

7TH EDITION OF
**CARDIOLOGY
WORLD
CONFERENCE**

October 08-10, 2026
Virtual Event

VIRTUAL:

British Summer Time (BST)

7TH EDITION OF

CARDIOLOGY WORLD CONFERENCE

VIRTUAL EVENT

08-10
OCTOBER 2026

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ABSTRACTS



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Keynote Speakers



Guo-Wei He

TEDA International Cardiovascular Hospital,
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James V Cireddu

Case Western University, United States



Mekhman N Mamedov

National Research Center for Therapy and
Preventive Medicine, Russia



Sekib Sokolovic

ASA Hospital, Bosnia and Herzegovina



Sergey Suchkov

N. D. Zelinskii Institute for Organic Chemistry
of the Russian Academy of Sciences, Russia



Syed Raza

Awali Hospital, Bahrain

Keynote Speakers



Thomas J Webster
Brown University, United States



Uwe Peter Tigor
Auxilius Pharma, United States



Yochai Birnbaum
Baylor College of Medicine, United States

Welcome Message



Mekhman N Mamedov

National Research Center for Therapy and Preventive
Medicine, Russia

Dear colleagues!

Cardiovascular diseases associated with atherosclerosis remain the leading cause of mortality among adults worldwide. The use of advanced technologies and invasive procedures has somewhat improved the situation. In developed countries, in particular, we are seeing a positive trend of declining cardiovascular mortality.

However, the problem of morbidity requires the implementation of comprehensive measures, including population-wide screening and monitoring of high-risk groups. In other words, primary prevention of cardiovascular diseases remains relevant in many countries around the world. Scientific events bring together experts from different countries, facilitating the exchange of experience.

I wish the conference participants success and active communication.



Welcome Message

Sekib Sokolovic

ASA Hospital Sarajevo, Bosnia and Herzegovina

Welcome to the World Cardiology Conference!

It is our great pleasure to welcome you to the scientific event entitled 7th Edition of Cardiology World Conference (Cardio 2026), taking place from October 8-10, 2026, in Tokyo, Japan, with both in-person and virtual participation. The motto of this event is: Cardiology Innovation: Shaping the Future of Heart Health. This world cardiology conference highlights emerging trends, breakthrough research, and transformative practices that are shaping the future of cardiovascular medicine. We hope you find this conference both enriching and inspiring and that it provides valuable practical knowledge and meaningful connections.

Cardio 2026 welcomes distinguished cardiologists, cardiovascular surgeons, internists, researchers, healthcare practitioners, academicians, and innovators from around the globe to this important gathering, as well as industry experts and policymakers. Attendees will have the opportunity to engage with up-to-date research, present their findings, and actively participate in dynamic sessions, workshops, and discussions. Presentations will include original research, case studies, and expert-led sessions that inspire innovation and practical application.

Looking forward to welcoming global experts and participants engaged in the management of heart diseases to get together, share, and advance the future of cardiovascular science and patient care.

Welcome, and we wish you a successful and unique experience!

Welcome Message



Sergey Suchkov

N.D. Zelinskii Institute for Organic Chemistry of the
Russian Academy of Sciences, Russia

Dear Colleagues, Partners, Scientists, Clinicians, Bioengineers and Friends,

I look forward to welcoming you to the 7th Edition of Cardiology World Conference (Cardio 2026), to be held in Tokyo, Japan, offering a stunning Asian landscape coupled with a rich blend of modern, traditional, and ancient cultural heritage. As we delve into global cardiology-related practices, Tokyo will remind us of the importance of adaptable and culturally sensitive strategies, exquisite cuisine and warm hospitality of the City, and its resilience and charm will undoubtedly enrich our discussions and collaborations.

This prestigious congress brings together leading cardiologists, cardiac surgeons, researchers, biodesigners and bioengineers, and other healthcare and biopharma professionals to share the latest scientific knowledge and approaches to the delivery of cardiovascular care, and how these recommendations can be applied when resources are limited. The sessions will cover a wide range of topics, including, along with canonical ones like acute coronary syndrome, heart failure, arrhythmia, hypertension and congenital heart disease, segments unlocking the secrets of personalized and precision cardiology and its impact in daily clinical practice.

Along with the development of clinical aspects of canonical cardiology, we are exceedingly pleased and honored to continue the tradition of fostering innovation, collaboration, and learning in cardiology, offering an exceptional opportunity to stay at the forefront of advancements in cardiology and to taste the future of the latter. Building on the success of the preceding meetings, the Conference will feature a highly interactive, stimulating and multidisciplinary program to raise the top contributions in the upgraded cardiology-related diagnostic and treatment-related training, design-driven translational research and applications, and upgraded education of the next-step generation.

The Conference will provide the ideal forum to stimulate ideas and establish partnerships as well as to initiate intense discussions. It brings together local, regional and international speakers and participants to exchange ideas and improve best practices in cardiovascular medicine and cardiac surgery.

The core of the Event is its Scientific and Teaching Program. Beyond professional engagement, we are dedicated to making educational materials accessible to patients, their families, and the public, breaking down barriers to knowledge and understanding. The Conference underscores the significance of fostering collaboration on regional, national and international levels, which would stimulate the exchange of professional expertise among participants to lead to transformative outcomes and advancements in the field of cardiology, cardiac surgery and post-surgical rehabilitation.

We do hope that your interaction with colleagues from many different countries will stimulate a creative exchange of ideas and will be personally rewarding. We firmly believe that this extraordinary learning opportunity will provide you with passionate perspectives that will expand your knowledge and inspire you to elevate the quality of care you provide to your patients and persons-at-risk.

We look forward to welcoming you to Tokyo!

Welcome Message



Syed Raza

Awali Hospital, Bahrain

Welcome to the Cardio 2026 Conference! It is a distinct honor to host this gathering of the world's leading cardiologists, researchers, and healthcare professionals as we unite to address the global burden of cardiovascular disease.

This year's program is designed to bridge the gap between groundbreaking research and real-world clinical application. From emerging technologies to high-level plenary sessions, our goal is to foster a dynamic exchange of ideas that will shape the future of heart health.

Beyond the scientific program, we encourage you to engage with your peers, exchange ideas and share scientific knowledge. Thank you for your dedication to advancing cardiovascular excellence. We wish you an inspiring and rewarding experience at Cardio 2026!

Welcome Message



Yochai Birnbaum

Baylor College of Medicine, United States

It is a pleasure to welcome you to this important scientific event entitled Cardio 2026.

Advances in cardiovascular diagnosis, prevention and treatment depend on research. In the coming conference we will discuss various aspects of cardiovascular research and recent innovations. We have gathered an international group of researchers in various fields of cardiovascular medicine. I am confident that this conference will be productive, instructive and useful for both the attendants and the faculty.

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About Magnus Group



Magnus Group, a distinguished scientific event organizer, has been at the forefront of fostering knowledge exchange and collaboration since its inception in 2015. With a steadfast commitment to the ethos of Share, receive, grow, Magnus Group has successfully organized over 200 conferences spanning diverse fields, including Healthcare, Medical, Pharmaceuticals, Chemistry, Nursing, Agriculture, and Plant Sciences.

The core philosophy of Magnus Group revolves around creating dynamic platforms that facilitate the exchange of cutting-edge research, insights, and innovations within the global scientific community. By bringing together experts, scholars, and professionals from various disciplines, Magnus Group cultivates an environment conducive to intellectual discourse, networking, and interdisciplinary collaboration.

Magnus Group's unwavering dedication to organizing impactful scientific events has positioned it as a key player in the global scientific community. By adhering to the motto of Share, receive, grow, Magnus Group continues to contribute significantly to the advancement of knowledge and the development of innovative solutions in various scientific domains

About Cardio 2026



The **7th Edition of the Cardiology World Conference (Cardio 2026)**, scheduled to take place virtually from **October 8-10, 2026**, serves as an international platform for professionals committed to advancing cardiovascular science and heart health. Centered on the theme Cardiology Innovation: Shaping the Future of Heart Health, the conference brings together cardiologists, cardiovascular surgeons, researchers, healthcare practitioners, academicians, policymakers, and industry experts from around the world.

Cardio 2026 features a comprehensive scientific program comprising keynote and oral presentations, poster sessions, and interactive discussions. The program highlights research findings, clinical advancements, and emerging approaches across cardiology, including clinical case reports, cardiovascular imaging, structural and valvular heart disease, cardio-oncology, digital cardiology and AI, and personalized cardiology. It encourages the exchange of knowledge and ideas that contribute to improved cardiovascular care and outcomes for patients of all ages.

Through its hybrid format, **Cardio 2026** provides opportunities for participants to engage, network, and collaborate both in person in Tokyo and virtually from across the globe. The conference reflects a shared commitment to strengthening cardiovascular care through research, innovation, knowledge exchange, and interdisciplinary collaboration, while creating meaningful connections within the global cardiology community.

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KEYNOTE PRESENTATIONS





Ying-Qi Liu, Guo-Wei He*

Department of Cardiovascular Surgery & The Institute of Cardiovascular Diseases, TEDA International Cardiovascular Hospital, Tianjin University & Chinese Academy of Medical Sciences, Tianjin, China

Tianjin Key Laboratory of Molecular Regulation of Cardiovascular Diseases and Translational Medicine, Tianjin, China

Biography: Guo-Wei He, MD, PhD, DSc, is Distinguished Professor of Tianjin University, China and Academician (Foreign Correspondence Member) at The National Academy of Medicine, France (2019-). He is Vice President & Senior Cardiac Surgeon at TEDA International Cardiovascular Hospital, Tianjin University and Director of the Institute for Cardiovascular Diseases, Tianjin University & Chinese Academy of Medical Sciences. He also holds Clinical Professor of Surgery at Oregon Health & Science University, Portland, OR, USA (2003-). In addition, He is Director, Branch Center for National Clinical Research Center for Cardiovascular

Disease and Director of Tianjin Key Laboratory for Molecular Regulation and Translational Medicine of Cardiovascular Diseases. He obtained Doctor of Science (2003) and Ph.D. (1989) from Monash University, Melbourne, Australia. He was Chair Professor of Cardiothoracic Surgery, University of Hong Kong, 1995-2000 and Research Chair Professor, Chinese University of Hong Kong (2000-2009). He was Director of Cardiovascular Research Lab, St. Vincent Hospital, Portland, OR, USA (1994-2012). He is an active cardiac surgeon and performed about 8,000 open heart operations. Notably, he is the first surgeon performing radial artery plus internal mammary artery in CABG at University of Hong Kong in Asia (1995) and is well known for He Classification and He solutions for CABG grafts. Apart from clinical practice, he is an active researcher in basic science at the molecular (genetic and protein) level and obtained more than 80 research grants and awards such as First Class Award, Tianjin Municipal Natural Science Award (2012) and First Class Award, Prize of Science & Technology, The China Medicine Education Association (2021). He has supervised PhD students and postdocs for more than 30 years. He published 450 articles/reports in SCI-indexed international journals, including Circulation (IF: 41.302), Nature Reviews Cardiology (IF: 50.196), Signal Transduction and Targeted Therapy (IF: 81.197), Lancet (IF: 168.9) and Lancet Digital Health (IF: 36.615). He ranks in the top 0.05% of all scholars worldwide (ScholarGPS), is among the World's Top 2% Scientists (2019-2025) by Stanford University, and has an H-index in the world's top 1%. He ranks in the world's top 1% in Medicine, Chemistry, Genetics and Molecular Biology and is a Highly-cited Chinese Scholar in Clinical Medicine (Elsevier 2024).

Vericiguat inhibits the progress of cardiac hypertrophy and prevents hypertrophy induced heart failure by multiple mechanisms

Heart Failure (HF) is often a result of cardiac hypertrophy, and it is still the main public health challenge. Although vericiguat has been proved to be effective in treating heart failure through Soluble Guanylate Cyclase (sGC), its potential preventive effects on myocardial hypertrophy and the exact related mechanisms are still unclear. We aimed to investigate the mechanism of the effectiveness of vericiguat in treating HF, focusing on its multi-targets of therapeutic effect. Echocardiographic assessments performed after treatment of vericiguat revealed significant improvements in cardiac function compared to untreated controls (TAC+SS). Biochemically, vericiguat effectively reversed the decrease of cGMP levels observed in hypertrophic mice hearts. Histological analysis showed that hypertrophy and

fibrosis were reduced, myofibril arrangement, mitochondrial function and autophagy were improved, and the swelling of the sarcoplasmic reticulum was reduced. This study for the first time demonstrates that in addition to the direct effect of cGMP signaling, vericiguat may target and regulate HDAC1 expression and may repair sarcoplasmic reticulum swelling and enhance autophagy in hypertrophic hearts. We conclude that the preventive effect of vericiguat on the HF through multiple mechanisms and the results emphasize the potential clinical usefulness of vericiguat in the prevention of the progress of HF.



James V. Cireddu

Harrington Heart & Vascular Institute, University Hospitals,
Cleveland, Ohio, United States

Case Western Reserve University School of Medicine,
Cleveland, Ohio, United States

Biography: James V. Cireddu, MD, FACC, FASE, FASNC, is System Director of Nuclear Cardiology and Stress Testing and a Senior Attending Physician at the Harrington Heart & Vascular Institute, University Hospitals. Cireddu is Clinical Associate Professor of Medicine at Case Western Reserve University School of Medicine. Cireddu's work spans SPECT and PET myocardial perfusion imaging, stress testing, multimodality imaging, cardiovascular innovation, and responsible AI-enabled decision support. Cireddu leads Fusion CV, a University Hospitals-Case Western Reserve

collaboration developing integrated anatomic and perfusion intelligence from same-session nuclear cardiology imaging.

From attenuation correction to actionable cardiovascular intelligence: Fusion CV for AI-enhanced multimodal SPECT/PET imaging

Background: Low-Dose CT Attenuation-Correction (CTAC) images acquired during SPECT and PET myocardial perfusion imaging are often treated primarily as technical inputs, even though they contain potentially actionable anatomic information. Coronary Artery Calcium (CAC), Epicardial Adipose Tissue (EAT), perfusion findings, electrocardiographic data, and clinical context usually remain separated across imaging and reporting systems. This fragmentation can limit recognition of atherosclerotic burden and complicate interpretation of equivocal or attenuation-prone studies.

Program description: Fusion CV is a clinician-centered, AI-enabled decision-support framework designed to transform same-session CTAC into reviewable cardiovascular intelligence and integrate it with myocardial perfusion imaging. The initial workflow assesses CTAC image adequacy, segments and localizes coronary calcification, estimates CAC burden with clinically interpretable risk categories and confidence measures, and aligns coronary anatomy with perfusion territories and polar-map displays. Structured outputs and fused overlays are intended to return to the existing nuclear cardiology workflow for physician verification and reporting. Subsequent modules extend the platform to EAT quantification and multimodal models that combine perfusion, CAC/EAT, stress ECG, and clinical variables to estimate the likelihood of angiographically significant coronary disease.

Validation and clinical value: Development is organized as a staged translational program. Analytical validation will examine segmentation accuracy, CAC agreement, registration, repeatability, and failure detection. Clinical validation will evaluate diagnostic discrimination,

reclassification, prognostic associations, and performance across scanners, tracers, body habitus, and patient subgroups. Prospective usability testing will assess interpretation time, reader agreement, downstream testing, preventive treatment recommendations, and workflow integration. Potential value includes fewer equivocal interpretations and repeat studies, improved differentiation of artifact from ischemia, more consistent recognition of previously unreported coronary atherosclerosis, and better use of the information already acquired during the imaging encounter.

Conclusion: Moving CTAC from attenuation correction alone to multimodal cardiovascular intelligence represents a pragmatic path for responsible AI adoption in nuclear cardiology. Fusion CV is designed as non-autonomous clinical decision support that augments, rather than replaces, physician interpretation. Its emphasis on same-session data, uncertainty display, interoperability, auditability, and staged validation is intended to support safe translation from retrospective development to prospective clinical deployment.



Mamedov M.N.

National Medical Research Center for Therapy and Preventive Medicine, Moscow, Russia

Biography: Dr. Mamedov was born on January 10, 1970, in Azerbaijan (USSR). He completed his medical education at the Moscow Medical Academy named after I.M. Sechenov, followed by postgraduate and doctoral studies in cardiology at the National Research Center for Preventive Medicine. Since 2002, Dr. Mamedov has led the Department of Secondary Prevention of Chronic Non-infectious Diseases at the National Research Center for Therapy and Preventive Medicine. His research focuses on cardiovascular disease epidemiology, risk factors, and pharmacotherapy. Dr.

Mamedov has authored 530 articles, 17 monographs, and holds a Hirsch index of 43. He serves as the President of the Cardioprogress Foundation, is on the board of the Russian Society of Cardiology, and is Editor-in-Chief of the International Journal of Heart and Vascular Diseases.

Coronary revascularization in patients with diabetes: Prospects for stenting in patients with type 1 diabetes and coronary artery disease

Diabetes Mellitus (DM) has become a global epidemic. Its prevalence is increasing and is becoming younger among adults. Although type 2 diabetes accounts for the majority of diabetes, type 1 diabetes is also increasing. Patients with DM often have complex coronary anatomy, complicating coronary revascularization.

Coronary revascularization is considered the primary treatment for coronary artery disease in patients with type 1 and type 2 diabetes. Currently, given the anatomical lesions of the coronary arteries, CABG is considered the treatment of choice for patients with DM. In certain situations, including acute conditions, coronary artery stenting is also considered a primary treatment option. The use of drug-eluting stents significantly improves outcomes for patients with diabetes. Furthermore, some important issues of coronary revascularization in individuals with type 1 diabetes remain poorly understood.

Given the predicted increase in both type 2 and type 1 diabetes, randomized clinical trials are needed to compare the effectiveness of various coronary revascularization methods using modern technologies, as well as glycemic control and other key risk factors.



Sekib Sokolovic

ASA Hospital Sarajevo, Bosnia and Herzegovina

Biography: Sekib Sokolovic studied Medicine at Sarajevo University, Bosnia and Herzegovina, and graduated in 1983. Sokolovic received a PhD degree in 2004 at the same institution and obtained the position of Professor in Internal Medicine, Cardiology, Vascular Disease and Rheumatology there. Sokolovic gained subspecialty training in Rheumatology at the University of California Irvine, L.A., and later a subspecialty in Cardiology at the Medical Faculty of Sarajevo. Sokolovic has published research articles in SCI(E) journals, is a reviewer of many scientific journals worldwide, and is an invited

speaker at domestic and international medical scientific conferences and symposia.

New recommendations for the prevention of sudden cardiac death in athletes and recreational sports

Sudden Cardiac Death (SCD) among athletes has been increased in recent years. This high-impact event occurs from unrecognized structural or electrical heart disease in professional athletes, while in recreational sports happens in older athletes due to occult coronary artery disease. Effective prevention requires a comprehensive strategy integrating cardiovascular screening, risk stratification and emergency on time interventions. Pre-participation evaluation include personal and family history, physical examination, 12-lead electrocardiography, echocardiography, stress test, diagnostic imaging like CT, MRI and genetic testing aims to identify conditions such as cardiomyopathies, channelopathies, and inflammation that predispose athletes to lethal arrhythmias during exercise. High-Sensitivity C-Reactive Protein (hsCRP) is an established biomarker of systemic inflammation and has emerging relevance in the cardiovascular evaluation of athletes. Although hsCRP is not a direct predictor of Sudden Cardiac Death (SCD), persistent elevation may signal underlying pathological processes that increase arrhythmogenic risk during intense exercise. Transient increases in hsCRP are common following prolonged or high-intensity training; however, values exceeding 3 mg/L outside of the immediate post-exercise window are associated with heightened systemic inflammation and warrant clinical attention. Elevated hsCRP may indicate the presence of low chronic grade level inflammation or viral or immune-mediated myocarditis as a leading cause of SCD in young athletes related to overtraining, infection, autoimmune disease, or inadequate recovery. In masters athletes, chronically increased hsCRP correlates with endothelial dysfunction and potential coronary plaque instability.

Conclusion: This recommendation will provide new concrete and practical management as guideline for adequate prevention of SCD in athletes and recreational sport.



**Sergey Suchkov^{1-11,15*}, R. Holland
Cheng^{14,15}, Matt Springer^{13,15},
Marc Hendrikx¹⁶**

¹Professor in Medicine & Immunology, Director for Center for Biodesign, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Moscow, Russia

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³Senior Scientific Advisor of China Hong Kong Innovation International Business Association, Hong Kong

⁴Member, New York Academy of Sciences, USA

⁵Member, EPMA (European Association for Predictive, Preventive and Personalized Medicine), Brussels, Belgium

⁶Member, ISPM (International Society for Personalized Medicine), Japan

⁷Member, PMC (Personalized Medicine Coalition), Washington, USA

⁸Member, AMEE (Association for Medical Education in Europe), Centre for Medical Education, Dundee, Scotland

⁹Member, ACS (American Chemical Society), Washington, DC, USA

¹⁰Member, AHA (American Heart Association), Dallas, TX, USA

¹¹Member, ARVO (The Association in Research in Vision & Ophthalmology), Rockville, MD, USA

¹²Member, ISER (International Society for Eye Research), Anchorage, AK, USA

¹³Dept for Cardiology, UCSF, San Francisco, CA, USA

¹⁴College of Biological Sciences, University of California Davis, Davis, CA, USA

¹⁵New York Academy of Sciences, USA

¹⁶Faculty of Medicine and Life Sciences, University of Hasselt, Belgium

Biography: Sergey Suchkov was born in the City of Astrakhan, Russia, in a family of dynasty medical doctors. In 1980, graduated from Astrakhan State Medical University and awarded with MD. In 1985, maintained his PhD as a PhD student of Sechenov University and the Institute of Medical Enzymology. In 2001, maintained his Doctor Degree at the National Institute of Immunology, Russia. From 1989 through 1995, was Head of the Lab of Clinical Immunology, Helmholtz Eye Research Institute in Moscow. From 1995 through 2004, Chair of the Dept for Clinical Immunology, Moscow Clinical Research Institute (MONIKI). In 1993-1996, was Secretary-in-Chief of the Editorial Board, Biomedical Science, an international journal published jointly by the USSR Academy of Sciences and the Royal Society of Chemistry, UK. At present, Suchkov, MD, PhD, is Professor in Medicine & Immunology, Director for Center for Biodesign, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Moscow, Russia; R&D Director, InMedStar, Russia-UAE; Senior Scientific Advisor of China Hong Kong Innovation, International Business Association, Hong Kong; Member of The Russian Academy of Natural Sciences, Moscow, Russia; New York Academy of Sciences, USA; American Chemical Society (ACS), USA; American Heart Association (AHA), USA; European Association for Medical Education (AMEE), Dundee, UK; EPMA (European Association for Predictive, Preventive and Personalized Medicine), Brussels, EU; ARVO (American Association for Research in Vision and Ophthalmology); ISER (International Society for Eye Research); Personalized Medicine Coalition (PMC), Washington, DC, USA; and Secretary General, United Cultural Convention (UCC), Cambridge, UK.

Personalized and Precision Medicine (PPM) as a unique healthcare model through biodesign-driven translational applications and cardiology-related healthcare marketing to secure the human healthcare and biosafety

A new systems approach to diseased states and wellness result in a new branch in the healthcare services, namely, Personalized and Precision Medicine (PPM). In this context, the need for innovative heart disease treatments has become critical since the diseases remain the world's biggest killer. The pace of innovation in Personalized & Precision Cardiology (PPC) is becoming fast, including:

- (i) a success of trans-catheter aortic valve implantation for patients or persons-at-risk at lower levels of surgical risk, or procedures to ablate atrial fibrillation with high degrees of success, and other interventional procedures;
- (ii) a global shift from treating disease and preventing the secondary recurrence of cardiovascular events to the primary and even primordial biomarker-driven targeted prevention of cardiovascular risk and the promotion of cardiovascular health;
- (iii) the widespread advent of wearable and implantable technologies, allowing continuous monitoring of cardiovascular parameters;
- (iv) nanotechnology and microfluidics, AI and related areas to become the most rapidly emerging areas of cardiovascular research and the most promising technologies for improving health care and health outcomes.

The above-mentioned areas being an integral part of PPM-related cardiac research is really an interdisciplinary field that results from the application of the innovative tools to medicine and has the potential to significantly improve some canonical treatments, prevention, prophylaxis and rehabilitation. Specifically, in the field of PPC, expected to have a great impact in the near future due to its multiple advantages, namely its versatility to adapt a drug to cohorts of patients and/or persons-at-risk.

In cardiovascular disease globally, PPM may result in much-needed innovation in the field and has the potential to eventually change the way we treat heart diseases altogether. So, PPC is thus poised to become the next great revolution in the daily practice, as well as in the maintenance of cardiovascular health and the prevention and cure of cardiovascular disease. PPM disrupts standard practice and draws from clinical testing, electronic health records, multi-OMICS profiling, big datasets, and novel analytical methods, to create a person-specific phenotype to identify an optimal intervention with minimal risk.

The promise of PPM and PPC is well understood but the newest tools will be needed for describing the cardiovascular health status of individuals and populations, including transdisciplinary 'OMICS' data, exposome-related datasets and social determinants of health, behaviors and motivations, patient-generated data, and the array of data in EMRs. Innovative cardiology and cardiac nanosurgery currently lead the way in PPC advancements, and health care under PPM-related armamentarium will become a more integrated, dynamic system, in which patients are becoming central stakeholders who contribute data and participate

actively in shared decision-making. The proposal would ideally be suited for practitioners who already incorporate integrative approaches in their practice, as well as more traditional clinicians who want to learn more about PPM and PPC as a growing area.

The upgraded and new strategy includes developing an emotive brand, using more social media, and minimizing noise by reducing technical language. By leveraging the business expertise these companies have in creating relationships with consumers, we believe that our collaboration with them will help us accelerate innovation in PPM and PPC by allowing patients and thus the persons-at-risk to understand their treatment (canonical, preventive and rehabilitative ones) options deeper and better.

PPM will need to demonstrate that phenotype-based person-specific interventions are superior to the current standard of care and, ultimately, have a population effect by moving the mean on the disease spectrum towards Health. Education, Affordability, and Public Acceptance of the strategy all play key roles in its ultimate implementation. This is the reason for developing global scientific, clinical, social, and educational projects in the area of PPM-based and PPC-guided clinical cardiology to elicit the content of the new branch. In short, PPM will transform the way the physicians practice and will shake up the entire pharmaceutical value chain.



Syed Raza, MD, MRCP, FRCP, CCT, FACC, FESC

Awali Hospital, Bahrain

Biography: Dr Syed Raza graduated from Aligarh University in India in 1993. After completing his postgraduate degree in Medicine from the same university, Raza moved to the UK for higher specialist studies. Raza successfully completed MRCP and CCT and later also awarded Fellow of the Royal College of Physicians of Edinburgh. Raza was awarded professor John Goodwin prize for outstanding performance in Diploma Cardiology exam at Hammersmith Hospital, University of London in 2001. Dr Raza is Fellow of American College of Cardiology, Fellow of European Society of Cardiology and Fellow of

European Society of Cardiovascular Imaging. Raza is also on the committee of Acute Cardiovascular Care, Heart Failure and Cardiovascular Imaging (European Society of Cardiology). Raza is Review author for abstracts for European Society of Cardiology for the past three years. Obtained Diploma certificate in Medical Education from University of Cardiff, Wales in 2015. Consultant Cardiologist and Head of the department of Medicine at Awali Hospital, Bahrain. Raza is the regional educational coordinator and examiner for MRCP (PACES) exam for the Royal College of Physicians of Edinburgh. Certified Educational and Clinical supervisor, NHS-UK. Raza has to his credit numerous publications and Raza has presented his scientific work in different parts of the world. Raza is peer review author for some well respected International journals. Raza is American Board certified in Medical Quality and is involved in patient safety and quality improvement assignments during his current and previous jobs. Raza participates in key decision making for quality improvement. His special interests are Cardiovascular Imaging, Heart Failure and Acute Cardiovascular Care.

Beyond weight loss and diabetes control: GLP-1 agonists' paradigm shift in cardiovascular care

Glucagon-Like Peptide-1 Receptor Agonists (GLP-1 RAs) have emerged as a cornerstone in managing Type 2 Diabetes (T2D) and obesity, demonstrating benefits that extend far beyond glycaemic control. Initially developed for metabolic regulation, several have redefined their role by proving significant reductions in Major Adverse Cardiovascular Events (MACE), including cardiovascular death, non-fatal myocardial infarction, and non-fatal stroke.

Pivotal trials such as (liraglutide), (semaglutide), and REWIND (dulaglutide) consistently demonstrated class-wide superiority or non-inferiority in reducing MACE. Notably, the recent expanded these benefits to non-diabetic, obese patients with established cardiovascular disease, marking a paradigm shift toward broad cardiometabolic protection.

Emerging evidence from the STEP-HFpEF trial also highlights semaglutide's efficacy in improving symptoms and exercise capacity in heart failure patients with preserved ejection fraction.

The cardioprotective mechanisms of GLP-1 RAs are multifaceted, involving pleiotropic effects such as anti-inflammatory action (reducing CRP and TNF- α), improved endothelial function via nitric oxide production, blood pressure reduction, and direct anti-atherogenic properties. Furthermore, trials like FLOW have recently confirmed substantial renoprotective benefits, showing a 24% reduction in kidney failure events.

In conclusion, GLP-1 RAs provide robust cardiovascular and renal protection across diverse populations. Their ability to mitigate atherosclerotic risk and improve mortality makes them essential in modern treatment algorithms for high-risk patients. Future research on dual/triple agonists like tirzepatide continues to investigate even greater potential for cardiovascular risk reduction.



Thomas J. Webster

School of Health Sciences and Biomedical Engineering,
Hebei University of Technology, Tianjin, China

Division of Pre-College and Undergraduate Studies, Brown
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School of Engineering, Saveetha University, Chennai, India

Biography: Thomas J. Webster's (H-index: 136; Google Scholar) degrees are in chemical engineering from the University of Pittsburgh (B.S., 1995; USA) and in biomedical engineering from RPI (Ph.D., 2000; USA). Webster has served as a professor at Purdue (2000-2005), Brown (2005-2012), and Northeastern (2012-2021; serving as Chemical Engineering Department Chair from 2012-2019) Universities and has formed over a dozen companies that have numerous FDA-approved medical products currently improving human health in over 30,000 patients. Webster is currently helping those companies and serves as

a professor at Brown University, Saveetha University, Hebei University of Technology, UFPI, and others. Webster has numerous awards including: 2020, World Top 2% Scientist by Citations (PLOS); 2020, SCOPUS Highly Cited Research (Top 1% Materials Science and Mixed Fields); 2021, Clarivate Top 0.1% Most Influential Researchers (Pharmacology and Toxicology); 2022, Best Materials Science Scientist by Citations (Research.com); and is a fellow of over 8 societies. Webster is a former President of the U.S.

Cardio nanomedicine: Fighting plaque opening arteries and healing hearts

Nanomedicine, or the use of materials with at least one dimension less than 100 nm, has led to improved disease prevention, diagnosis, and treatment. This talk will cover recent advances in the use of nanomaterials to prevent, diagnose, and treat cardiovascular diseases. Specifically, nanomaterials (such as carbon nanotubes) when coupled with stem cells have been shown to reverse stroke damage and return motor function to stroke-induced rats. Moreover, vascular stents with nanotextures have been shown to improve endothelialization to reduce thrombus formation and reclogging of arteries. Further, new cardiac patches with conductive nanomaterials (such as graphene) have been shown to regenerate cardiomyocyte functions (such as growth and contractile function) to regenerate healthy cardiac tissue in the area of heart tissue damage due to heart attacks. In this manner, this talk will highlight how cardiovascular nanomedicine is being used to significantly improve numerous cardiovascular diseases in unprecedented ways.



Uwe Peter Tigör, MD

Auxilius Pharma, S.A., Warsaw, Poland

Biography: Tigör trained both in Germany and the US and earned his medical degree from Charité School of Medicine of Humboldt University, in Berlin, Germany. Tigör spent several years in cardiovascular research, focusing on heart failure and valvular heart disease, including a research fellowship in nuclear cardiology at Mount Sinai Hospital in New York. In 2019, Tigör co-founded Auxilius Pharma, a Warsaw-based biotech startup focusing on developing new, innovative treatment options for cardiovascular conditions with high unmet need such as chronic-stable angina.

Chronic angina and the health economics of cardiovascular risk reduction in macro- and microvascular coronary disease

Background: Chronic-Stable Angina Pectoris (CSAP) is the most prevalent clinical manifestation of coronary heart disease. Over the past decades, coronary disease prevention and treatment have produced tremendous morbidity & mortality gains. Conversely, prevalence and cost of CSAP as the main long-term sequela of coronary disease continue climbing. In a single decade, the US CSAP population increased from 7.8 in 2010 to 11.2M in 2020.

Current Treatment of CSAP: After decades of ever-increasing emphasis on elective revascularization, mostly using coronary stenting, CSAP outcomes trials have conclusively demonstrated the fallacy of this approach as no more effective than medication-based management. Enthusiasm about revascularization as a potentially permanent solution to CSAP symptoms also led to considerable neglect of anti-angina drug R&D, with the last innovative anti-anginal introduced in 2006. In Europe and the US, an average of 3 anti-anginals are necessary to control angina symptoms, combined with another 3 medications to control the CV risk of the underlying coronary disease. CSAP patients today represent the classic challenges of polypharmacy with all the strains of managing future cardiovascular risk, adherence, drug interactions, and escalating costs of chronic disease management.

Health Economic Implications: US total annual direct cost of managing CSAP ballooned to \$53 billion in 2025. Treating coronary disease without chronic angina costs about 50% of the outlays when CSAP is present. In addition, traditional macrovascular coronary CSAP prevalence estimates are being revised upwards as microvascular coronary disease takes center stage.

Conclusion: This keynote session will summarize existing economic strain of CSAP management in view of new treatment recommendations, highlight opportunities for cost effective management in view of potentially millions of unaccounted patients with either combined macro- and microvascular coronary disease in addition to *bonafide* microvascular angina and analyze the existing chronic angina drug pipeline in development to face these challenges.



Yochai Birnbaum, MD^{1*}, Yumei Ye, MD²

¹The Section of Cardiology, Baylor College of Medicine,
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²The Department of Biochemistry and Molecular Biology,
UTMB, United States

Biography: Yochai Birnbaum, MD, is a Professor of Medicine and the John S. Dunn, Sr. Chair for Research and Education, Baylor College of Medicine, Houston, Texas, USA. Birnbaum is the former Editor-in-Chief of Cardiovascular Drugs and Therapy, a Section Editor of the Journal of Electrocardiology and an Associate Editor of Cardiovascular Diabetology.

STEMI versus acute occlusive myocardial infarction: Which term should we use?

The original trials assessing the effects of thrombolytic therapy versus placebo included patients with compatible symptoms and were not restricted to patients with ST elevation. However, a meta-analysis that was published in Lancet in 1996 suggested that thrombolytic therapy reduces mortality in patients with ST elevation, but not in patients with ST depression. Following this manuscript, the term STEMI has been used and the guidelines addressed patients with acute coronary syndromes with ST elevation and non-ST elevation separately. However, it became apparent that some patients with chest pain have ST elevation without having an acute occlusion of an epicardial artery, and there are patients with acute occlusion of a coronary artery that do not have ST elevation above the recommended threshold. There are current attempts to refine our criteria to identify acute occlusion myocardial infarction independent of ST elevation. However, there is no evidence that acute reperfusion therapy affects outcomes in patients with acute coronary syndromes without ST elevation. The most recent European and American guidelines combine now STEMI and Non ST elevation acute coronary syndromes in one document.

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Abdul Wahed Sidiqi, MD, MSc, FESC, FAPSC, FJCS^{1,2,4*}, Gobio Alijon, MD, PhD⁵, Khaiber Sidiqi, MD, PGD^{3,4}, Narzieva Farangis⁶, Bahara Akrami², Musawer Sidiqi⁷

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Revascularization or guideline-directed medical therapy for chronic stable angina? Evidence from a prospective cohort in a resource-limited setting

Background: The optimal management strategy for patients with Chronic Stable Angina (CSA) remains under debate, especially in resource-limited settings. This study compared the efficacy and safety of Percutaneous Coronary Intervention (PCI) and Optimal Medical Therapy (OMT) in patients with CSA and single-vessel coronary artery disease in Afghanistan.

Methods: This prospective comparative study enrolled 211 patients with Chronic Stable Angina and significant single-vessel coronary artery disease between 2015 and 2017. Participants received either PCI (n=105) or Optimal Medical Therapy (n=106). Outcomes assessed at 12 months included angina symptoms, exercise tolerance, quality of life, and major adverse cardiac events.

Results: At six months, the PCI group showed significantly greater improvement in total exercise duration (+126 vs. +30 seconds, $p<0.001$) and a higher proportion of patients becoming angina-free (45.0% vs. 31.0%, $p=0.04$) compared to the OMT group. The PCI group also experienced greater improvement in psychological well-being (QoL score improvement: +8.6 vs. +2.4 points, $p=0.03$). The incidence of individual MACE components was significantly

higher in the OMT group than in the PCI group. All-cause mortality was 7.5% (n=8) in the OMT group versus 0% (n=0) in the PCI group (p=0.003), and myocardial infarction occurred in 14.2% (n=15) of the OMT group compared to 1.0% (n=1) of the PCI group (p<0.001). Crossover from OMT to PCI due to refractory symptoms occurred in 10.4% (n=11) of patients.

Conclusion: In patients with Chronic Stable Angina and single-vessel disease, PCI was superior to OMT in improving angina, exercise capacity, and quality of life at 12 months, and was associated with lower rates of mortality and myocardial infarction in this cohort. However, in low-income settings such as Afghanistan and other developing countries, where access to interventional cardiology is limited, Guideline-Directed Medical Therapy (GDMT) remains a valuable, safe, and essential alternative for the management of stable coronary artery disease.

Biography

Abdul Wahed Sidiqi, MD, MSc, FESC, FAPSC, FJCS, is an Assistant Professor of Cardiology, President of the Afghanistan Cardiovascular Association, and Chairman of Ariana Medical Complex, Kabul. After completing cardiology training in the Netherlands in 2008, Sidiqi played a leading role in establishing modern cardiology training in Afghanistan and has trained more than 100 physicians. Founded Afghanistan Cardiovascular Association in 2014, Sidiqi earned a master's degree in Invasive Cardiology in 2017, was elected a Fellow of the European Society of Cardiology (FESC) in 2023, fellow of the Asia Pacific Society of Cardiology (FAPSC) and Fellow of the Japan Circulation Society (FJCS) in 2026. Sidiqi has authored several scientific publications, including Global Rounds Afghanistan: A Critical Overview of Cardiovascular Medicine, published in Circulation, the journal of the American Heart Association. Sidiqi has been a participant speaker at major international cardiology congresses, including the World Congress of Cardiology, Cardio Hub, EuroACHD in Madrid, and the Asia Pacific Society of Cardiology Congress in Taiwan. Sidiqi received Best Presentation Awards at Cardio Hub and the EuroACHD Congress in Madrid in 2026.



Abhishek Bansal

New Era Consultancy Services, India

Finite-element and electromagnetic cardio-vascular simulation for drug testing, monitoring, and safety projection using Bansal B–Bio Framework

Cardio-vascular drug testing and safety monitoring require more than isolated drug concentration, ECG interpretation, biomarker review, or conventional hemodynamic assessment. Drug response emerges through a coupled physiological environment involving cardiac anatomy, vascular geometry, blood flow, electrophysiology, electromagnetic behavior, plasma binding, hepatic metabolism, renal clearance, electrolyte balance, and toxicity-related trajectory deviation. This work presents a finite-element and electromagnetic cardio-vascular simulation approach using the Bansal B–Bio Framework for drug testing, monitoring, and safety projection.

The proposed model represents the heart, myocardium, valves, blood, arteries, arterioles, capillaries, venules, and veins as coupled finite-element domains. The framework is organized through the Bansal Unified Variational–Tensor Framework, where geometric elements, physiological fields, polynomial/basis structures, and clinical projection operators are arranged into a unified multiphysics simulation architecture. Within this structure, vascular flow, pressure, wall shear, stenosis, microvascular resistance, venous return, congestion, myocardial deformation, and electrophysiological behavior are treated as observable projections of the evolving cardio-vascular state.

A dedicated Bansal Electromagnetic component is incorporated to represent conductivity, permittivity, permeability, ionic-field behavior, magnetohydrodynamic contribution, electrohydrodynamic interaction, and electromagnetic influence on cardio-vascular and blood-mediated transport. In parallel, the B-Pharma and B-Phyto-Pharma Framework is

used to represent drug behavior not merely as circulating concentration, but as a coupled pharmacological state involving free drug, protein-bound drug, lipid-bound drug, cell-associated drug, target interaction, ion-channel effect, metabolism, clearance, toxicity, antidote response, drug–drug interaction, and safety-alert projection.

B-Artificial Intelligence is positioned as an interpretability, pattern-support, and projection-assistance layer within the broader B–Bio system, supporting clinical review, signal organization, and safety monitoring.

This framework is designed to support interpretable clinician review by integrating anatomical geometry, vascular transport, electromagnetic response, pharmacological behavior, and drug-safety monitoring within a unified B–Bio modeling pathway. It is positioned as a review-supporting and software-oriented platform, distinct from clinical judgment, regulatory validation, or physician interpretation. The BVidAL Clinical Software Suite (Beta Version 0.16.600606) provides a foundation for SaMD-style simulation, cardiovascular digital-twin development, drug-testing workflows, monitoring systems, and safety projection across cardiac and vascular disease contexts.

Biography

Abhishek Bansal is an independent consultant, researcher, and amateur scholar whose recent work reflects over 20 years of fully self-funded, self-directed research. Bansal has proposed novel B-Equations and related engineering frameworks for impedance analysis, transformers, inverters, generators, pumps, solar systems, machinery, turbines, batteries, SMPS, and short-circuit analysis. In biomedical science, Bansal has formally claimed Novel Bansal-NonLinear Theory and Novel Bansal-Biology Theory with nine frameworks, including B-Phy, B-Chem, B-Disease, B-Pharma, B-AI, and B-Prosthetics. Bansal has developed free BVidAL Clinical Software Suite (beta version) and BVidAL RTOS (Real Time Operating System) for biomedical analysis, simulation, imaging, signals, and medical-device research.



Amadio Bianchi - Swami Suryananda Saraswati

European Yoga Federation, Italy

According to Ayurveda and Yoga, the breath, the mind and the heartbeat work at exactly the same time

This means that one can influence the other, both in terms of the onset of disease and its healing. It should also be kept in mind that this aspect is also important for prevention. Sometimes, it can be sufficient (given their mutual influence) to begin establishing a healthy balance in one of these three vital aspects to maintain or establish health in the other two as well. Naturally, when possible, the action is more profound and effective if all three aspects are considered, re-educating them and restoring them to their optimal state. Yoga and Ayurveda are masters in this.

Biography

Amadio Bianchi - Swami Suryananda Saraswati is the Founder of the World Yoga and Ayurveda Community, President of the World Movement for Yoga and Ayurveda, of the European Yoga Federation, of the International School of Yoga and Ayurveda C.Y. Surya, Vice President of the International Yoga Confederation of New Delhi, a Founding Member of the European Ayurveda Association, Advisor of the United Consciousness Global, Member of the Global Council of Hindu Leaders, and National Coordinator for Italy of the Hindu Acarya Saba. In January 2014, in Dubai, for an important international conference, Bianchi was awarded the title of Ambassador of Yoga and Ayurveda. Bianchi has operated in Italy, India, Greece, France, Latvia, Lithuania, Slovenia, Spain, Switzerland, Croatia, Portugal, Argentina, Romania, Poland, Brazil, Bulgaria, Germany, U.S.A., Slovakia and elsewhere, and is often present in major congresses as a speaker. Bianchi's numerous books dedicated to yoga and Ayurvedic disciplines are widespread and used in many schools and associations.



Amanda Tan Wei Zhen

Glangwili Hospital, United Kingdom

Management of valvular heart disease as per ESC/EACTS 2025

Valvular Heart Disease (VHD) remains a major and growing cause of cardiovascular morbidity and mortality, particularly in ageing populations. The recent ESC/EACTS 2025 Guidelines provide an updated, evidence-based framework for the diagnosis, risk stratification, and management of patients with native and prosthetic valve disease. This guideline places strong emphasis on the role of multidisciplinary Heart Teams and specialist Heart Valve Centres to ensure timely, patient-centred, and high-quality care, with appropriate selection of both surgical and transcatheter interventions.

One of the update to this guidance is in diagnostic imaging. Transthoracic and transoesophageal echocardiography remain the cornerstone of assessment, while cardiac CT and MRI, is increasingly utilised to improve diagnostic accuracy, guide procedural planning, and refine risk stratification. The guidelines also update diagnostic thresholds and expand indications for intervention, particularly in aortic stenosis and mitral regurgitation. There is a growing emphasis on earlier intervention, including in selected asymptomatic patients, where evidence suggests improved long-term outcomes compared to a watchful waiting approach.

The role of less invasive transcatheter therapies continues to expand. Procedures such as Transcatheter Aortic Valve Implantation (TAVI) and transcatheter edge-to-edge repair are increasingly recommended in appropriately selected patients, including those at intermediate or even lower surgical risk in certain clinical scenarios. This reflects accumulating evidence supporting their safety, efficacy, and durability.

In addition, the guidelines highlight the importance of individualised care and shared decision-making, taking into account patient comorbidities, frailty, and preferences. Recommendations are also provided for complex clinical situations like multivalvular disease, cancer, pregnancy, and acute heart failure. Attention is also given to optimising antithrombotic therapy and reducing under-treatment across different patient groups.

Overall, the 2025 ESC/EACTS Guidelines aim to integrate surgical and transcatheter approaches within a patient-specific, evidence-based framework to improve survival, reduce complications, and enhance quality of life in patients with Valvular Heart Disease.

Biography

Amanda Tan Wei Zhen is currently a Senior House Officer with the NHS. Tan completed undergraduate medical training at Manipal University College Malaysia graduating in 2021. Tan has a special interest in Cardiology and is particularly passionate about evidence-based clinical practice. Tan is committed to continuous professional development and is actively building a portfolio in both research and medical education. Tan aims to integrate academic learning with frontline clinical care to improve outcomes in cardiovascular medicine.



Belousov AN^{1,2*}, Belousova EYu¹

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Magnetite nanoparticles as modulators of erythrocyte electrophoretic mobility in toxemic conditions: A nanomedical strategy for hemorheological correction

A decrease in erythrocyte electrophoretic mobility serves as an important diagnostic marker of pathological conditions associated with impaired gas exchange, microcirculation, and tissue trophism, often leading to systemic hypoxia and deterioration of the patient's clinical status. This study investigates the potential of magnetite nanoparticles (MCS-B) to modulate these properties in a targeted and controlled manner. A novel approach is proposed to enhance erythrocyte electrophoretic mobility in patients with toxemia through treatment with magnetite nanoparticles. In vitro experiments demonstrated a statistically significant ($p < 0.001$) increase - nearly threefold - in erythrocyte mobility following exposure to MCS-B, compared to untreated controls. The optimal efficacy was observed at a blood-to-nanoparticle ratio of 2:1. Furthermore, application of a constant magnetic field with an intensity of 200–250 kA/m for 2–3 minutes resulted in effective removal of residual nanoparticles from blood samples ($p < 0.001$). The results highlight the biocompatibility and clinical potential of this nanomedical approach, which may serve as a basis for new therapeutic strategies in transfusion medicine, critical care, and regenerative therapy. The study addresses a pressing interdisciplinary challenge, bridging hematology, biophysics, and nanotechnology, with implications for both basic science and clinical implementation

Biography

Andrey N. Belousov, MD, PhD, Professor - a Ukrainian medical scientist and pioneer in nanotechnology, who developed the world's first biocompatible nanomedical drugs (Micromage-B, MCS-B, ICNB), officially registered and introduced into clinical practice since

1998. Belousov's work established a translational foundation for medical nanotechnology, linking fundamental biophysics with clinical applications in detoxification, hemocorrection, and neuroprotection. He published more 340 scientific works on results application of nanotechnology preparation in experimental and practical medicine. At now Andrey Belousov - the Head of Laboratory Applied Nanotechnologies, Professor of Kharkiv National Medical University, Ukraine.



Burcu Yagmur, MD

Department of Cardiology, University of Kyrenia,
Northern Cyprus

Beyond the heart in cardiovascular magnetic resonance imaging: Prevalence and clinical significance of incidental extracardiac findings

Cardiovascular Magnetic Resonance (CMR) imaging provides comprehensive tissue characterization and plays a central role in the evaluation of a broad spectrum of cardiovascular diseases. Because routine CMR acquisition also includes portions of the thorax and upper abdomen, Incidental Extracardiac Findings (IECFs) are frequently encountered and may have clinical consequences beyond the primary cardiac indication. This single-center retrospective study evaluated 597 consecutive patients who underwent clinically indicated CMR between 2021 and 2025. The prevalence, anatomical distribution, and clinical significance of IECFs were assessed using a structured three-tier risk-stratification model: Tier 1, benign or normal variants; Tier 2, potentially significant findings; and Tier 3, clinically significant findings requiring prompt evaluation or management.

IECFs were identified in 204 patients (34.2%). Among the total cohort, 98 patients (16.4%) had Tier 1 findings, 87 (14.6%) had Tier 2 findings, and 19 (3.2%) had Tier 3 findings. Overall, 106 patients (17.8%) met the actionable threshold defined by Tier 2 or Tier 3 findings, and 61 patients (10.2% of the total cohort) underwent downstream diagnostic imaging, subspecialty consultation, or therapeutic management. The liver/biliary system (9.5%) and lungs/pleura (7.0%) were the most frequently involved anatomical regions. Although less common overall, mediastinal and lung/pleural lesions showed the highest proportions of Tier 3 abnormalities, at 21.4% and 19.0%, respectively. In multivariable logistic regression, advancing age (OR 1.29 per decade, 95% CI 1.13–1.48; $p < 0.001$) and referral indications other than cardiomyopathy, myocarditis, or ischemia (OR 2.20, 95% CI 1.33–3.64; $p = 0.002$) independently predicted actionable findings.

These findings demonstrate that systematic review of the extracardiac field of view during routine CMR can provide clinically meaningful additional information. A tiered reporting approach may help prioritize relevant abnormalities, support appropriate downstream care, and reduce unnecessary investigations of benign findings.

Biography

Burcu Yagmur, MD, is a board-certified cardiologist and associate professor candidate specializing in Cardiovascular Magnetic Resonance (CMR) imaging and preventive cardiology at University of Kyrenia. Yagmur's academic work focuses on advanced cardiac imaging, tissue characterization, non-ischemic cardiomyopathies, pericardial syndromes, and lipid-lowering pharmacotherapies. Yagmur has authored multiple peer-reviewed systematic reviews, meta-analyses, and clinical observational studies in high-impact international cardiovascular journals.



Burcu Yagmur, MD

Department of Cardiology, University of Kyrenia,
Northern Cyprus

Not so idiopathic after all: Genotype, phenotype and IL-1 blockade response converge in recurrent pericarditis

Recurrent Pericarditis (RP), historically labeled idiopathic, is increasingly recognized as an NLRP3 inflammasome/Interleukin-1 (IL-1)–driven autoinflammatory syndrome. This study quantitatively synthesizes genetic-architecture and IL-1 blockade trial data in Idiopathic/Recurrent Pericarditis (IRP/RP) to evaluate the case for genotype- and biomarker-informed treatment selection.

A structured search (PubMed/Embase, 2010–2026) was conducted for Next-Generation/Whole-Exome Sequencing (NGS/WES) autoinflammatory gene screening cohorts and Randomized Controlled Trials (RCTs) of IL-1 blockade. Pooled NGS/WES cohorts (n=366) demonstrated inflammatory-gene variants in 14.8–22.9% of patients, with MEFV significantly enriched compared to reference controls (P=0.040). Genetically positive patients exhibited higher rates of fever (76.7% vs. 49.5%) and elevated CRP (93.3% vs. 77.2%). Independent RCTs (AIRTRIP, RHAPSODY, goflিকেপ্ত phase II/III) demonstrated striking, concordant reductions in recurrence risk with IL-1 blockade (up to 96% risk reduction, all P<0.001). These findings confirm that genetic and clinical trial evidence converge on a reproducible autoinflammatory IL-1 axis, strongly supporting precision-guided management in RP.

Biography

Burcu Yagmur, MD, is a board-certified cardiologist and associate professor candidate specializing in Cardiovascular Magnetic Resonance (CMR) imaging and preventive cardiology at University of Kyrenia. Yagmur's academic work focuses on advanced cardiac imaging, tissue characterization, non-ischemic cardiomyopathies, pericardial syndromes, and lipid-lowering pharmacotherapies. Yagmur has authored multiple peer-reviewed systematic reviews, meta-analyses, and clinical observational studies in high-impact international cardiovascular journals.



Danish Malik*, Muhammad Arslan Tariq, Mohamed Alagili

University Hospitals Dorset NHS Foundation Trust,
United Kingdom

Improving screening and treatment of iron deficiency in patients with heart failure with reduced ejection fraction: A two-cycle quality improvement project

Background: Iron deficiency is common in patients with Heart Failure with Reduced Ejection Fraction (HFrEF) and is associated with worse symptoms, reduced exercise capacity, and increased hospitalisation. Contemporary guidelines recommend assessment of iron status using serum ferritin and Transferrin Saturation (TSAT), with intravenous iron recommended for eligible patients. We evaluated adherence to these recommendations among cardiology inpatients and implemented interventions to improve recognition and treatment of iron deficiency.

Methods: A two-cycle retrospective quality improvement project was conducted among adult cardiology inpatients with documented left ventricular ejection fraction <45%. Patients receiving end-of-life care or recent intravenous iron were excluded. 30 patients were included in each cycle. Electronic records were reviewed to determine whether iron studies were performed and whether eligible patients received iron replacement. Following cycle 1, targeted educational interventions were introduced, comprising posters displayed on cardiology wards highlighting appropriate investigation and management of iron deficiency in HFrEF, alongside teaching sessions delivered to resident doctors. A 2nd cycle was subsequently undertaken to assess change in practice.

Results: In cycle 1, 12/30 (40%) patients underwent assessment of iron status. 9/12 screened patients (75%) met criteria for iron deficiency, of whom only 1/9 (11.1%) received treatment. Following intervention, screening increased to 24/30 (80%) patients in cycle 2, representing a doubling in the proportion of HFrEF inpatients assessed for iron deficiency. 13/24 screened patients (54.2%) were iron deficient, of whom 4/13 (30.8%) received treatment. Across both

cycles, 22/36 (61.1%) adequately screened patients were iron-deficient. Despite improved screening, a substantial treatment gap remained, with fewer than one-third of iron-deficient patients receiving treatment in cycle 2.

Conclusion: Iron deficiency was common but underrecognised and undertreated among HFrEF inpatients. Following ward-based posters and targeted teaching for resident doctors, appropriate iron screening increased from 40% to 80%, while treatment of identified iron deficiency increased from 11.1% to 30.8%. However, persistent treatment gaps remain. Further interventions including a standardised HFrEF admission blood bundle incorporating ferritin and TSAT, alongside a dedicated pathway for intravenous iron administration, may improve delivery of care.

Biography

Danish Malik is an FY2 doctor at Royal Bournemouth Hospital. Malik studied medicine at Balliol College, University of Oxford, where Malik completed a BA in Medical Sciences followed by a medical degree (BMBCh). Clinical interests of Malik include cardiology, oncology and acute medicine. Malik has contributed to clinical research, audit and quality improvement projects, with a particular interest in improving the delivery of evidence-based patient care.



Ermiyas Berehanu Hayle

Hallelujah General Hospital, Ethiopia

Dilated cardiomyopathy in Africa: Burden, etiologic contributors, and the need for early intervention

Dilated Cardiomyopathy (DCM) is one of the most important causes of heart failure and premature death globally, yet its burden is far from uniform. In developing nations—where diagnosis is often delayed, access to specialized cardiac care is limited, and multiple overlapping health problems are the norm—DCM can account for a disproportionately large share of preventable illness and disability. Across Africa, DCM has emerged as a major driver of heart failure, shaping the course of cardiovascular disease for millions of young and middle-aged adults.

A recent systematic review of 24 studies from 16 sub-Saharan African countries reveals that DCM accounts for about 20–32% of heart-failure cases, with striking variation by setting—from roughly 7% in Nigeria to over 50% in Rwanda. This spectrum reflects a high and heterogeneous disease burden, shaped by diverse contributors such as post-viral processes, alcohol use, peripartum cardiomyopathy, drug intake, autoimmune and nutritional factors, thyroid disorders, HIV, and arrhythmias, alongside a large proportion of idiopathic cases.

This presentation synthesizes available data on the prevalence and etiologic contributors to DCM across African populations, integrating evidence from regional studies and broader African literature. By highlighting the epidemiologic patterns and system-level gaps—from late diagnosis and limited access to echocardiography to shortages of internists, cardiologists, and specific heart-failure drugs—the talk aims to clarify the true scale of DCM in Africa, spotlight priorities for early screening and targeted intervention, and catalyze practical strategies to halt progression to heart failure and premature death in African populations.

Biography

Ermiyas Berehanu Hayle is a distinguished internal medicine specialist and certified nutrition and fitness expert in Ethiopia, committed to advancing healthcare through exemplary clinical practice and innovative research. With expertise in diverse settings, from resource-limited environments to advanced hospitals, Hayle excels in both private and public sectors. Hayle's research focuses on improving patient outcomes, while interests in fitness, nutrition, digital health, and healthcare administration reflect a visionary leadership in shaping the future of medicine.



Francesco Fiumara, MD*, Victoria Fiumara, MD, Angelina Isaac, Sajid Mirza, MD

John F. Kennedy Medical Center, Florida, United States

Pericardial constraint and pulmonary hypertension: A case series

Invasive hemodynamic assessment with right heart catheterization is currently indicated when the clinical assessment of volume status does not match the physiologic response to treatment, cardiogenic shock, and for the evaluation of advanced therapies such as heart transplant and left ventricular assist device implantation. Right heart catheterization should always be performed at euvolemia. Isolated pre-capillary pulmonary hypertension that results from pericardial constraint may mask itself as a combined pre- and post-capillary pulmonary hypertension. If a patient is found to be hypervolemic at the time of hemodynamic assessment, the procedure should then be repeated once the patient has received adequate diuresis. We present a series of cases that emphasize the importance of accurate diagnosis to allow for effective treatment of these patients. Pericardial compliance is directly affected by the volume status, and hypervolemic conditions may overestimate the pulmonary pressures, whereas a hypovolemic state may underestimate the pulmonary pressures. Late in disease, pericardial constraint may develop which would result in elevated left atrial pressures and an inability to accommodate a hypervolemic state. This is problematic, because if a right heart catheterization is performed for the evaluation of isolated pre-capillary pulmonary hypertension and the patient is hypervolemic, a false negative result may be present. In these cases, the hemodynamics may indicate that the underlying diagnosis is a combined pre- and post-capillary pulmonary hypertension. In each of the four cases presented, repeating the right heart catheterization once euvolemic allowed for correct re-classification as isolated pre-capillary pulmonary hypertension. This study emphasizes the importance of understanding how loading conditions affect the pericardial compliance and its impact on intracardiac pressures at the time of invasive hemodynamic assessment. Adequate diuresis is imperative prior to performing right heart catheterization in order to correctly classify the pulmonary hypertension. Patients who have true isolated pre-capillary pulmonary hypertension benefit

from vasodilator therapies and other pulmonary hypertension specific medical management as per the pulmonary hypertension guidelines. Contrary to this, patients with mixed pre- and post-capillary pulmonary hypertension do not benefit from these medications, and it may cause harm. There are a large portion of patients with isolated pre-capillary pulmonary hypertension who may still benefit from pHTN specific medical management, and our objective is to help identify this patient population.

Biography

Francesco Fiumara, MD is a cardiologist who is currently completing fellowship training at the John F. Kennedy Medical Center in Florida, United States. Fiumara earned a medical degree from Ross University School of Medicine and completed an internal medicine residency training at the University of Miami, Palm Beach campus. After completing internal medicine training and prior to starting the cardiovascular disease fellowship, Fiumara practiced as an inpatient academic teaching attending for the internal medicine residency program at the University of Miami, Palm Beach Campus. Fiumara plans to practice general cardiology upon the completion of training.



Franz Porzsolt

Private Research Institute Clinical Economics, Germany

The individual risk profile of the patient and the health added value of the interventions define the affordability of health care

1. The re-allocation of resources guarantees the financial viability of healthcare.
2. Re-allocation is based on evidence of objective Proof of Principle (POP), Real-World Effectiveness (RWE), and Subjective Value (VAL). The suitability of all AI products must be confirmed by compliance with the designer rule Form Follows Function.
3. Progress will be supported by:
 - a. Three-dimensional measurement of POP, RWE, and VAL.
 - b. Evaluation of the risk-dependent added value instead of the production costs.
 - c. A third form of care, the Pragmatic Controlled Trial (PCT), complementing the existing Care as Usual (CAU) and the Randomized Controlled Trial (RCT).
 - d. Structured scientific questions clarify the answers obtained.
 - e. Truncated RCTs accelerating POP and reducing their costs.
 - f. The three-dimensional Cube of Clinical Care (CCC) replacing the one-dimensional pyramid of levels of evidence.
 - g. Professional separation of supply and documentation.
 - h. No more needed additional support of health budgets.

Biography

Franz Porzsolt, MD, PhD, is a clinical researcher and founder of the Private Research Institute Clinical Economics, Germany. He trained at Philipps University Marburg and held senior positions in Hematology and Medical Oncology at the University Hospital Ulm, where he also served as Scientific Secretary of the Comprehensive Cancer Center. A grantee of the German Research Association (DFG), he has held visiting professorships at the Mayo Clinic (USA) and multiple Brazilian universities, and has served as a reviewer for the International Atomic Energy Agency (IAEA). Since his retirement in 2011, he has continued independent research in clinical economics



Sarsenbaeva Gulzhan

Institute of Surgery, Almaty, Kazakhstan

Rare cardiovascular diseases encountered in pediatric cardiac surgery and cardiology

In domestic cardiac surgery, there is currently a trend towards an increasing incidence of complex, combined, and rare pathologies of the heart and blood vessels in children.

The purpose of the report: to study rare congenital heart anomalies encountered in pediatric cardiac surgery and cardiology.

Material and Methods: 80 children with Congenital Heart Disease (CHD). All children underwent standard examinations: ultrasound examination of the heart and blood vessels, ECG, CT, laboratory and histological studies, and examination of macropreparations.

Results: Among the patients were: Newborns - 22; up to 1 year - 35; up to 5 years - 23 patients. We diagnosed: congenital dilated cardiomyopathy with low ejection fraction up to 31% in 2 newborn; multiple rhabdomyomas of the heart - in 4, in one of whom congenital tuberous sclerosis (Pringle-Bourneville disease) was confirmed; mitral valve and left ventricle fibroma in a newborn- in 4; right atrial cyst - 1, mitral and aortic valve defects with the development of severe myxomatous deformation and insufficiency were observed in 46 children with mucopolysaccharidosis; transposition of the great vessels with total anomalous drainage of the pulmonary veins - 1; syndrome of anomalous origin of the left coronary artery from the pulmonary trunk (Bland-White-Garland syndrome)-4; double origin of the great vessels from the right ventricle with dextrocardia - 1; congenital complete atrioventricular block - in 2 newborns; Abernethy syndrome - in 2; arteriovenous malformation - 2, 1- chylous pericarditis; cystic fibrosis - 3; parasitic infection with Echinococcosis - 3 children; idiopathic dilatation of the pulmonary artery trunk-2; Congenital pulmonary lymphangiectasia with total anomalous pulmonary venous drainage-4.

26 children underwent surgery: radical excision of cardiac lesions in 2, pacemaker implantation in 2; radical correction of Congenital Heart Disease on open heart – 8. 4 children died after surgery, 1 – before surgery. 44 patients received conservative therapy.

Thus, there are difficulties in diagnosing and treating rare cardiac anomalies and diseases. These patients are more likely to develop complications in the postoperative period, and their clinical course is unique. Diagnosing rare and complex congenital heart defects requires a more thorough examination of the patient's medical history and manifestations, as well as a broad range of tests, necessitating referral of these children to specialized cardiac surgery and cardiology centers.

Biography

Sarsenbaeva Gulzhan - Doctor of Medical Sciences, Associate Professor, Pediatric Cardiac Surgeon. Author of over 100 scientific publications, developer of a comorbidity scale in pediatric cardiac surgery. Sarsenbaeva completed postgraduate and doctoral studies at the A.N. Bakulev Scientific Center for Cardiovascular Surgery in Moscow. Sarsenbaeva defended a dissertation on comorbidity in pediatric cardiac surgery patients. Sarsenbaeva currently works as a cardiac surgeon at the Surgery Center in Kazakhstan and teaches in the Department of Cardiac Surgery at the university. Director of the branch of the Association of Specialists in the Treatment of Children's Hearts. Sarsenbaeva is studying comorbidity in pediatric cardiac surgery patients.



Iris Panagiota Efthymiou

Regent College London, United Kingdom

AI-powered behavioral economics in geriatric cardiology: Nudging heart-healthy decisions for aging populations

As global populations age, geriatric cardiology faces the dual challenge of managing complex cardiovascular conditions while addressing behavioral barriers to adherence and prevention. This presentation explores the transformative role of Artificial Intelligence (AI) in integrating behavioral economics principles into geriatric heart care. By leveraging AI-driven predictive analytics, personalized nudges, and real-time digital interventions, clinicians can effectively influence patient decision-making to improve medication adherence, lifestyle modifications, and engagement with preventive strategies. Drawing on insights from behavioral health and economics, the talk will highlight AI applications such as machine learning models for risk stratification in elderly patients, chatbots delivering tailored behavioral prompts, and wearable-integrated systems that apply choice architecture to promote sustained heart-healthy behaviors. Case studies and emerging evidence demonstrate how these AI-enhanced approaches reduce readmission rates, enhance quality of life, and optimize resource allocation in cardiovascular care for older adults. The discussion will also address ethical considerations, implementation barriers, and future directions for scaling AI-behavioral interventions in hybrid clinical settings. Attendees will gain actionable insights into harnessing AI to bridge the gap between clinical knowledge and human behavior in geriatric cardiology.

Keywords: Geriatric Cardiology, Artificial Intelligence, Behavioral Economics, Behavioral Health, Cardiovascular Prevention, Personalized Nudges, Aging Population, Digital Health Interventions, Patient Adherence, Heart Failure Management.

Biography

Iris Panagiota Efthymiou is a behavioural economist, FHEA-accredited Senior Lecturer, and public intellectual with a PhD in Behavioural Health Economics (Magna cum Laude) and an MSc in Health Economics and Management (First Class). Efthymiou has held senior teaching and research positions at the University of Greenwich, University of East London, Brunel University, University of Roehampton, Frederick University Cyprus, Regent College London (University of Greater Manchester), and the Institute for Study Abroad (IFSA) London, and is an Academic Board Member of LabHEM at the University of Piraeus. Efthymiou is the author of 22 books and over 80 peer-reviewed articles published through Springer and IGI Global, Chief Editor of the Journal of Politics and Ethics in New Technologies and AI, an Advisory Council Member of the Harvard Business Review, and a Member of BIC and the UK All-Party Parliamentary Group on Artificial Intelligence.



João Rafael De Oliveira Rocha da Silva

Connect Life Rehabilitation and Performance, Ubatuba, São Paulo, Brazil

Rehabilitation of patients with chronic pain and cardiovascular dysfunction

Chronic pain is associated with the leading cause of disability in the world, just as cardiovascular diseases represent the highest incidence of death in the world.

Both pathologies generate a high demand for health services and represent a high global population risk.

In previous studies, it was possible to observe a high incidence of the development of cardiovascular diseases in individuals with Chronic Pain, which was also correlated with the high incidence of the development of chronic pain in individuals with cardiovascular dysfunctions.

In order to better approach these patients, it is necessary to understand these pathologies better.

For this reason, recent studies have observed pathophysiological changes and changes in motor control in individuals with chronic pain that must be evaluated and taken into account when developing rehabilitation protocols.

Knowledge of possible limitations and adaptations is necessary in individuals with heart disease, using treatment methods such as the practice of therapeutic exercises, which optimize functional capacity and improve the cardiovascular system, with the aim of optimizing the health and quality of life of these individuals, so that they have the physical capacities necessary to change habits and include the practice of physical activities.

We will discuss important aspects in the rehabilitation of individuals with Chronic Pain and Cardiovascular Dysfunction, in a multimodal manner, in an outpatient phase, highlighting the importance of prevention and treatment, presenting the main current scientific references.

Biography

João Rafael Rocha da Silva has been a clinical physiotherapist for over 15 years, with a postgraduate degree in rehabilitation applied to sport from the Department of Orthopedics and Traumatology at the Escola Paulista de Medicina CETE- UNIFESP, also having a postgraduate degree in Improvement in assessment and interdisciplinary treatment in Pain at the Hospital das Clínicas of the Faculty of Medicine of the University of São Paulo HC-FMUSP. Rocha da Silva recently published six studies related to pain management, which were presented at international conferences and congresses. Rocha da Silva is a scientific reviewer and editor for international journals.



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Sex-specific metabolic reprogramming by nanoemulsified policosanol-simvastatin combinations: Synergistic regulation of the IIS pathway and BMM-mediated lipolysis in a *Drosophila* model of metabolic syndrome

Background: Cardiovascular Diseases (CVDs) and Metabolic Syndrome (MetS) exhibit profound sexual dimorphism, yet many pharmacological interventions remain non-specific. While statins are the gold standard for dyslipidemia, suboptimal efficacy and side effects necessitate precision combinatorial approaches.

Objective: This study investigates the mechanistic efficacy of nanoemulsified Simvastatin (SIM) and Policosanol (POL) combinations in reprogramming the Insulin/IGF-1 Signaling (IIS) pathway and lipid mobilization in *Drosophila melanogaster*.

Methods: Nanoemulsions were synthesized using high- and low-energy methods, and administered to a High-Fat, High-Sugar (HFHS) induced MetS model. We utilized biochemical profiling, gene expression analysis of the BMM-FOXO-AKH axis, and Combenefit-based Loewe additivity modeling to assess sex-specific synergy.

Results: Nanoemulsions were stable with particle sizes <200 nm (29.86 nm to 121.9 nm) and Polydispersity Index (PDI) values between 0.283 and 0.463. In both sexes, treatments significantly ($p < 0.001$) reversed HFHS-induced hyperglycemia and hyperlipidemia. Notably, males exhibited synergy in glucose control (T7, T9) through a catabolic switch involving massive upregulation of AKH and FOXO. Conversely, females showed high sensitivity in ILP2 signaling and synergistic lipid modulation (T7, T8) driven by widespread BMM lipase upregulation.

Conclusion: Nanoemulsified POL-SIM combinations effectively modulate lipid and carbohydrate metabolism by regulating the Insulin/IGF-1 Signaling (IIS) pathway. This highlights a promising precision-medicine framework for CVD prevention.

Keywords: *Drosophila Melanogaster* Insulin/IGF-1 Signaling (IIS) Pathway, Nanoemulsion, Policosanol, Simvastatin, Metabolic Syndrome, Sexual Dimorphism, Cardiovascular Diseases.

Biography

Lawal Kayode Olatunji is a distinguished Medical Doctor and academic with an extensive background spanning Public Health, Pharmacology, and Clinical Medicine. Lawal holds dual Doctorates: a PhD in Pharmacology from Usmanu Danfodiyo University Sokoto (UDUS) and a PhD in Public Health from the Universidad de Central Nicaragua (UCN). With dual PhDs in Pharmacology and Public Health, Lawal bridges the gap between clinical practice and academic innovation. Lawal's work specializes in chronic disease management, cardiovascular pharmacology, ethno-pharmacology, antimicrobial resistance and health systems strengthening.



**Lozan Hussein Mahmood
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University Hospitals Birmingham, Birmingham,
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Improving compliance with venous thromboembolism prophylaxis prescribing in cardiology inpatients: A prospective re-audit

Background: Venous Thromboembolism (VTE) prophylaxis is an important patient-safety process in acutely admitted cardiology patients, where immobility, heart failure, myocardial infarction and invasive cardiac procedures can increase thrombotic risk while complex antithrombotic regimens may create prescribing uncertainty. A previous audit of 510 cardiology inpatients showed suboptimal prescribing on admission, with appropriate prophylaxis or a valid reason documented in 53% of patients, 28% experiencing delayed prescribing, and 18.6% never receiving prophylaxis without a valid reason.

Objectives: To assess whether VTE prophylaxis prescribing improved following the first audit cycle and to identify persistent causes of omission or delay.

Methods: A prospective re-audit was undertaken of 200 consecutive patients admitted under cardiology between 10 June and 10 July 2026. Eligible patients were admitted for a cardiac-related diagnosis. Data were collected on admission date, ward, diagnosis, enoxaparin prescribing at admission, dose accuracy, delayed prescribing, documented reason for non-prescription, and VTE events during admission or within four weeks of discharge.

Results: Overall, 127/200 patients (63.5%) had enoxaparin prescribed at admission. Among 73 patients not prescribed prophylaxis at admission (36.5%), 28 (38.4%) had a valid documented reason, most commonly direct oral anticoagulant therapy (n=15), warfarin (n=7) or fondaparinux (n=3); other reasons included thrombocytopenia (n=2) and aortic dissection (n=1). Therefore, 155/200 patients (77.5%) were either prescribed prophylaxis at admission

or had a valid reason for omission, compared with 53% in the first cycle. Of the 45 patients without a valid initial reason, 34 were subsequently prescribed prophylaxis: 11 after one day, nine after two days, nine after three days and five after five days. Eleven patients (5.5%) had ongoing omission without a valid documented reason, reduced from 18.6% previously. All prescribed doses were appropriate, improving from approximately 95% in the first cycle to 100% in the re-audit. No inpatient VTE events or VTE-related readmissions within four weeks were identified.

Conclusions: The re-audit shows a clear improvement in admission prescribing and dose accuracy, with fewer delayed prescriptions and fewer unexplained omissions. However, delayed recognition remains an issue, particularly when patients are not anticoagulated on admission. Embedding an admission proforma prompt, reinforcing guidance around antithrombotic overlap, and continuing pharmacist/doctor feedback may help convert improvement into reliable routine practice.

Biography

Lozan Hussein Mahmood Zangana is a Foundation Year 2 doctor working in the West Midlands, UK. Lozan has a particular interest Cardiology and Lozan is actively involved in clinical research, quality improvement, and medical education. Lozan is keen to develop her academic and clinical experience within cardiovascular medicine and plan to pursue specialist training in Cardiology.



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Cardiac troponin and homocysteine levels in hemodialysis patients: Association with dialysis vintage and cardiovascular comorbidity

Introduction: Cardiovascular disease remains the leading cause of morbidity and mortality in patients with End-Stage Renal Disease (ESRD) undergoing maintenance hemodialysis. Elevated cardiac troponin and homocysteine concentrations are frequently observed in this population, reflecting chronic myocardial injury, endothelial dysfunction, inflammation, and accelerated atherosclerosis. However, the impact of time on renal replacement therapy on these biomarkers remains incompletely understood. This study investigated the association between dialysis vintage, circulating troponin and homocysteine levels, and major cardiovascular risk factors in chronic hemodialysis patients.

Materials and Methods: This prospective observational study included 187 adult ESRD patients receiving maintenance hemodialysis in two tertiary dialysis centers. Patients were categorized according to time on renal replacement therapy into three groups: <5 years (n=85), 5–10 years (n=58), and >10 years (n=44). Troponin levels were measured at baseline and at 3, 6, 9, and 12 months, while homocysteine levels were assessed at baseline, 6, and 12 months. Subgroup analyses were performed according to sex, presence of Coronary Artery Disease (CAD), arterial hypertension, antihypertensive treatment, and lipid-lowering therapy. Statistical analyses included Kruskal–Wallis, Mann–Whitney U, Fisher's exact test, and Spearman correlation. A p-value<0.05 was considered statistically significant.

Results: Elevated troponin levels (>15 pg/mL) were detected in 89.25% of patients, while hyperhomocysteinemia was present in 98% of the study population. No significant differences were observed in mean troponin or homocysteine levels among the three dialysis-duration groups ($p=0.589$ and $p=0.683$, respectively). Furthermore, no significant correlation was identified between dialysis vintage and biomarker concentrations (troponin: Spearman $\rho=-0.061$, $p=0.405$; homocysteine: $\rho=0.015$, $p=0.860$). Patients with established CAD exhibited significantly higher troponin levels than those without CAD (74.10 vs. 37.50 pg/mL, $p<0.001$), whereas homocysteine concentrations did not differ significantly between groups ($p=0.694$). No significant associations were observed between biomarker levels and sex, hypertension status, antihypertensive treatment, or lipid-lowering therapy.

Conclusions: Troponin and homocysteine elevations are highly prevalent among patients undergoing chronic hemodialysis. Dialysis vintage alone does not appear to influence circulating levels of either biomarker. In contrast, the presence of Coronary Artery Disease is strongly associated with significantly increased troponin concentrations, suggesting that underlying cardiovascular pathology rather than dialysis vintage is the principal determinant of chronic troponin elevation in ESRD patients. These findings support the potential role of troponin as a marker of cardiovascular burden and risk stratification in the hemodialysis population.

Biography

Maria Sofra graduated from the Medical School of the University of Crete in 2018. Sofra is currently in the third year of her residency in Nephrology and in the second year of her PhD studies at the Medical School of the National and Kapodistrian University of Athens. Sofra doctoral research focuses on “The impact of troponin and homocysteine levels on the cardiovascular system of end-stage chronic kidney disease patients undergoing hemodialysis, and the association between them.” In February 2025, Sofra obtained her Master's degree from the Medical School of the Aristotle University of Thessaloniki. Sofra postgraduate thesis was titled “The Interaction Between the Immune System and Kidney Disease: A Translational and Clinical Approach.” Although Sofra has not yet published scientific articles, Sofra is actively involved in clinical research and aims to contribute to the scientific community through future publications.



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Lipid and High-Density Lipoprotein (HDL) subfraction changes in premenopausal and postmenopausal women with breast cancer receiving hormonal therapy

Introduction: Hormonal modulation therapy is an important component of hormone receptor-positive breast cancer treatment. However, the type and duration of hormonal therapies have distinct effects on lipid profile parameters and cardiovascular disease risk. This study aimed to investigate the impact of tamoxifen and Aromatase Inhibitors (AIs) on lipid profiles and High-Density Lipoprotein (HDL) subfractions in women with breast cancer.

Materials and Methods: In this retrospective observational study, 100 women were included (50 healthy controls and 50 patients with histologically confirmed breast cancer). Among breast cancer patients, 25 were premenopausal receiving tamoxifen treatment, and 25 were postmenopausal receiving AI therapy, based on routine clinical practice. Lipid parameters were assessed at baseline and following six months of treatment in all participants. Premenopausal patients received tamoxifen, while postmenopausal patients were treated with AIs. Serum total cholesterol, triglycerides, Low-Density Lipoprotein Cholesterol (LDL-C), HDL cholesterol, and HDL sub-fractions (HDL-2 and HDL-3) were analyzed.

Results: In the tamoxifen-treated premenopausal cohort, total cholesterol decreased by 8.48% and LDL-C by 15.94%, with redistribution toward larger HDL particles, reflected by an increase in HDL-2 of 21.1% and a decrease in HDL-3 of 12.06% (all $p < 0.001$). In the postmenopausal Aromatase Inhibitor cohort, a mixed lipid pattern was observed, with increases in total cholesterol (+3.38%) and LDL-C (+7.02%), decreases in HDL-C (-1.56%) and HDL-2 (-20.75%), an increase in HDL-3 (+8.69%), and a decrease in triglycerides (-10.95%) (all $p < 0.001$). Direct comparison of change scores between cohorts showed significant differences for all examined lipid parameters (all $p < 0.001$).

Conclusions: Distinct six-month trajectories in lipid profile parameters and HDL sub-fractions were observed between premenopausal women receiving tamoxifen and postmenopausal women receiving Aromatase Inhibitors. These findings likely reflect the combined influence of endocrine therapy and underlying menopausal physiology and should not be interpreted as a direct causal head-to-head comparison of isolated drug effects.

Biography

Maria Sofra graduated from the Medical School of the University of Crete in 2018. Sofra is currently in the third year of her residency in Nephrology and in the second year of her PhD studies at the Medical School of the National and Kapodistrian University of Athens. Sofra doctoral research focuses on “The impact of troponin and homocysteine levels on the cardiovascular system of end-stage chronic kidney disease patients undergoing hemodialysis, and the association between them.” In February 2025, Sofra obtained her Master's degree from the Medical School of the Aristotle University of Thessaloniki. Sofra postgraduate thesis was titled “The Interaction Between the Immune System and Kidney Disease: A Translational and Clinical Approach.” Although Sofra has not yet published scientific articles, Sofra is actively involved in clinical research and aims to contribute to the scientific community through future publications.



**Michael Anjello Jothi Rajan, M.Sc.,
M.Phil., M.Ed., Ph.D.**

AERT, Chennai, Tamil Nadu, India

Are we following ethical guidelines in cardiology?

Cardiology and Neurology are two important medical fields which are often deciding the longevity of human lives. Among these, cardiology decides the life span of a person. In medicine, all the doctors vow to obey the Hypothecation oath. Along with this, they ought to practice autonomy, justice, beneficence, non-maleficence, and human dignity. In recent times, it is found obviously that the axioms of medical ethics are often overlooked. In this presentation, the author focuses on how justice is sacrificed at the cost of the patient's wellbeing and life. This axiom is discussed with respect to the Doctor's experience, time of devotion towards the patient, informed consent, rapport with fellow surgeon in the case of surgery, post-operative care, and the economics of the treatment. Though the axioms are equally important due to time constraint, it is limited to justice only towards the patient from the Doctor.

Biography

Michael Anjello Jothi Rajan, Ph.D., Doctorate in Physics, had retired from active service on 31.05.2017 having worked as an Associate professor of Physics; Director, Bio-Nano Research Laboratory and Dean of Research and Project and headed the Department of Foundation Courses for a period of 13 years in Arul Anandar College (Autonomous), Karumathur-625514, Tamil Nadu, India. Rajan had put in a service of 8 years in Tamil Nadu Government PG School Education and 27 years in Higher Education in Tamil Nadu. Rajan has guided 8 Ph.D. Scholars in Physics. Rajan is in the editorial board and reviewer board for many national and international journals and serves as TAC member for multidisciplinary International Conferences related to cancer theranostics. Rajan served as the Project Consultant the prestigious Tamil Nadu State Council for Science and Technology, Chennai, Tamil Nadu, India from December 2017 to December 2020. Rajan served as Associate-Director for Anantharaman Applied Research Centre for Science & Technology Innovations for Villagers Livelihood Empowerment in Don

Bosco College (Co-Ed.), Athanavur, Yelagiri Hill -635853, Tamil Nadu, India from December 2022 to July 2025. Rajan has assisted Don Bosco College, Yelagiri Hills and Loyola College of Arts and Science, Mettala, Rasipuram Taluk, Tamil Nadu - 637407 for the first Assessment and Accreditation process for NAAC Bangalore to score A and B grades respectively. Rajan has received many awards for academic works as well as work for poverty alleviation. Rajan has visited many countries to motivate youth in the field on Physics, Science Communication, Bioethics, Medical Ethics and Human rights. In Rajan's capacity till December 2020, Rajan has generated funds worth of 16.00 Crores Indian Rupees (Approx.17,93,600 US\$) towards own projects and projects for Tamil Nadu State Council for Science and Technology, Chennai – 600025. At present Rajan serves as General Secretary for Aadhavan Educational and Research Trust. Rajan's research papers can be downloaded for free from the trust's website.



Moataz Taha Mahmoud

Madinah Cardiac Center, Saudi Arabia

Diagnosis and treatment of primary cardiac lymphoma in an immunocompetent 27 year old man

Background: Primary Cardiac Lymphomas (PCL) represent extremely rare cardiac tumors which are accompanied by poor prognosis, unless they are timely diagnosed and treated. Despite the rarity of Primary Cardiac Lymphomas, they should always be kept in mind in the differential diagnosis of cardiac tumors. At the moment the most effective treatment of Primary Cardiac Lymphomas is chemotherapy.

Case Presentation: A 27-year-old, immunocompetent man who presented to our hospital due complaining for one week from left inframammary stitching chest pain increase with inspiration, No dyspnea or palpitations. General and cardiac exams were free.

Multi-modality imaging demonstrated a large intracardiac tumor related to the posterior aortic wall and centered on the interatrial septum and protrude through the SVC, which was proven by biopsy, to be a Primary Cardiac Lymphoma (PCL). The patient received targeted chemotherapy including rituximab, cyclophosphamide, doxorubicin, vincristine and prednisolone (RCHOP) which led to marked reduction of the tumor size and 18-FDG PET/CT scan showed no evidence of FDG avid metabolically active lesions.

No reported complications related to chemotherapy with no relapse over a 15-month follow-up period.

Conclusions: Cardiac tumors may present by non-specific manifestations. Primary Cardiac Lymphoma shows a poor prognosis, unless they are treated in the early stages. So, timely diagnosis is imperative. At the moment the most effective treatment is chemotherapy.

Keywords: Primary Cardiac Lymphoma, Imaging, Chemotherapy.

Biography

Lecturer of Cardiology, Cairo University, Egypt. Senior registrar of Cardiology, Madinah Cardiac Center (MCC), KSA. European board certification in TTE and TEE. Fellow of American College of Cardiology. Fellow of Egyptian Society of Cardiology.



**Natasha Manuelpillai*, and
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Multisystem IgG4-Related disease with cardiac involvement mimicking cardiac sarcoidosis: A diagnostic challenge background

Background: IgG4-Related Disease (IgG4-RD) and sarcoidosis are multisystem inflammatory disorders with some overlapping clinical, radiological, and histopathological features. Both may involve the orbit, salivary glands, lymph nodes, and cardiovascular system, and may present with constitutional symptoms. Cardiac involvement is well recognised in sarcoidosis and increasingly reported in IgG4-RD, but myocardial disease in IgG4-RD remains rare and poses significant diagnostic challenges, particularly as imaging findings can be similar to Sarcoidosis. We present an interesting case where the differentiation between IgG4-RD and sarcoidosis was challenging, including clinical features, imaging and histology slides.

Case presentation: A 57-year-old man presented with a two-year history of progressive bilateral eye redness, proptosis, altered colour perception, and night sweats, without diplopia or pain. Examination demonstrated bilateral proptosis, reduced ocular motility, non-tender superolateral orbital masses, lower lid retraction, and parotid and submandibular gland enlargement. MRI of the orbits showed bilateral lacrimal gland enlargement consistent with inflammatory or lymphoproliferative disease. Laboratory investigations revealed marked hypergammaglobulinaemia (IgG 26.5 g/L) with significantly elevated IgG4 (11.44 g/L), low IgM, raised ESR and CRP, and negative ANA and ANCA. Lacrimal gland biopsy demonstrated a dense lymphoplasmacytic infiltrate with >80% IgG4-positive plasma cells, confirming IgG4-RD. The disease progressed to involve salivary glands with xerostomia, nasal obstruction, and gingival swelling. Whole-body PET-CT revealed widespread FDG-avid lymphadenopathy, bilateral lacrimal and parotid involvement, myocardial uptake, and a periaortic soft tissue cuff. Cardiac assessment showed first-degree atrioventricular block (P-R interval 266ms)

and right bundle branch block (QRS duration 141ms) on ECG, with markedly elevated NT-proBNP (3928 pg/mL). Transthoracic Echocardiography demonstrated concentric left ventricular hypertrophy with systolic and diastolic dysfunction, left atrial dilation, and features of pulmonary hypertension. Cardiac MRI revealed multifocal late gadolinium enhancement and myocardial oedema, appearances considered typical of cardiac sarcoidosis, and serum ACE was found to be elevated at 145U/L. However, EBUS-guided lymph node sampling, endomyocardial biopsy, and salivary gland cytology were non-diagnostic for sarcoidosis. Further evaluation with carbohydrate-depleted, fasting, half body cardiac 18-FDG PET CT confirmed left ventricular dysfunction (EF 42%), areas of scarring, and low-grade metabolic activity consistent with an inflammatory, infiltrative process. Following multidisciplinary discussion, the overall clinicopathological features supported IgG4-RD with probable cardiac involvement, and treatment was planned accordingly.

Discussion: This case shows that IgG4-RD and sarcoidosis can be clinically and radiologically indistinguishable, particularly with cardiac involvement. Biomarkers such as ACE and IgG4 should be interpreted cautiously, multimodality imaging may be discordant, and negative biopsies do not exclude disease because of sampling limitations. Multidisciplinary discussion is essential when diagnostic uncertainty affects immunosuppression and the timing of device therapy.

Biography

Natasha Manuelpillai is a UK medical graduate from Imperial College London with an MBBS and BSc in Global Health. Natasha is currently working as a Registrar in the Acute Medical Department at Salisbury District Hospital. She is hoping to enter Cardiology Specialty training soon.



Nuha Hasnain, MBBS

Royal Preston Hospital, United Kingdom

A unique case of infective endocarditis: *Staphylococcus lugdunensis* infective endocarditis presenting as embolic occipital stroke due to posterior mitral leaflet perforation

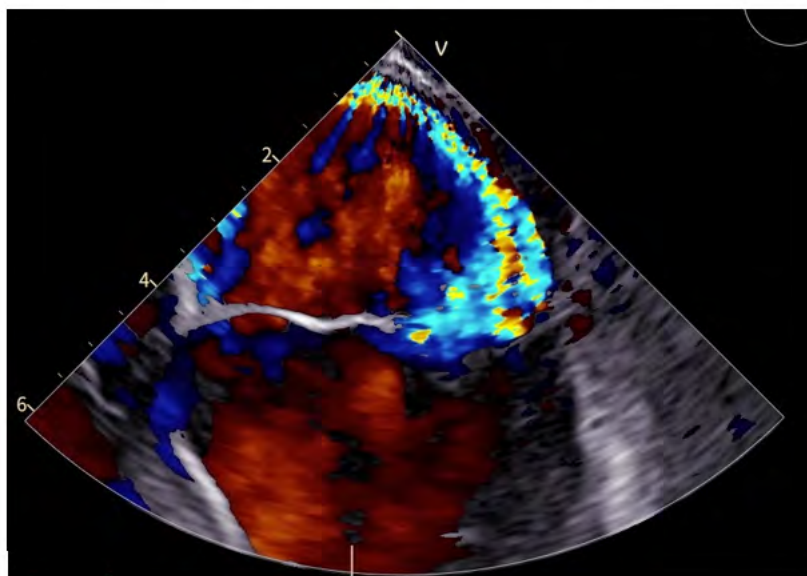
Statement of the Problem: *Staphylococcus lugdunensis* is an uncommon coagulase-negative staphylococcus with virulence comparable to *Staphylococcus aureus*. Although rare, it can cause aggressive native valve infective endocarditis, characterised by rapid valvular destruction, systemic embolisation, and a high requirement for early surgical intervention. Because it is often regarded as a contaminant in blood cultures, delayed diagnosis may result in severe complications. This case highlights the importance of recognising *S. lugdunensis* bacteraemia as clinically significant and the role of early echocardiographic assessment in preventing adverse outcomes.

Methodology & Clinical Presentation: A 56-year-old woman with a history of migraine, hypothyroidism, and hormone replacement therapy presented with confusion, slurred speech, weakness, pyrexia, dysuria, and urinary frequency. Initial investigations demonstrated elevated inflammatory markers, and she was treated for presumed heatstroke with a possible urinary tract infection before being discharged on pivmecillinam. Blood cultures subsequently grew *S. lugdunensis* but were interpreted as contaminants, and targeted antimicrobial therapy was not initiated. One month later, she re-presented with persistent constitutional symptoms and neurological deficits. MRI of the brain demonstrated a subacute right occipital infarction consistent with an embolic stroke. Repeat blood cultures again isolated *S. lugdunensis*. Clinical examination revealed a pansystolic murmur, and transoesophageal echocardiography demonstrated posterior mitral leaflet perforation with severe eccentric mitral regurgitation, confirming destructive native mitral valve infective endocarditis. The patient completed six weeks of intravenous flucloxacillin and was accepted for mitral valve surgery.

Findings: Repeated isolation of *S. lugdunensis* represented true bacteraemia rather than contamination. Delayed recognition resulted in embolic cerebral infarction and severe mitral valve destruction requiring surgical intervention. Transoesophageal echocardiography was pivotal in establishing the diagnosis and guiding definitive management.

Conclusion & Significance: *Staphylococcus lugdunensis* bacteraemia should never be dismissed as contamination, particularly in patients with persistent fever, positive blood cultures, or embolic neurological events. Early transoesophageal echocardiography and prompt targeted antimicrobial therapy are essential for identifying destructive infective endocarditis, facilitating timely surgical referral, reducing embolic complications, limiting valvular destruction, and improving clinical outcomes.

Echocardiogram showing severe mitral regurgitation.



Biography

Nuha Hasnain is an FY1 Doctor at Royal Preston Hospital. Hasnain graduated from Newcastle University Medicine Malaysia in 2025. Hasnain's clinical interests include cardiology, dermatology, and medical education. Hasnain is actively involved in clinical research and quality improvement projects, with a particular interest in cardiovascular disease and improving patient outcomes.



Prashant Sakharam Bhokardankar

Professor and HOD, Rasshastra Bhaishajya Kalpana Dept.,
Datta Meghe Ayurvedic Medical College Hospital and
Research Centre, Nagpur, Maharashtra, India

Ayurveda and heart diseases: Natural insights for the heart care

The incidence of Cardiovascular Diseases (CVDs) has greatly risen in recent years because of environmental shifts, unhealthy diets, and changes in lifestyle. Consequently, the term *hridroga*, which pertains to heart-related ailments in Ayurveda, has gained prominence. Cardiovascular Diseases (CVDs) encompass a wide range of conditions, including heart attacks, peripheral artery disease, rheumatic heart disease, congenital heart disease, heart failure, hypertension, coronary heart disease, and cerebrovascular diseases such as stroke. Ayurveda states that imbalances in the three doshas primarily lead to heart diseases, and addressing cardiovascular issues requires the challenging process of restoring their balance. Herbal remedies have played a crucial role in human health care throughout history, with numerous traditional medical systems employing them to address various ailments. Ayurveda is one of the oldest and most recognized traditional medical systems globally. This review paper explores the essential role of Ayurveda in preventing, managing, and assessing Cardiovascular Diseases (CVDs) through interventions related to diet (*Ahara*), lifestyle (*Vihara*), seasonal practices (*Ritucharya*), yoga, daily habits (*Dinacharya*), and rejuvenation treatments (*Rasayana*). The research explains how Ayurveda's holistic approach addresses the root causes of Cardiovascular Diseases and offers valuable insights into lifestyle modifications, herbal treatments, and preventive strategies.

Biography

Prashant Bhokardankar is not just a leading figure in the field of Ayurveda; Bhokardankar is a trailblazer redefining the realms of traditional medicine. With MD in Ayurveda specializing in Rasshastra from the prestigious Govt. Ayurveda College Nanded, India, Bhokardankar has dedicated Bhokardankar's career to advancing the pharmaceutical aspects of Ayurveda.

since 2005. As a dynamic Professor and Head of the Department at DMAMCHRC Nagpur, Bhokardankar inspires the next generation of Ayurvedic practitioners while simultaneously contributing to the global discourse on traditional medicine. Bhokardankar's impressive tenure includes impactful roles at renowned pharmaceutical companies such as Dabur and Arya Vaidya Pharmacy, where Bhokardankar honed expertise in the Ayurveda pharma sector. Bhokardankar is a prolific researcher, with numerous national and international publications in indexed journals to Bhokardankar's name. Bhokardankar's commitment to the field extends beyond academia, as Bhokardankar has organized various seminars and workshops, passionately sharing the wisdom of Ayurvedic medicine. As a sought-after speaker at international conferences across Spain, France, Italy, and Dubai, Bhokardankar continues to bridge the gap between ancient wisdom and modern science, showcasing the relevance of Ayurveda on a global platform. Bhokardankar's work as a principal investigator on multiple funded research projects further underscores dedication to advancing Ayurvedic pharmaceutical knowledge. With extensive experience and visionary outlook, Bhokardankar truly embodies the spirit of innovation within the world of Ayurveda.



Rahul Hajare

Sandip University, India

Fact file: Post acute respiratory and cardiovascular outcomes in recovered COVID-19 patients

Post COVID-19 pulmonary assessment revealed a persistent decrease in Maximal Oxygen Consumption (VO_2 max) among previously symptomatic individuals. A proportion of patients particularly those with severe disease or ARDS exhibited reduced Diffusion Capacity for Carbon Monoxide (DLCO), fibrotic lung changes, and chronic dyspnea. Cardiovascular complications elevated D-dimer levels, fibrinogen, and delayed thrombin time were identified in severe cases, correlating with endothelial dysfunction and ongoing micro thrombotic events even after clinical recovery. Myocardial inflammation and pericardial involvement were also documented in post recovery imaging, indicating lingering vascular stress. Comorbid relationships adverse outcomes were significantly associated with underlying hypertension, cardiovascular disease, diabetes mellitus, and chronic pulmonary disorders. Multi organ implications persistent endothelial inflammation, microvascular injury, and dysautonomia (post-COVID) reflect systemic pathogenic footprints of SARS-CoV-2. COVID-19 recovery does not equate to full cardiopulmonary restoration for a notable subset of patients. Long-term monitoring indicates that recovered individuals remain susceptible to late-onset cardiac events (e.g., arrhythmias, myocarditis) and progressive pulmonary fibrosis. Rehabilitation focusing on graded exercise, respiratory therapy, and cardiovascular screening is recommended. Future research should emphasize longitudinal cohort tracking, biomarker profiling for enduring inflammation, and evaluating the efficacy of post-COVID rehabilitation programs.

Biography

Hajare published more than 80 articles on different subjects like quantum biology, brain disorder, chemistry, cosmology and nano in good journals. Hajare was a reviewer of some journals. Hajare, PhD, Fellow ICMR Scholar, Hindu University of America Florida; Scholar, National AIDS Research Institute. Professor of Statistics, Sandip University.



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Norman Hord, PhD, MPH, RDN⁴,
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Understanding the efficacy of intensive cardiac rehabilitation versus traditional cardiac rehab on dietary behavior and clinical risk factor outcomes

Purpose: The objective of this study was to assess differences in dietary behavior and clinical risk factor outcomes and explore predictors of change among patients participating in traditional and Pritikin intensive Cardiac Rehabilitation (CR).

Methods: This secondary analysis of cardiac registry data from 2015–2021 included patients participating in traditional CR (n=420) or Pritikin intensive CR (n=1005) at a single hospital site. Dietary behavior outcomes included the Rate Your Plate measure while clinical risk factor outcomes included fasting lipids, blood pressure, anthropometrics, functional outcomes, and psychosocial assessment. Analysis of covariance examined a difference in Rate Your Plate scores between CR groups. Multivariate analysis of covariance was used to determine differences in clinical risk factor variables between CR groups. Predictors of change in dietary behavior and clinical risk factors were determined through multiple bivariate linear regression models within each CR group.

Results: Both CR programs led to significant improvements though more change was observed among Pritikin intensive CR participants in dietary behavior, anthropometrics, and fasting lipids. Status as a current or recent smoker were not significant predictors of dietary behavior. Male sex, status as a current or recent smoker, beta blockers and angiotensin-converting enzyme inhibitors prescribed were not significant predictors of total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, or non-high-density lipoprotein cholesterol for traditional and Pritikin intensive CR groups. There were not significant predictors of blood pressure, body mass, or waist circumference.

Conclusion: Although participation in either CR program yielded cardiometabolic benefits, Pritikin intensive CR patients exhibited significantly greater improvements in dietary behavior and clinical risk factors.

Biography

Ruth Rasmussen is an Assistant Professor for Liberty University's School of Health Sciences. Rasmussen attained Master of Arts in Dietetics ('12), Master of Science in Nutritional Science ('13), and PhD in Nutritional Sciences ('22) at the University of Oklahoma Health Sciences Center. Rasmussen worked for 7 years as an outpatient cardiac rehabilitation dietitian and educator within Pritikin Intensive Cardiac Rehab at the Oklahoma Heart Hospital in Oklahoma City. Rasmussen's research focuses on nutritional intake and healthy food access of children and cardiovascular health among intensive and traditional outpatient cardiac rehabilitation patients in Oklahoma.



Sergey Suchkov^{1-11,15*}, R. Holland Cheng^{14,15}, Matt Springer^{13,15}, Marc Hendrikx¹⁶

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⁶Member, ISPM (International Society for Personalized Medicine), Japan

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¹⁶Faculty of Medicine and Life Sciences, University of Hasselt, Belgium

A unique cell-driven phenomenon in the heart and the promising future of the innovative translational tools to manage cardiac self-renewal and regeneration

Stem Cell (SC)-based therapy has been considered as a promising option in the treatment of ischemic heart disease. The formation of new cardiomyocytes within the injured myocardium has not been conclusively demonstrated. Consequently, the focus of research in the field has since shifted to SC-derived paracrine factors, including cytokines, growth factors, mRNA, and miRNA. Notably, both mRNA and miRNA can enter into the extracellular space either in soluble form or packed into membrane vesicles. SC-derived paracrine factors have been shown to suppress inflammation and apoptosis, stimulate angiogenesis, and amplify the

proliferation and differentiation of resident Cardiac SCs (CSCs). Such features have led to exosomes being considered as potential drug candidates affording myocardial regeneration. The search for chemical signals capable of stimulating cardiomyogenesis is ongoing despite continuous debates regarding the ability of mature cardiomyocytes to divide or dedifferentiate, transdifferentiation of other cells into cardiomyocytes, and the ability of CSCs to differentiate into cardiomyocytes. Future research is aimed at identifying novel cell candidates capable of differentiating into cardiomyocytes. The observation that CSCs can undergo intracellular development with the formation of cell-in-cell structure and subsequent release of transitory amplifying cells with the capacity to differentiate into cardiomyocytes may provide clues for stimulating regenerative cardiomyogenesis.

Indeed, human SC-based therapy derivatives are extremely attractive for therapeutic development because they have direct pharmacologic utility in clinical applications, unlike any other adult cells. The human SC as a special entity is emerging as a new type of potential therapeutic agent of cellular entity in cell-based regenerative medicine, because human SC-based therapy derivatives have the potential for human tissue and function restoration that the conventional drug of molecular entity lacks.

Biography

Sergey Suchkov was born in the City of Astrakhan, Russia, in a family of dynasty medical doctors. In 1980, graduated from Astrakhan State Medical University and awarded with MD. In 1985, maintained PhD as a PhD student of Sechenov University and Institute of Medical Enzymology. In 2001, maintained Doctor Degree at the National Institute of Immunology, Russia. From 1989 through 1995, was a Head of the Lab of Clinical Immunology, Helmholtz Eye Research Institute in Moscow. From 1995 through 2004 - a Chair of the Dept for Clinical Immunology, Moscow Clinical Research Institute (MONIKI). In 1993-1996, was a Secretary-in-Chief of the Editorial Board, Biomedical Science, an international journal published jointly by the USSR Academy of Sciences and the Royal Society of Chemistry, UK. At present, Sergey Suchkov, MD, PhD, is: Professor in Medicine & Immunology, Director for Center for Biodesign, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Moscow, Russia; R&D Director, InMedStar, Russia-UAE; Senior Scientific Advisor of China Hong Kong Innovation, International Business Association, Hong Kong; The Russian Academy of Natural Sciences, Moscow, Russia; New York Academy of Sciences, USA; American Chemical Society (ACS), USA; American Heart Association (AHA), USA; European Association for Medical Education (AMEE), Dundee, UK; EPMA (European Association for Predictive, Preventive and Personalized Medicine), Brussels, EU; ARVO (American Association for Research in Vision and Ophthalmology); ISER (International Society for Eye Research); Personalized Medicine Coalition (PMC), Washington, DC, USA; Secretary General, United Cultural Convention (UCC), Cambridge, UK.



Teji Dhami

Boost your Health and Wellness, United States

Precision nutrition for heart health: A personalized approach to cardiovascular disease prevention and management

Cardiovascular Disease (CVD) remains the leading cause of mortality worldwide despite significant advances in pharmacological therapies and preventive cardiology. Traditional dietary recommendations have largely relied on population-based guidelines, assuming that individuals respond similarly to nutritional interventions. However, growing evidence demonstrates substantial interindividual variability in metabolic responses to identical dietary patterns due to differences in genetics, epigenetics, gut microbiome composition, metabolic phenotype, lifestyle behaviors, age, sex, and environmental exposures. Precision nutrition has emerged as an innovative, evidence-based approach that seeks to tailor dietary interventions according to an individual's unique biological, clinical, and behavioral characteristics. By integrating multi-omics technologies with digital health and continuous metabolic monitoring, precision nutrition offers the potential to optimize cardiovascular risk reduction beyond conventional dietary counseling. Precision nutrition improves cardiometabolic health through individualized dietary strategies, biomarker-guided interventions, and emerging digital technologies.

Current literature evaluating precision nutrition includes studies investigating nutrigenomics, nutrigenetics, metabolomics, lipidomics, gut microbiome profiling, wearable health technologies, and artificial intelligence-assisted dietary recommendations. Particular emphasis was placed on research evaluating cardiovascular risk factors including hypertension, dyslipidemia, obesity, insulin resistance, type 2 diabetes, chronic inflammation, endothelial dysfunction, and atherosclerosis. Personalized dietary approaches including Mediterranean, DASH, plant-predominant, and low-glycemic dietary patterns were evaluated in relation to individual metabolic phenotypes and biomarker responses.

Precision nutrition represents a paradigm shift from generalized dietary recommendations toward individualized nutrition therapy. Emerging evidence suggests that personalized nutrition can improve blood pressure regulation, glycemic control, lipid metabolism, systemic inflammation, endothelial function, body composition, and overall cardiovascular risk by matching dietary interventions to individual metabolic characteristics. Integration of genomic information with circulating biomarkers, gut microbiome analysis, and continuous glucose monitoring enables clinicians to identify patients who may benefit from targeted nutritional modifications. Artificial intelligence and machine learning algorithms further enhance personalization by predicting individual glycemic and lipid responses to specific foods, allowing more accurate dietary prescriptions. Additionally, biomarkers such as apolipoprotein B, lipoprotein(a), HDL functionality, inflammatory markers, and metabolomic signatures may improve cardiovascular risk stratification and therapeutic monitoring. Lifestyle behaviors—including physical activity, sleep quality, stress management, and smoking cessation—remain essential complementary components of precision nutrition and significantly influence long-term cardiovascular outcomes.

Precision nutrition represents one of the most promising advances in preventive cardiology by recognizing that optimal nutrition is highly individualized rather than universally prescriptive. As genomic sequencing, metabolomics, microbiome science, wearable technologies, and artificial intelligence become increasingly integrated into routine clinical practice, personalized nutrition has the potential to transform Cardiovascular Disease prevention and management. Future large-scale randomized clinical trials are needed to establish standardized precision nutrition algorithms, validate clinically actionable biomarkers, and evaluate long-term cardiovascular outcomes. Successful implementation will require multidisciplinary collaboration among cardiologists, obesity medicine specialists, lifestyle medicine physicians, dietitians, exercise professionals, behavioral psychologists, and data scientists. Ultimately, precision nutrition may serve as a cornerstone of personalized cardiovascular medicine, enabling clinicians to deliver targeted, evidence-based interventions that improve metabolic health, reduce cardiovascular events, and advance the delivery of truly individualized healthcare.

Biography

Dhami specializes in Internal Medicine, Obesity Medicine and Lifestyle Medicine. Dhami graduated from Topiwala National Medical College, India and completed residency in Internal medicine at Texas Tech University Health Sciences Center, USA. Dhami has been recognized as a fellow of the Obesity Medicine Association. Dhami is the Chairman of the Membership Committee & Member of the CME committee at the Obesity Medicine Association and member of Physician Advisory Committee at the Medical Fitness Association. Dhami takes a multidisciplinary approach with sustainable lifestyle changes including nutrition therapies and medications for weight management and wellness.



Yasser Mohammed Hassanain Elsayed

Egyptian Ministry of Health, Egypt

Yasser's criterion of inferior ST-segment discrepancy deviations in AF with aberrancy and Sgarbosa criteria-A new cardiovascular discovery and management-A case report

Rationale: Diagnosis of ST-segment elevation myocardial infarction in the presence of Left Bundle Branch Block (LBBB) is challenging and infarction equivalent. Therefore, the intravenous infusion of a thrombolytic may be a crucial step. Emergent Sgarbosa criteria and their modification are guided by advantageous guide keys. Atrial fibrillation represents the risk of arrhythmia in the presence of a Left Bundle Branch Block. Interestingly, the presentation of myocardial infarction with atrial fibrillation and Left Bundle Branch Block has a significant impact on both morbidity and mortality of patients. Patient Concerns: A middle-aged, married, heavy-smoking Egyptian male patient was admitted to the intensive care unit with acute chest pain with rapid atrial fibrillation, and Left Bundle Branch Block. Diagnosis: Left Bundle Branch Block with atrial fibrillation and inferior Yasser's criterion (Discrepancy criteria) ST-segment deviations as a new description in suspected acute myocardial infarction. Interventions: Electrocardiography, oxygenation, streptokinase IV infusion, and echocardiography. Outcomes: gradual, dramatic clinical and electrocardiographic improvement, but atrial fibrillation and Left Bundle Branch Block had occurred.

Lessons: Yasser's criterion (Discrepancy criterion) is a new descriptive criterion for atrial fibrillation with aberrancy (atrial fibrillation and Left Bundle Branch Block). It is characterized by discrepant inferior ST-segment deviations with ST-elevation in III and aVR leads with ST-depression in II and aVF leads. It is an unknown mechanism. Both inferior infarctions of a single lead and pulmonary embolization are possible associations. It may be interpreted as accompanied by severe specific ischemic myocardial insult. Future wide-research studies for Yasser's criterion (Discrepancy criterion) for sensitivity and specificity will be recommended.

Biography

Yasser Mohammed Hassanain Elsayed is a scientist, critical care physician, cardiologist, and independent researcher at the Egyptian Ministry of Health. Elsayed has (154) publicized articles with (24) Innovations. They included (3) Yasser's sign, (7) Yasser's phenomenon, (1) Yasser's modification, (2) Yasser's maneuver, (1) Yasser's method, (1) Yasser's test, (4) Yasser's syndrome, (1) Yasser's fibrillation, (1) Yasser's Procedure, (1) Yasser's ECG palpitations wave, (1) Factitious Yasser's Infarction, and (1) Yasser's Criterion. Elsayed was an international speaker in (37) Conferences, reviewed (324) articles, was an honorable editor for (275) Journals, (13), Conferences OCM, and was an instructor in (13) official and (128) non-official training. Elsayed has (50) COVID-19 publicized articles; Elsayed was nominated for big prizes such as Breakthrough Prize, Einstein Prize, etc. Elsayed gained (more than 184) excellence certificates.



Zarif Bin Akhtar

Institute of Electrical and Electronics Engineers (IEEE),
United States

Future of organoids engineering: Biomaterials, mechanobiology, personalized therapeutics

Organoid engineering has emerged as one of the most promising frontiers in Biomedical Engineering, regenerative medicine, and precision healthcare. These Three-Dimensional (3D) *in vitro* tissue models faithfully recapitulate key structural and functional characteristics of native human organs, providing transformative platforms for disease modeling, drug discovery, and personalized therapeutic development. By bridging the gap between conventional two-dimensional cell cultures and *in vivo* biological systems, organoids are reshaping the landscape of translational biomedical research.

This presentation explores recent advances in organoid engineering through the integration of intelligent biomaterials, mechanobiology, stem cell technologies, organoids-on-a-chip, and Artificial Intelligence (AI). Special emphasis will be placed on how responsive biomaterials and mechanical microenvironments regulate cellular behavior, tissue morphogenesis, and organoid maturation. Furthermore, the session highlights the growing role of AI and Generative AI in predictive modeling, automated optimization of culture conditions, bio-fabrication, and data-driven decision-making to enhance reproducibility and accelerate personalized medicine.

Current challenges including scalability, biological variability, standardization, and regulatory acceptance will also be discussed alongside emerging solutions involving smart biomaterials, microfluidic systems, and computational modeling. Finally, the presentation outlines future research directions toward AI-enabled bioengineering platforms, human-on-chip technologies, and precision regenerative medicine, illustrating how interdisciplinary convergence between engineering, biology, and computational sciences is poised to revolutionize next-generation healthcare.

Biography

Zarif Bin Akhtar is a researcher specializing in Artificial Intelligence (AI), Biomedical Engineering (BME), Cognitive Computing and Computational Science. Akhtar's work explores the intersection of AI, Biomedical Engineering, with machine learning and deep learning, focusing on innovations in computing, engineering, and medical informatics. With numerous publications in AI-driven healthcare, cybersecurity, and deep learning, Akhtar contributes to advancing intelligent systems for medical applications. Akhtar has reviewed for prestigious journals and actively participates in various interdisciplinary research. Akhtar's expertise extends to machine learning, big data analytics, and biomedical signal processing, shaping the future of AI-powered medical solutions.

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POSTER PRESENTATIONS





Abhinav Kanigicherla, MBBS, MRCP^{1*}, Naveen Kumar, MD, DM²

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Therapeutic pneumoperitoneum mimicking inferior myocardial infarction and right ventricular aneurysm: A case report

Introduction: Progressive Preoperative Pneumoperitoneum (PPP) expands abdominal capacity before repair of giant loss-of-domain hernias. Pneumoperitoneum can alter diaphragmatic position, cardiac orientation and ventricular loading, producing pseudo-infarction ECG changes; an associated Right Ventricular (RV) aneurysm-like appearance is rarely described.

Case presentation: A 76-year-old man with diabetes and no cardiac symptoms had a giant left inguinoscrotal hernia, with 49% of measured volume within the hernial sac. Following abdominal-wall botulinum toxin, a peritoneal pigtail was placed, and PPP was administered from 27 May to 4 June 2026 (500-1200 mL air/day). ECG on 4 June showed sinus tachycardia (114 bpm), abnormal inferior Q waves in II, III and aVF, and nonspecific anterior T-wave changes (Figure 1A). Preoperative echocardiography showed an RV apical aneurysmal appearance (Figure 1C). CMR on 5 June demonstrated focal RV free-wall thinning/outward bulging with dyskinesia and >75% subendocardial late gadolinium enhancement, raising RV infarction or arrhythmogenic RV cardiomyopathy as differentials; the study was limited by poor breath-holding. Coronary angiography showed normal, non-obstructive coronary arteries. Anatomical hernia repair with left orchidectomy was performed on 8 June. Postoperatively, the inferior Q-wave pattern was no longer evident, although nonspecific anterior T-wave changes persisted (Figure 1B). Echocardiography on 11 June showed a normal RV, no LV regional wall-motion abnormality, and preserved biventricular systolic function (LVEF 60%) (Figure 1D).

Conclusion: The reversible inferior ECG pattern, postoperative normalization of RV morphology on echocardiography, normal coronary anatomy and temporal association with PPP support a pneumoperitoneum-related pseudo-infarction/mechanical mimic. PPP should be considered when new inferior ECG or RV abnormalities arise after insufflation, with repeat assessment after decompression or definitive repair before diagnosing fixed ischaemic or RV structural disease.

Biography

Abhinav Kanigicherla is currently in the Internal Medicine Training (IMT) year 3 at University Hospitals Coventry and Warwickshire NHS Trust in the UK, and the aim is to pursue Higher Specialty training in Cardiology. Kanigicherla is looking forward to sharing an exciting case report and to participating in the Cardiology World Conference in Tokyo, which will definitely aid career progression.



**Davor Horvat*, Kamal Al Rajabi,
Donat Horvat, Darko Delač, Petar
Milošević**

General Hospital, Karlovac, Croatia

Implantation of permanent cardiac pacemakers with right-sided access in collaboration with a vascular surgeon: *Pro et contra*

In our review, we wanted to highlight the advantages of implanting cardiac pacemakers on the right side of the chest, with the generator site below the right clavicle. This approach is not used as often as a method of implanting cardiac pacemakers today, but it has its advantages. We also wanted to highlight the advantages of collaboration between cardiologists and vascular surgeons, given that it is common practice today for cardiologists to perform cardiac pacemaker implantation independently.

We would like to emphasize that in right-sided implantation of a cardiac pacemaker, the electrode position is in the shape of the letter S, which means that the electrode bends into two contralateral curves, as opposed to left-sided implantation where the electrode has only one curve on its way from the generator to the right ventricle. With two electrode curves, we get better electrode stability and consequently fewer postoperative dislocations and electrode flotations in the right ventricle.

Furthermore, in collaboration with a vascular surgeon, the benefit is in creating a deeper generator bed between the pectoralis major and minor muscles, which results in better generator stability, which correlates with fewer local decubitus ulcers and generator prolapse outside the skin, which usually occurs more often in thin patients and causes very unpleasant local infections. In this deeper implantation approach, in most cases, the venous system is reached via the cephalic vein, which is a tributary of the subclavian vein. This reduces the possibility of complications such as local hematomas caused by difficult and long-term punctures of the subclavian vein, especially in obese individuals and individuals with a barrel-shaped thorax, and iatrogenic pneumothorax.

It is also worth emphasizing the aesthetic impression of deeper implantation, which is more acceptable given the smaller local protrusion of the generator, and thus the more natural appearance of that part of the chest, which also contributes to better psychological acceptance of the electrostimulation system by the patient.

As for the negative characteristics of our right approach, we can point out that the practicality of implantation on the left side of the chest, i.e. under the left clavicle, is more practical for right-handed people, who are the majority in the general population. Furthermore, our approach of creating a deeper bed for the generator requires much more detailed intraoperative hemostasis due to the more frequent postoperative hematomas, especially in patients who are on antiplatelet or anticoagulant therapy, or who are prone to hemorrhagic diathesis. Also, the deeper approach is more prone to the formation of adhesions, so sometimes it is more difficult to access the generator when replacing it when the battery is exhausted, and it is also possible to damage the electrode, which must also be prepared and mobilized for connection to a new generator. It is not unimportant to note that implantation performed independently by cardiologists is technically easier and faster to implement in organizational terms.

In the end, we can conclude that when all the pros and cons of our method of implanting permanent heart pacemakers are considered, we can say that our approach has advantages that are useful to take into account, and cardiologists can look at them and assess for themselves what is better for their patient at a certain moment.

Biography

University assistant professor at the Department of Cardiology with the Coronary Unit at the General Hospital Karlovac, Croatia. Total experience so far of about 25 years in the installation of permanent cardiac pacemakers and the operation of the cardiac pacemaker clinic. In a wider range of work, Horvat also deals with general cardiology, transthoracic and transesophageal ultrasound of the heart, and coronary angiography.



**Eric Tran*, Billy Lin,
Rod Partow-Navid**

University of California - Riverside, United States

A case of sepsis-induced Takotsubo cardiomyopathy precipitating torsades de pointes

Background: Takotsubo Cardiomyopathy (TCM) is a state of Left Ventricular (LV) dysfunction induced by a hypercatecholaminergic milieu, leading classically to apical dyskinesis with a compensatory hyperdynamic base. We present a case of sepsis-induced TCM complicated by Torsades de Pointes (TdP), a Polymorphic Ventricular Tachycardia (PMVT) associated with a prolonged QT interval.

Case: A 76-year-old female with atrial fibrillation presented with severe abdominal pain. She was found to be in septic shock with *C. perfringens* bacteremia from a tubo-ovarian abscess and underwent hysterectomy. Postoperatively, she was started on intravenous amiodarone for rapid atrial fibrillation, with conversion to sinus bradycardia with frequent premature ventricular complexes. On day 4, she developed episodes of pulseless PMVT. Telemetry showed a prolonged QT interval with a short-long-short cycle-length sequence before the onset of TdP. EKG showed sinus bradycardia, left bundle branch block, and a corrected QT interval of 591 ms. Coronary angiography revealed no obstructive coronary disease. Transthoracic Echocardiography (TTE) showed apical-predominant LV dysfunction, consistent with TCM.

Decision-Making: Electrolytes were repleted, and amiodarone discontinued. The patient continued in sinus bradycardia with frequent episodes of R-on-T mediated PMVT. Beta-blockers, a mainstay in the treatment of TCM, could not be initiated due to concerns that worsening bradycardia would precipitate TdP. Rather, isoproterenol was administered for overdrive suppression of PMVT. Pacemaker implantation was considered to facilitate the initiation of beta-blockers for TCM and wean isoproterenol. However, this was relatively

contraindicated due to bacteremia. Isoproterenol was eventually weaned, and low-dose carvedilol was started. Repeat TTE showed improved LV function. Repeat EKG showed reduction of the QTc interval from 591 to 455 ms, supporting the diagnosis of acquired long QT syndrome attributed to TCM.

Conclusion: TCM can provide both substrate and triggers for TdP. Recognizing the complex interplay between TCM and TdP is crucial for timely intervention and may improve patient prognosis.

Biography

Currently a cardiology fellow, Eric Tran is pursuing advanced training in cardiac electrophysiology. Tran's academic focus centers on arrhythmias and the assessment of new medical technologies. When away from the clinic, Tran enjoys international travel with Tran's wife, playing pickleball, and staying current with tech trends.



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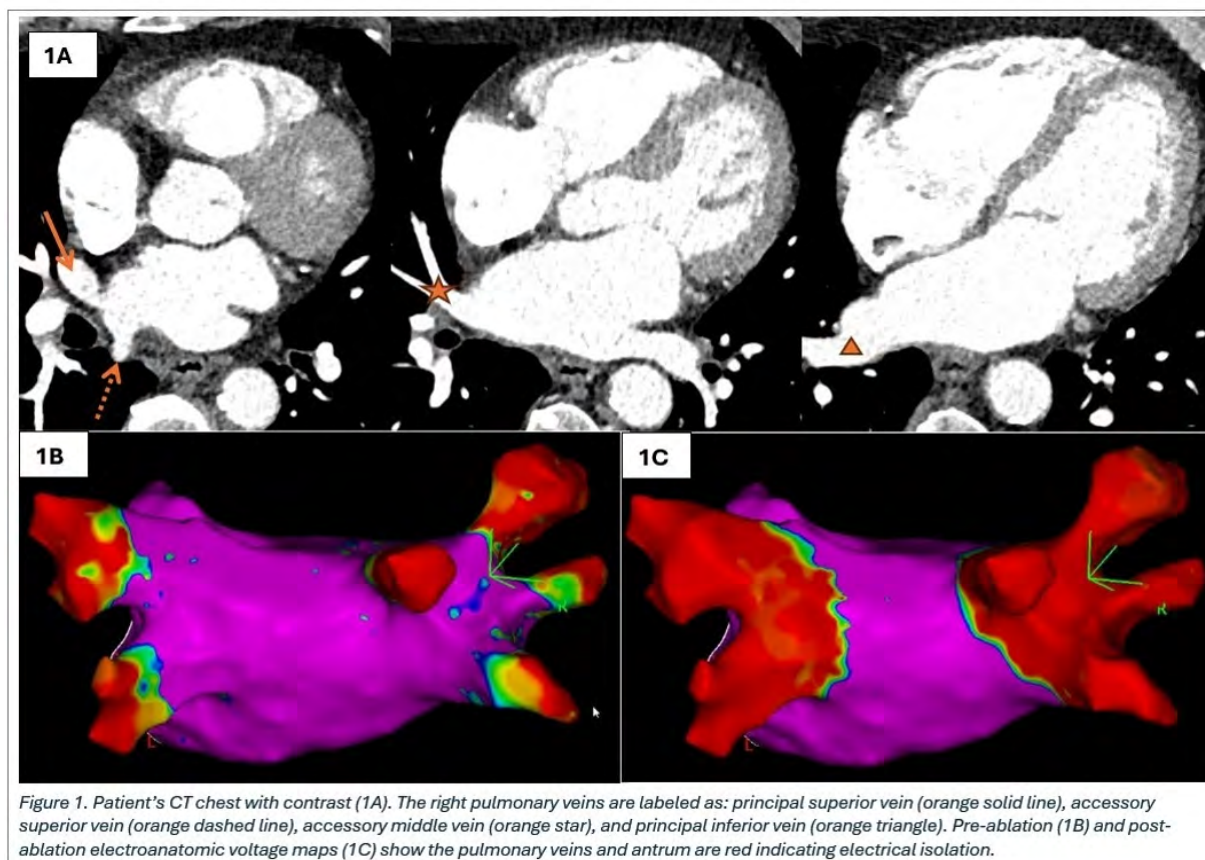
Successful isolation of right accessory pulmonary veins using a variable-loop pulsed-field ablation catheter

Background: Pulmonary Vein Isolation (PVI) is the cornerstone of catheter ablation for AF and is dependent on achieving durable electrical isolation of all Pulmonary Veins (PVs). Anatomical variations, such as accessory PVs, are common and can lead to incomplete isolation and arrhythmia recurrence. With Radiofrequency Ablation (RFA), this would involve meticulous point-by-point applications, increasing procedure time and risk for complications. Pulsed-Field Ablation (PFA) is a novel, non-thermal ablation method that achieves cell death via irreversible electroporation and utilizes variable shaped catheters that may be better suited to address variant anatomies. This report describes the successful use of PFA for the isolation of accessory PVs during a standard PVI procedure and highlights the safety and efficiency of PFA systems in managing complex venous anatomy.

Case: A 75-year-old male with HFpEF and symptomatic persistent AF presented for ablation. Pre-procedural CT identified a complex right-sided venous anatomy comprising four separate PVs: principal superior, accessory superior, accessory middle, and principal inferior PVs (Figure 1A). Electroanatomic mapping with the Pentaray mapping catheter in the CARTO 3 system (Biosense Webster, Inc. Irvine, CA, USA) confirmed distinct ostia for the accessory PVs (Figure 1B). PVI was performed using the Varipulse PFA catheter. The variable-loop design facilitated isolation of the accessory PVs by adjusting the catheter diameter to match the specific ostial dimensions. PFA was delivered to the ostia and antra. Post-ablation mapping and pacing confirmed bidirectional block in all PVs (Figure 1C). There were no acute complications. At 1-month follow-up, the patient remained in sinus rhythm and asymptomatic.

Conclusion: This case demonstrates the feasibility, safety, and efficiency of using PFA to treat a patient with complex PV anatomy, which typically requires the creation of a more complex lesion set compared to a standard four-vein anatomy.

Figure 1. (A) Complex right-sided venous anatomy on pre-procedural CT; (B) distinct ostia of the accessory pulmonary veins on electroanatomic mapping; (C) bidirectional block in all pulmonary veins post-ablation.



Biography

Currently a cardiology fellow, Eric Tran is pursuing advanced training in cardiac electrophysiology. Tran's academic focus centers on arrhythmias and the assessment of new medical technologies. When away from the clinic, Tran enjoys international travel with Tran's wife, playing pickleball, and staying current with tech trends.



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Early-onset coronary artery disease in a young adult with suspected childhood Kawasaki disease

Background: Acute Coronary Syndrome (ACS) in young adults is uncommon and should prompt consideration of non-atherosclerotic causes of coronary artery disease. Kawasaki Disease (KD) is a childhood vasculitis associated with late coronary complications, including aneurysm formation, stenosis and thrombosis, which may present in adulthood.

Case Presentation: A man in his early twenties presented with a 3-day history of exertional chest pain and dyspnoea. Troponin was elevated, electrocardiography demonstrated inferior T-wave inversion, and echocardiography showed mild left ventricular systolic dysfunction. Coronary angiography demonstrated severe triple-vessel disease, with chronic total occlusion of the mid left anterior descending artery, proximal left circumflex artery and proximal right coronary artery.

The severity and distribution of coronary disease were considered disproportionate to his conventional cardiovascular risk profile. He had a history of previous tobacco smoking and significant exposure to high-volume vaping products. Although emerging evidence suggests adverse cardiovascular effects associated with e-cigarette use, its contribution to severe premature coronary artery disease remains uncertain.

Further investigations excluded vasculitis, familial hypercholesterolaemia, sitosterolaemia and other inflammatory arteriopathies. A history of prolonged febrile illness during childhood subsequently raised suspicion of previously undiagnosed KD. Intraoperative findings during coronary artery bypass grafting demonstrated appearances suggestive of an arteritic rather than conventional atherosclerotic process, further supporting this diagnosis.

Conclusion: This case highlights the importance of considering non-atherosclerotic causes of ACS in young adults presenting with severe multivessel coronary disease. A detailed childhood history may provide important diagnostic clues to previously unrecognised KD, which can result in significant coronary complications years after the acute illness. Recognition of atypical causes of premature coronary artery disease is important to guide appropriate investigation, revascularisation and long-term cardiovascular follow-up.

Biography

Junaid Naeem is an FY2 doctor working in Manchester with a special interest in Internal Medicine. Naeem is currently involved in clinical research and case report work, with a particular interest in complex and challenging presentations of cardiovascular disease. Naeem is a co-author of the case report, Previously Undiagnosed Kawasaki Disease Presenting as Severe Premature Multivessel Coronary Artery Disease in a Young Adult, which highlights the importance of recognising atypical and previously undiagnosed disease in young patients. Naeem is keen to further develop clinical and academic interests in Internal Medicine and contribute to improving patient care through clinical research and education.



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Meta-data harmonisation and data pre-processing for machine learning classifiers and decision-support on regional cohorts with infective endocarditis

Artificial Intelligence (AI) and Machine Learning (ML) are increasingly being used for Infective Endocarditis (IE) conditions, particularly for their diagnosis and prognosis with predictive modelling. This will lead to medical reporting greater improvements in diagnostic accuracy, risk stratification and mortality prediction tasks.

However, the development of robust and generalised models greatly depends on the availability of quality, standardised and interoperable healthcare data sources. International metadata standards, including those of SNOMED CT, ICD-10, HL7 FHIR as well as the Dictionary of Medicines and Devices (DM+D), have been developed to enable interoperability with secondary data sources across healthcare systems.

Despite the increased adoption of these standards, there is limited evidence describing or quantifying the practical challenges for establishing a benchmark approach of AI-trained and tested models, using disease-specific datasets with standardised semantic structures across fused healthcare data sources across the South of England.

The dataset of interest for harmonisation and fusion included patient demographics, area-level socio-economic deprivation (Index of Multiple Deprivation), antimicrobial regimens, microbiology, haematology and biochemistry, affected valve or Cardiac Implantable Electronic Device (CIED), cardiac surgery referrals, valve surgery, multimodality cardiac imaging (including echocardiography and positron emission tomography), follow-up clinics, and death verification.

The common metadata elements with their standardised definitions were successfully established in order to facilitate the mapping to a pre-set regional Infective Endocarditis variables library with feasible contexts and local constraints. This led us to a successfully benchmarked harmonisation process with systematic characterisation data variations in clinical coding, terminology, completeness, definitions and interoperability across the region's healthcare hospitals. Indeed, our work focused on the development and evaluation of a regional IE research data library of the south of England, which meets the challenges of metadata harmonisation. It is then automatically followed by data pre-processing for training, validating and performance-testing of our deployed supervised Machine Learning algorithms. These are based on decision-tree classifications which lead to improving decision-support for diverse IE cases for care. Also, our future work aims at incorporating more data sources across the regional healthcare institutions, for larger metadata harmonisation campaigns which will provide us with much more generalised and specialised IE decision-trees classifiers for operations.

Biography

Mihye Lee is a Consultant Medical Microbiologist at University Hospitals Dorset NHS Foundation Trust. Lee's primary clinical and research interest lies in infective endocarditis, and Lee chairs the hospital's infective endocarditis multidisciplinary team. Also, as an academic Lecturer at Bournemouth University, Lee's current doctoral research focuses on the application of machine learning and artificial intelligence in infective endocarditis.



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Management conundrum of right ventricular failure in a mixed connective tissue disease overlap syndrome of systemic lupus erythematosus and systemic sclerosis

Learning outcomes: Management of Connective Tissue Disease-Related Pulmonary Hypertension with Right Ventricular Failure requires a structured approach: (a) preload optimisation, (b) augmentation of cardiac contractility, (c) reduction of RV afterload (d) treatment of underlying cause and cautious transition to long term pulmonary vasodilators.

Optimal management of Right Ventricular Failure in CTD-PAH necessitates a personalized long-term strategy for pharmacotherapy and follow-up, formulated through multidisciplinary collaboration.

Patient presentation: A 36-year-old woman with a significant history of Group 1 Pulmonary Arterial Hypertension (PAH) with secondary to mixed connective tissue disease overlap syndrome (systemic lupus erythematosus and systemic sclerosis), presented with a one-week history of fever, non-productive cough, and gastrointestinal symptoms including diarrhoea, nausea, vomiting, and abdominal pain. She also reported worsening shortness of breath and orthopnoea. She has severe group 1 PAH which was complicated by Right Ventricular Failure. Her previous right heart catheterisation in Dec 2021 showed a Mean Pulmonary Arterial Pressure (MPAP) of 59 mmHg. Her previous transthoracic echocardiogram in February 2025 showed normal left ventricular ejection fraction of 55%, flattened interventricular septum consistent with right ventricular pressure and volume overload, severely dilated right ventricle with moderate right ventricular hypertrophy and moderately impaired right ventricular function. She was initiated on triple therapy with sildenafil, macitentan and selexipag. She was not a candidate for home pump with epoprostenol infusion due to poor social and

family support. With regards to the management of her complex Connective Tissue Disease which was diagnosed in 2017, she was maintained on a baseline prednisolone 20mg OM, hydroxychloroquine 200mg 5x/week, azathioprine 50mg OM dose and tacrolimus 0.5mg OM dose.

On examination, she was febrile (40.1°C), tachycardic (HR 120 bpm), and hypotensive (BP 79/53) mmHg, requiring initiation of norepinephrine at 0.1 mcg/kg/min. She also developed hypoxia, with an initial saturation of 77% on room air which subsequently improved to 90% after being initiated on high-flow nasal cannula (60 L/min, 60% FiO₂).

Initial workup: Her ABG showed severe type 1 respiratory failure with P/F ratio of 62. Her bedside echocardiogram showed evidence of right ventricle volume and pressure overload - dilated right ventricle, D-shaped septum as well reduced left ventricular ejection fraction ?LVEF. Her COVID test returned positive. Electrocardiogram done showed old T wave inversions in lead II, III, AVF, V2-V5, no electrical alternans and no low QRS voltages. Chest X-ray taken in AP film showed faint patchy airspace opacities in the right lower zone. Procalcitonin was 7.50 ug/L and C reactive protein was 85.0 mg/L. Troponin levels were 67 to 70 ng/dL, serum lactate peaked at 1.5 mmol/L. Her sodium was 134 mmol/L, potassium 4.0mmol/L, creatinine 106 umol/L, urea 11.6 mmol/L and bicarbonate 10 mmol/L. Her liver function test was normal.

Diagnosis and management: The patient was admitted to Outbreak Intensive Care Unit (OICU) for isolation of COVID infection. She was diagnosed to have mixed septic and cardiogenic shock, driven by a severe COVID-19 infection with concurrent RV volume overload complicated by Type 1 respiratory failure. She was treated for a possible superimposed bacterial pneumonia with a course of IV Benzylpenicillin, and IV Ceftazidime, alongside a 2-day course of Remdesivir and 3 days of IV Dexamethasone for COVID-19. A multiplex pneumonia panel was positive for Streptococcus pneumoniae, Respiratory Syncytial Virus (RSV), and Staphylococcus aureus (though with doubtful significance). Her care was subsequently transferred to cardiac intensive care unit for further management for RV failure. RAI team was also consulted regularly for the titration of immunosuppressants. Tacrolimus and azathioprine were initially held off in view of acute infection with haemodynamic instability.

Follow up: Her vasopressor was switched from noradrenaline to vasopressin 1.8U/hour as it was deemed to have less pulmonary vasoconstriction effect. Continuous iv furosemide infusion of 5mg/hour was started for treatment of right ventricular volume overload. Good diuretic response was achieved with urine output of 2-3mL/kg/hour was achieved. Inhaled iloprost, which is a potent pulmonary vasodilator, was started with aim to reduce right ventricular afterload. IV milrinone 0.125mcg/kg/min was initiated as a short acting inodilator and its positive inotropy effect. Her oxygenation remained stable with HFNC 60L/95% and was subsequently weaned to nasal prongs needing 1-2L/min oxygen. There was a plan for trial of intravenous epoprostenol with a right heart catheterisation prior should her condition continue to deteriorate. She was transferred to general ward then eventually discharged home with PO sildenafil and ambrisentan with plan to consider initiation of sotatercept in the outpatient setting.

Conclusion: Connective Tissue Disease-Related Pulmonary Hypertension (CTD-PH) is a leading cause of morbidity and mortality in patients with systemic sclerosis, lupus, and other Connective Tissue Diseases (CTDs). In this condition, the prognosis is principally determined by the development of Right Ventricular Failure (RVF). The prevalence of PH varies by CTD subtype, with systemic sclerosis conferring the highest risk.

Right ventricular dysfunction in CTD-PH results from a combination of factors including increased afterload, maladaptive remodelling, and impaired contractility, leading to distinct haemodynamic phenotypes that require specific and individualised management. Diagnosis and risk stratification of patients with CTD-PH, require a multimodal approach, including clinical assessment for signs of RVF, serial echocardiography to evaluate cardiac structure and function, and right heart catheterization for definitive haemodynamic measurement. Successful treatment hinges on a dual understanding: identifying the specific Connective Tissue Disease and defining the right ventricular phenotype (e.g., dilated, hypertrophic, or failing), as this directly informs therapeutic choices.

Effective management rests on addressing four central pillars: preload optimization, contractility augmentation, afterload reduction, and treatment of the underlying CTD. Preload optimization is achieved with cautious use of loop diuretics (e.g., furosemide, bumetanide, torsemide), with thiazide diuretics considered for refractory volume overload. For our patient, we chose low dose continuous furosemide therapy for gentle and controlled fluid removal. Ultrafiltration is another good option for controlled diuresis if response to pharmacological therapy is inadequate. Pharmacologic therapies for afterload reduction are central in CTD-PH with RVF. Inhaled vasodilators (nitric oxide, prostacyclin analogues) may be used acutely in decompensated RVF. Our patient was started on inhaled iloprost (a prostacyclin analogue) for pulmonary vasodilation for right ventricle afterload reduction. She was later restarted on macitentan, an FDA-approved endothelin receptor antagonist for Pulmonary Arterial Hypertension (PAH, WHO Group I), which is commonly used in CTD-PH. Phosphodiesterase-5 inhibitors (sildenafil, tadalafil) and soluble guanylate cyclase stimulators (riociguat) are also effective in reducing pulmonary vascular resistance and improving RV function.

Multidisciplinary care and referral to pulmonary hypertension centers of excellence are recommended for complex cases and for advanced therapies.

Table 1. Pulmonary vasodilator therapy.

Medication	Dose	Start Date	End Date
Sildenafil	25mg TDS / 25mg BD	Aug 2017 / Aug 2019 (by patient)	
	25mg TDS	Aug 2021 (short / interruption in Oct / Nov 2022)	
Macitentan Ambrisentan	10mg OM 5x10mg OM / 5mg OM	Oct 2018 / Oct 2021 (Short interruption in Oct / Nov 2022) / March 2024	Aug 2021
Selexipag	1200mcg BD	Aug 2019	Aug 2021

Table 2. Serial haemodynamic data.

Date	Aug 2017	March 2019	October 2019	December 2021
RAP	4	8	1	1
PAP	49/18 (30)	68/28(43)	63/23(37)	106/35(58)
PCWP	5	8	4	4
CO/CI	5/4.24	4.6/3.75	4.4/3.52	3.731/2.79
PVR (WU)	6	7.6	7.5	14.2
MVO2 (%)	72	79	75	74

Biography

Moganapriya is a 34-year-old resident in Emergency Medicine with a focused interest in acute and critical care. During her clinical training, Moganapriya developed a particular interest in cardiology, gaining experience in the evaluation and management of cardiovascular emergencies. Moganapriya's additional clinical interests include paediatrics and toxicology. Moganapriya has demonstrated an ongoing commitment to academic medicine through her involvement in several poster presentations, reflecting active engagement in research and scholarly activity. Outside of her professional commitments, Moganapriya is a dedicated mother to her four-year-old son and values time spent with her ten-year-old dog.



Zin Thandar Win

University of California, Riverside, United States

Diagnostic and management challenge in torsades de pointes with thyrotoxic periodic paralysis

Background: Thyrotoxic Periodic Paralysis (TPP) is a rare but potentially fatal manifestation of hyperthyroidism characterized by sudden hypokalemic paralysis. Excess thyroid hormone stimulates the Na^+/K^+ -ATPase pump, causing rapid intracellular potassium shifts and severe hypokalemia. These shifts markedly increase the risk of cardiac electrical instability, QTc prolongation, and Torsades de Pointes (TdP). Young men, particularly of Asian or Hispanic descent, are most commonly affected, and clinical thyroid signs may be subtle, delaying recognition.

Objective: To describe the diagnostic considerations and treatment strategies for Torsades de Pointes occurring in the setting of Thyrotoxic Periodic Paralysis.

Methods: A detailed case review was conducted, examining clinical presentation, laboratory and ECG findings, arrhythmia progression, and resuscitative interventions. Findings were compared with existing literature on the pathophysiology and management of TPP-associated arrhythmias.

Results: A 21-year-old male with autism presented with sudden generalized paralysis overnight after exercise. Prehospital monitoring revealed diffuse ST depression, and upon arrival, he exhibited intermittent ventricular tachycardia. ECG showed sinus tachycardia with diffuse ST depressions. He shortly developed Torsades de Pointes. Magnesium, calcium, and bicarbonate were administered; however, his rhythm deteriorated into ventricular flutter and ultimately asystole despite defibrillation, epinephrine, amiodarone, lidocaine, and fluid resuscitation. Laboratory studies revealed profound hypokalemia (<1.0 mmol/L), hypomagnesemia, metabolic acidosis with normal anion gap, and severe thyrotoxicosis.

(TSH<0.00 μ IU/mL). The constellation of hypokalemia, paralysis, and ventricular arrhythmias was consistent with TPP complicated by TdP.

Conclusion: This case illustrates the high risk of malignant arrhythmias in TPP due to severe potassium shifts and QTc prolongation. Management hinges on early recognition, cautious potassium supplementation, and magnesium administration with continuous cardiac monitoring.

Nonselective beta-blockers can mitigate thyroid-driven potassium shifts, whereas amiodarone should be avoided due to its QT-prolonging effects. Lidocaine may be considered in refractory cases, but it is not a first-line therapy for QT-prolongation–related arrhythmias.

Beta-blockers are an important adjunct for immediate and short-term prevention, but rapid and sustained euthyroidism is the cornerstone of long-term recurrence prevention in TPP. Failure to promptly identify TPP may lead to refractory arrhythmias and fatal outcomes, highlighting the need to consider this diagnosis in young patients presenting with sudden paralysis and hypokalemia.

Biography

Zin Thandar Win is a PGY-3 Internal Medicine Resident at the University of California, Riverside School of Medicine/St. Bernardine Medical Center. Trained in both Myanmar and the United States, Win is pursuing a career in cardiology, with a strong interest in general cardiology, and is currently applying to cardiology fellowship programs. Outside of medicine, Win enjoys traveling, trekking, and exploring new cuisines.

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