adenomyosis?
4. Which cancer is the fourth leading cause of cancer death?
5. What key thing is needed for the efficient management and time-sensitive triaging of trauma patients?

be inspIRed...

How would you judge your knowledge of IR?



How has your experience of CIRSE 2018 affected the way you think of IR as a career choice?



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 the Czech Republic and Romania.



Anas Wardeh
Czech Republic
(Syrian nationality)
Second Faculty of Medicine,
Charles University

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

Wardeh: My decision to study medicine and my interest in IR stem from one core reason that has blossomed further during my four years in university. I was born and raised in Syria, a beautiful country that has lost a great number of its people to war. One of these victims was my high school basketball coach, who was also a great tutor in my life and a dear friend. His life slipped away due to the lack of medical attention he needed after being hit by eight bullets.

Injuries are currently the leading cause of death in Syria, accounting for over 50% of cases yearly according to the WHO. However, the rest of this proportion comes from other more familiar causes in the western world such as cardiovascular diseases and cancer. My interest in IR is to try and introduce this minimally invasive branch of medicine to my country in the future. This would offer a great opportunity for thousands of people to get an alternative, more modern approach to either save their life, or improve its quality.

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

Wardeh: IR in my eyes is a growing branch of medicine that has a great potential in the future. I actually heard about IR for the first time using social media. I follow a few medical accounts on Instagram that always present case reports with their answers. On the suggested list of accounts, there was an interventional radiologist from the United States called Dr. Michael Cellini. On his account, I saw a small incision being made in the thigh, to chemo-embolise a

tumour in the liver. That definitely got my attention.

CIRSE: Why did you decide to attend the Student Programme?

Wardeh: Two reasons. The first is to be in a place that offers the latest updates and breakthroughs in IR. IR is rapidly growing and there are always new techniques and advancements that I would like to follow. The second reason is to introduce myself to this community, whether it is meeting doctors already working in this field, or potential future colleagues and friends.

CIRSE: What would be the destination where you would like to do your IR training?

Wardeh: As I mentioned previously, I would like to introduce IR to my home country at some point in my future career. However, for my training, my goal is to be trained in Germany. It is a country that is one of the main leaders in the medical world. A chance to become an interventional radiologist in such a medically advanced country is nothing less than a dream.



Corina Adelina Zah
Cluj-Napoca, Romania
University of Medicine
and Pharmacy "Iuliu
Hatieganu" Cluj-Napoca

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

Zah: In my third year of studies, the first in the clinic, after coming into contact for the first time with various imaging techniques, I decided to search what this field is all about. My vision completely changed when I discovered the dynamic side of radiology, the interventional one, which I got to experience a little bit in my fourth year when I watched live procedures – TIPS and TAVI.

CIRSE: What would be the destination where you would like to do your IR training?

Zah: I think the destination is more of a mentor than a place. It's where someone will train me with passion and devotion; where I will be able to practice my skills under the supervision of a master; and where I will feel a sense of belonging. Whether I will find the ideal place through the best at home or in a foreign country, it has to be the place I wake up happy to go to in the morning.

CIRSE: What fields or topics in IR do you find most interesting?

Zah: The most appealing to me is interventional oncology. Why? Because when patients face problems from this field they tend to think their life is over and that's when we can show them the light at the end of the tunnel. I see endless possibilities of treatment, especially regarding oncology and this amazes me; how medicine has advanced in techniques like ablation and embolisation, something I had no clues existed when I started university. IR keeps fascinating me and I dream of using it to fascinate patients by showing them how they can get cured.

TODAY'S HIGHLIGHTS

Introducing IR
08:30-09:30, Room 116

IRT: Future IR technologies
10:00-11:00, Room 113

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

Opening Ceremony
14:30-16:00, Auditorium 1



FIRST@CIRSE – First data release on endovascular research

Research is playing an ever-increasing role in modern interventional radiology practice, and each year we see more and more high-quality abstracts submitted for inclusion in the congress.

To underpin this year's endovascular focus, a special free-paper session has been included in Saturday's programme, featuring the first data release on six exciting new endovascular studies.

Join us in Room 117 at 16:15 today to be the first to hear the latest data!

Saturday, September 7, 16:15-17:15, Room 117

FP 601 FIRST@CIRSE

First data release on endovascular research

Moderators: F. Fanelli (Florence/IT), J.H. Rundback (Teaneck, NJ/US)

e-PTFE covered stent to treat stenosis in arteriovenous fistula: a "first look" at the 12-month results from the randomized AVeNEW study

B. Dolmatch; Mountain View, CA/US

Primary endpoint results of the IN.PACT AV access randomized trial: outcomes through six months

A. Holden; Auckland/NZ

Efficacy and safety of a novel paclitaxel-nano-coated balloon for femoro-popliteal angioplasty: 2-year results of EffPac trial

U. Teichgräber; Jena/DE

Stellarex DCB in real world: 1000 patient analysis from the SAVER registry

B. Mees¹, F.E. Vermassen², G. Torsello³, A. Cremonesi⁴, A. Sauguet⁵; ¹Maastricht/NL, ²Ghent/BE, ³Münster/DE, ⁴Cotignola/IT, ⁵Toulouse/FR

ZILVER® PTX® drug-eluting peripheral stent: latest update

M.D. Dake; Tucson, AZ/US

Long-term mortality of matched patients with intermittent claudication treated by high-dose paclitaxel-coated balloon vs plain balloon angioplasty: a real-world study

K.P. Donas¹, A. Sohr¹, G.A. Pitoulis¹, F. Alfonso², G. Torsello¹; ¹Münster/DE, ²Madrid/ES



SOLVE THE CASE

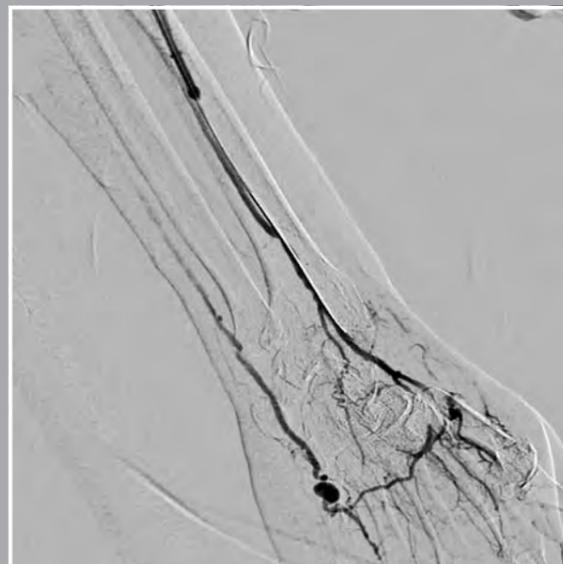
and win a ticket
to the CIRSE
Farewell Party!

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

CVIR ENDOVASCULAR

This image comes from an article in CVIR Endovascular.
What is this case about?



Designed for 

Proven Results in Post-Thrombotic & Non-Thrombotic Iliofemoral Lesions*

VENOVO[™]
Venous Stent System

* The VENOVO™ Venous Stent System was studied in the global VERNACULAR clinical trial, which was a prospective, multi-center, non-randomized, single-arm study of 170 patients. The primary effectiveness endpoint of the study was primary patency (PP) at 12 months post-index procedure. Patients who received a VENOVO™ Venous Stent had a weighted PP rate of 88.3%, demonstrating a statistically significant difference from a literature-derived performance goal (PG) of 74%, with an 81.3% PP rate for subjects with post-thrombotic syndrome and 96.9% PP rate for subjects with non-thrombotic iliac vein lesions. The primary safety endpoint was freedom from major adverse events (MAE) through 30 days post-index procedure. Freedom from MAE was 93.5%, demonstrating a statistically significant difference from a literature-derived PG of 89%. Secondary endpoints included acute technical success and stent fractures. Results demonstrated 100% acute technical success, defined as successful deployment of stent(s) to intended target with adequate lesion coverage as assessed by the Investigator at the time of the index procedure. Stents were evaluated at the 12-month follow-up for fracture analysis. An anteroposterior and lateral x-ray for each evaluated stent were sent to an independent core lab for analysis. 137 subjects' x-rays were analyzed and no stent fractures were reported. Missing x-ray analyses were recorded as protocol deviations. VERNACULAR Clinical Study. Data on File. Bard Peripheral Vascular Inc., Tempe, AZ.

The VENOVO™ Venous Stent System is indicated for the treatment of symptomatic iliofemoral venous outflow obstruction.

Please consult product labels and instructions for use for indications, contraindications, hazards, warnings, and precautions.



At Terumo Interventional Systems, we constantly **work to refine and perfect our products** so that interventionalists can do more. That is why we support great thinking that pushes back the boundaries of our field.

PUSHING BOUNDARIES

We are committed to **innovation that embraces intricacies and complexities**. Our exceptional tools and education programs empower physicians with the confidence they need to perform evermore challenging procedures and spark progress.

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.

Please note that the information has been provided by the corporate partners and does not reflect the opinion of CIRSE nor does it engage our responsibility.

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



III

Siemens Healthineers

Transforming care delivery in image-guided therapy

Minimally invasive interventions hold a vast potential for growth and innovation: the ARTIS icono family was designed to help you realize that potential.

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.

For an extraordinary visibility of details regardless of patient size and C-arm angulation, ARTIS icono features OPTIQ, a novel CNR-based image chain. Driven by intelligent, self-adjusting algorithms, it results in constant image quality independent of angulation. ARTIS icono allows you to fully focus on the procedure.

ARTIS icono. An icon of innovation.

siemens-healthineers.com/artis-icono

The ARTIS icono system and its features are not commercially available in all countries. Future availability cannot be guaranteed.



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



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 MEDSPHERE 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
- Two electrode shapes: retractable Umbrella electrodes and Straight Cooled electrodes
- 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.



CIRSE 2019

WHERE THE WORLD OF IR MEETS

V

Terumo Interventional Systems

QuiremScout®

QuiremScout® is the first and only CE-marked SIRT work-up product that utilizes the same technology as the therapeutic microspheres which aims to optimize patient selection and advance treatment planning

QuiremScout® has been shown to be more accurate than the commonly used surrogate ^{99m}Tc-MAA at predicting lung shunting¹ and intrahepatic distribution²

It has also been proven to be clinically safe in a population of 82 patients³

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

VISUALIZE SIRT SUCCESS
FROM THE START
WITH QUIREMSCOUT®



Floor Plan

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

