MATHEWS
CONNECTING RESEARCH

International Conference on

CANCER SCIENCE AND RESEARCH

NOVEMBER 17-19, 2025

SINGAPORE

Village Hotel Changi
1 Netheravon Rd, Singapore

BOOK OF ABSTRACTS

MATHEWS
CONNECTING RESEARCH

INTERNATIONAL CONFERENCE ON

CANCER SCIENCE AND RESEARCH

17-19
NOVEMBER

Book of Abstracts

List of Sections

Keynote Speakers	5
Welcome Messages	6
About Organizer	12
CPD Accreditation Overview	13
About Journal collaboration	14
Table of Contents	15
Keynote Sessions	23
Oral Sessions	41
Poster Sessions	121

Our Keynote Team

Henrique Manuel dos Santos Faneca

University of Coimbra (CNC-UC), Portugal

Julia Sidorova

Instituto Carlos III de Salud (CIBER-EHD, Spain

Marika Crohns

Impactful Innovations Management Consultants LLC, United Arab Emirates

Paulo César De Morais

Catholic University of Brasilia, Brazil

Rajvir Dahiya

University of California San Francisco School of Medicine (UCSF), USA

Sergey Suchkov

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

Subhas C. Kundu

3Bs Research Group, I3Bs – Research Institute of University of Minho, Portugal

Thomas J. Webster

Brown University, USA

Yan-Shen Shan

National Cheng Kung University, Taiwan

Welcome Message

Rajvir Dahiya

University of California San Francisco (UCSF) School of Medicine, USA

Good Morning Everyone,

As a Keynote Speaker and an Organizing Committee Member for the International Conference on Cancer Science and Research, held on November 17–19, 2025, in Singapore, it is my great honor to welcome you all to this truly exciting and innovative conference.

Cancer remains one of the most challenging diseases of our time. This conference brings together brilliant scientists, dedicated clinicians, and visionary innovators from around the world. Each of you are making an incredible contribution and groundbreaking discoveries.

Innovation lies at the heart of progress. Starting from early detection, personalized medicine to CAR-T and RNA gene therapy.

We should encourage our young scientists, support collaborative research, and translate our discoveries into real-world patient benefits.

We must remember that behind every clinical and molecular diagnosis, every discovery, there is a patient — a life, a family, a story. Our goal is to give hope, healing, and a better future to those fighting cancer. Together, through compassion and collaboration, we can make a profound difference in patient care.

I extend my heartfelt gratitude to all the scientists, researchers, clinicians, and organizers who have made this event possible. Your passion, dedication, and vision are shaping the future of cancer science.

Let us continue to collaborate, share our knowledge, and inspire one another — because together, we can conquer cancer.

Welcome Message

Professor Paulo De Morais

Catholic University of Brasilia, Brazil

Dear Colleagues and Friends,

With great pleasure, we welcome you to join us for the International Conference on Cancer Science and Research. The conference will take place from 17 to 19 November 2025, in Singapore and Online.

The International Conference on Cancer Science and Research, Singapore 2025, will provide stage to researchers, oncologists, healthcare professionals, and industry experts to interact and exchange recent breakthroughs in cancer research and treatments. The conference will focus on discussing the current findings and networking opportunities for the advancement of cancer science and research. The program will embrace latest trends in cancer science, with special emphasis on molecular biology, cancer immunotherapy, early detection and diagnosis, and prevention strategies. The conference will feature world renowned keynote speakers, oral and poster presentations to talk about existing research and upcoming challenges.

We cordially invite and encourage potential authors and co-authors to contribute by submitting their latest research findings in all areas of cancer science and research. With the presence of outstanding international experts, this conference promises a productive exchange of innovative ideas that can lead to new discoveries and applications. Authors are invited to submit their abstracts for the conference.

Welcome Message

Dr Sergey Suchkov, MD, PhD

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

Dear Colleagues, Partners and Friends,

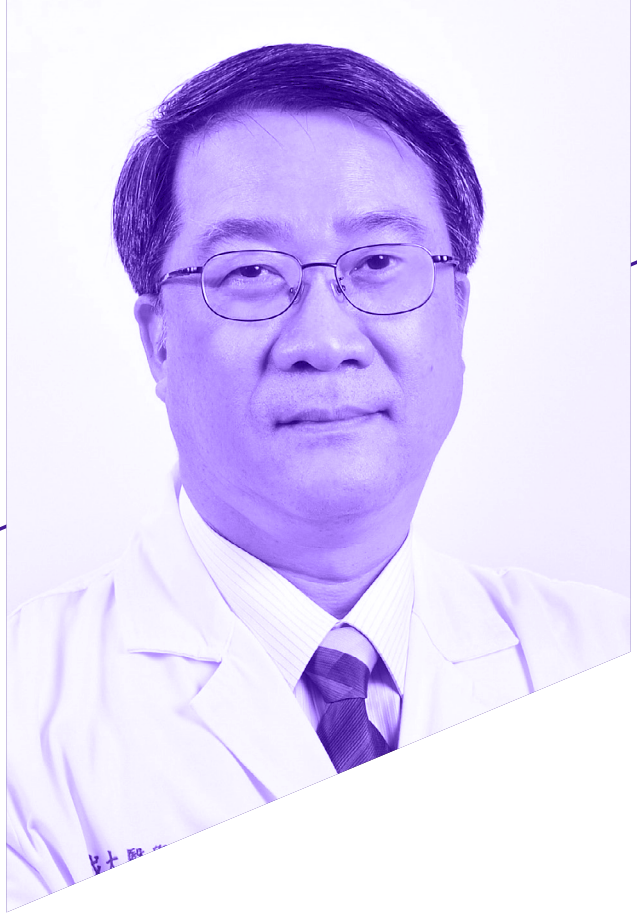
It gives us a great pleasure to welcome you to the International Conference on Cancer Science and Research, which is scheduled to be held in November 17-19, 2025, in Singapore, one of Asian's most Hi-Tech cities, which is really a highly attractive settlement, offering you a kaleidoscope of brilliances.

Being a cornerstone of modern OMICS-guided and IT-assisted pre-cancer diagnostics and targeted treatment, the upgraded cancer precision pathology generates global avenues to secure the health and wellness via the phenomenal impact of Personalized and Precision Oncology (PPO)-related philosophy and armamentarium to be used in the daily practice of cancer practitioners. Those vital platforms bring together unique minds dedicated to accelerating progress in cancer research, translational applications, enhancing therapeutic approaches, and fostering cross-disciplinary collaboration in the fight against cancer.

This highly anticipated conference is to stimulate collaboration and knowledge exchange on the latest breakthroughs, innovative technologies, and evidence-based practices in cancer diagnosis, treatment, and prevention, whilst bridging the gap between scientific discovery and clinical application via biodesign-inspired translational bridging to improve patient outcomes worldwide. Over the course of this conference, attendees will have the opportunity to engage in insightful discussions, participate in interactive workshops, and explore cutting-edge research through keynote speeches, oral and poster presentations, and networking sessions. Attendees will also have the opportunity to make and renew friendships, to exchange ideas, to present their latest findings, and foster collaborations on future endeavors and research projects aimed at advancing cancer treatment and improving patient outcomes globally. This Conference would bring together relevant field experts, professors, bioindustry representatives, postdoctoral fellows, and research students from around the world, providing them with opportunity to report, present, share, and discuss scientific questions, achievements, issues and challenges in the field. For stakeholders is a grand step not to miss the opportunity to join large numbers of healthcare bioindustry professionals, government regulators, patients, academia, and exhibitors to drive insights to action.

Building on the success of the preceding meetings, this Grand Event will feature a highly interactive, stimulating and multidisciplinary Program to raise the top contributions in the PPO-related education and training of the next step generation. In this context, our goal is to open this Forum to facilitate the exchange of knowledge and experience and to invigorate the field with young oncologists, researchers and biodesigners.

We hope you will have an academically productive time at the conference and a fun-filled time in the phenomenal place. We would like to thank each of you for attending this prestigious Conference and bringing your expertise to our gathering. We invite you save the date for this Conference, and look forward to seeing you in Singapore!



Welcome Message

Yan-Shen Shan MD, PhD

National Cheng Kung University, Taiwan

Dear Distinguished speakers, colleagues, and participants:

I am Dean of College of Medicine, NCKU, Tainan, Taiwan, and I am also one of the Organizing Committee for the International Conference on Cancer Science and Research, 2025. Welcome you to attend this international conference. It's a true pleasure to meet you in the beautiful city, Singapore.

Cancer biology is the study of the cellular and molecular mechanisms underlying the development and progression of cancer. Research in cancer biology has revealed various pathways and networks that cancer cells exploit to survive and proliferate. The study of cancer biology is fundamental for the development of targeted therapies and personalized medicine. By unraveling the complexities of cancer at the molecular level, scientists aim to create treatments that specifically target cancer cells while minimizing damage to normal tissues. This approach has already led to the approval of several targeted therapies that have significantly improved patient outcomes. The field of cancer biology is crucial for advancing our knowledge of cancer and enhancing the effectiveness of treatments, ultimately leading to better patient care and outcomes.

In these three days, I hope you take full advantage of the sessions, engage in stimulating discussions, and build meaningful connections. The insights and relationships you gain here are invaluable, driving innovation and enhancing healthcare for cancer patients.

Welcome Message

Henrique Manuel Santos Faneca

Principal Investigator, University of Coimbra (CNC-UC), Portugal

Dear Participants,

On behalf of the organizing committee, it is my great pleasure to welcome you all to the International Conference on Cancer Science and Research. This gathering of researchers, clinicians, and professionals from around the globe reflects our collective commitment to advancing the understanding, treatment, and prevention of cancer.

Over the course of this conference, we will delve into a diverse range of key topics in the field of cancer science. From understanding different types of cancer and improving detection and diagnosis methods to exploring breakthroughs in drug development, vaccines, and treatment approaches, we aim to foster insightful discussions and collaborations.

We will also touch upon critical areas such as cancer genetics and genomics, palliative care, survivorship, and long-term care, alongside the latest advancements in cancer biology and clinical trials. By sharing knowledge, case studies, and innovative research, we hope to spark ideas that lead to tangible progress in the fight against cancer.

This conference will be more than a platform for learning, it will be an opportunity to build connections and strengthen the global community dedicated to conquering this disease. We encourage you to actively participate, exchange ideas, and inspire one another as we work together toward a brighter future for cancer patients worldwide.

Thank you for joining us. Let us make this conference a great success!

Welcome Message

Marika Crohns

Impactful Innovations Management Consultants LLC, United Arab Emirates

Welcome to The International Conference on Cancer Science and Research

We are pleased to welcome you to the official website of The International Conference on Cancer Science and Research, a leading global platform dedicated to advancing cancer research, treatment, and care. This hybrid event will be held from November 17-19, 2025, in Singapore and online, bringing together researchers, clinicians, healthcare professionals, and advocates worldwide to share knowledge, foster innovation, and build meaningful collaborations in the fight against cancer.

Cancer remains a significant global health challenge that demands ongoing dedication and multidisciplinary efforts. This conference offers a unique opportunity to explore the latest scientific breakthroughs, clinical advancements, and best practices across a wide range of topics—from cutting-edge therapeutics and precision medicine to survivorship and supportive care.

Featuring keynote presentations, interactive sessions, and panel discussions, the event highlights diverse perspectives and expertise, promoting holistic approaches to improve patient outcomes and quality of life.

We invite you to explore the conference program, learn about our esteemed speakers, and discover how this hybrid format enables greater access and engagement from the global cancer community.

Thank you for your interest and support. Together, we are strengthening the global effort to overcome cancer and create a healthier future for all!

ABOUT

Mathews International LLC

Founded in 2015, Mathews International LLC has rapidly established itself as a prominent publisher in the scientific community. With a strong focus on open access, Mathews International provides a platform for disseminating cutting-edge research across various scientific disciplines. The company has published numerous high-quality journals, fostering advancements in science and ensuring that knowledge is freely accessible to researchers, professionals, and the public alike.

Driven by a commitment to excellence, Mathews International prides itself on maintaining rigorous peer-review standards and collaborating with a diverse network of authors, reviewers, and editors from across the globe. Its open-access model not only promotes transparency and inclusivity but also accelerates the dissemination of vital scientific information. This approach has earned the company a reputation for publishing trustworthy, high-impact research that contributes to solving global challenges in fields such as medicine, environmental science, and technology.

As part of its ongoing commitment to advancing science and fostering collaboration, Mathews International LLC is now expanding into organizing conferences. These events aim to bring together experts, innovators, and thought leaders from around the world to share insights, exchange ideas, and explore the latest developments in their respective fields. The conferences will feature a diverse range of topics, from emerging technologies to groundbreaking healthcare innovations, fostering interdisciplinary dialogues that inspire new perspectives and solutions.

With years of experience in publishing, Mathews International's foray into conferences promises to deliver high-quality, impactful events that align with its mission of advancing scientific discovery and promoting global collaboration.

ABOUT

CANCER 2025

The **International Conference on Cancer Science and Research** (Hybrid Event) will be held from **November 17-19, 2025**, in **Singapore** and **Online**. This premier global event is dedicated to advancing knowledge and collaboration in the field of Oncology. Cancer 2025 will bring together leading researchers, oncologists, healthcare professionals, and industry experts from across the globe to discuss the latest breakthroughs in cancer research and treatment. The conference will feature a comprehensive program, including keynote presentations from renowned experts, interactive oral and poster sessions, and dynamic panel discussions. Key topics will encompass a wide range of areas in cancer science, such as molecular biology, cancer immunotherapy, early detection and diagnostics, and prevention strategies. Attendees will have ample opportunities to connect with peers, exchange ideas, and establish professional relationships through networking events, and informal gatherings, fostering collaboration and innovation essential for tackling the challenges in cancer research and treatment.

Networking is a key component of the conference, offering participants the chance to connect with fellow professionals and establish collaborative relationships that can lead to impactful research partnerships. Join us to be part of a transformative event that aims to advance cancer research, improve patient care, and ultimately contribute to a world free of cancer. Your participation will play a crucial role in shaping the future of oncology and fostering collaboration among the global cancer community. Together, we can make significant strides in understanding and combating cancer.

ABOUT

CPD Accreditation

Overview

Continuing Professional Development (CPD) represents a commitment to lifelong learning and the ongoing enhancement of professional knowledge and skills. This program provides participants with an opportunity to gain formal recognition for their dedication to professional growth through the award of CPD credits. These credits acknowledge active participation in educational sessions, workshops, and interactive discussions that contribute to advancing expertise and practical competence.

CPD Credit Allocation

Participants are eligible to earn 1 CPD credit for each hour of active attendance, with the opportunity to accumulate up to 25 CPD credits throughout the duration of the program. Attendance is tracked to ensure accurate credit allocation, and participants who complete the required hours will receive an official certificate verifying their earned CPD credits.

Purpose and Recognition

The CPD accreditation underscores the educational merit and professional relevance of the program. It enables participants to:

- Maintain and expand their professional knowledge base
- Strengthen practical competencies and decision-making abilities
- Demonstrate commitment to ethical and evidence-based practice
- Align with institutional, organizational, or regulatory standards for ongoing professional development

Many professional bodies and licensing authorities recognize CPD credits as part of their certification or renewal requirements. Participants are encouraged to confirm the applicability of these credits with their respective institutions or governing organizations.

Value of CPD Credits:

- Encourages continuous learning and skill enhancement
- Contributes to career advancement and professional recognition
- Promotes knowledge sharing and collaboration in oncology research
- Supports compliance with professional development requirements

Commitment to Professional Growth

By engaging in accredited educational activities, participants demonstrate a proactive approach to career advancement and contribute to the broader goal of maintaining high standards of practice across disciplines. The CPD framework ensures that professionals remain informed, adaptable, and capable of meeting emerging challenges in their respective fields.

CANCER-2025 & Mathews Journal of Cancer Science: A Strategic Partnership

CANCER-2025 is honored to partner with the **Mathews Journal of Cancer Science (MJCS- ISSN: 2474-6797)** as the official supporting journal for this premier event in Cancer Science and Research. This collaboration ensures that the research shared at the conference reaches a **global audience**, providing participants with opportunities to showcase their work on a respected international platform.

Conference Proceedings with DOI:

- The CANCER-2025 proceedings book will be assigned a DOI, making all presented abstracts and findings globally accessible and citable.
- This guarantees that your research is recognized and easily referenced by the scientific community.

Opportunity for Full-Length Publications:

- Participants can submit full-length manuscripts to MJCS for peer-reviewed publication.
- Article processing charges are fully waived, ensuring a seamless path to publication.
- Manuscripts undergo rigorous review by the journal's editorial team, ensuring high-quality scientific standards.

Journal Visibility & Indexing:

Indexed in CrossRef, Google Scholar, WorldCat, J-Gate, DRJI, ISI, Genamics JournalSeek, Scilit, and CiteFactor, ensuring global visibility, discoverability, and credibility of published research.

Participant Benefits

- Global visibility for your research
- Peer-reviewed recognition in a high-profile journal
- No publication fees
- Contribution to advancing cancer research and patient care worldwide

This collaboration reflects CANCER-2025's commitment to fostering scientific excellence, promoting knowledge exchange, and providing researchers with credible platforms to disseminate their work to the global oncology community.

Table of Contents

Title: Association between lung cancer and prostate cancer, 3 studied cases, short literature review 44
Alexandru Calin Grigorescu, Clinical Hospital for Nephrology Dr Carl Davila, Romania

Title: Well differentiated liposarcoma of face: An unusual case report 45
Anu Jose,The University Hospital of West Indies, Jamaica

Title: Theory and perspective: Big data and artificial intelligence accelerate the pursuit of a universal cancer principle—opportunities and challenges 47
Anyou Wang, DIFIBER LLC, United States

Title: Application of CRISPR–Cas9 technology in the treatment of chronic lymphocytic leukemia with TP53 mutations 48
Aurelian Udristioiu, Titu Maiorescu University of Bucharest, Romania

Title: The power of trust through the eyes of a patient 49
Bep Dhaliwal, Patient Advocate, United kingdom

Title: Targeting oral squamous cell carcinoma with thienopyrimidines 122
Biliana Nikolova, Bulgarian Academy of Sciences, Bulgaria

Title: The transcriptional regulator PRDM1: Key insights into its role in NK cell homeostasis and malignancy 50
Can Küçük, Dokuz Eylül University, Turkey

Title: Is cancer theory incomplete? 51
Chanda Siddoo-Atwal, Moondust Cosmetics Ltd, Canada

Title: Effectiveness of smoking cessation interventions for smokers undergoing lung cancer screening: A systematic review and meta-analysis 124
Cheol Min Lee, Seoul National University Hospital Healthcare System, Republic of Korea

Title: Functional integration of the ATP synthasome drives mitochondrial efficiency in breast carcinoma 125
Chia-Jung Li, Kaohsiung Veterans General Hospital, Taiwan

Table of Contents

Title: monoHER as a selective radiosensitizer in breast cancer 52
Chujie Li, Maastricht University, The Netherlands

Title: The regulatory role of endothelial RhoA on tumor microenvironment 53
Constantinos M. Mikelis, University of Patras, Greece

Title: Beyond survival: The silent struggle of living after cancer 54
Debi Lynn, Business Resilience Strategist and Certified Grief Educator, United states

Title: Nanoparticle-based therapeutic platforms: Development and evaluation for cancer treatment 56
Dharmendra Kumar, Swami Vivekanand Subharti University, India

Title: Instant high-sensitivity non-invasive in-vivo diagnosis during biopsy 57
Dmitri Lapotko, Scorpido Photonics Inc, USA

Title: Difficult-to-manage prostate cancer scenarios illustrating the pathologist's role: Two case reports 58
Drilon Bytyçi, University of Prishtina, Kosovo

Title: Updates on prostate cancer 60
Drilon Bytyçi, University of Prishtina, Kosovo

Title: A new tension-sensitive signaling pathway involving polymerization of actin prevents chromatin bridge breakage in cytokinesis in human cancer cells 62
Eleni Petsalaki,University of Crete, Greece

Title: Overview of PSMA PET and salvage treatment of previously irradiated recurrent prostate cancers 64
Fatlinda Berisha, University of Pristina Hasan Prishtina, Kosovo

Title: Analysis of 64 cases of oral squamous cell carcinoma of the buccal mucosa 66
Gaurav Vishal, Prathima Cancer Institute, India

Title: Targeted nanosystems to mediate combined cancer therapy 24
Henrique Manuel dos Santos Faneca, University of Coimbra (CNC-UC), Portugal

Table of Contents

Title: Global trends and predictive factors of prophylactic mastectomy in women: A systematic review and meta-analysis 68
Huynh Yen Phi, Taipei Medical University, Taiwan

Title: Daily profile in miRNA expression in the colon and their role in colorectal cancer 70
Iveta Herichová, Comenius University in Bratislava, Slovakia (Slovak Republic)

Title: Extracellular vesicle pathways as regulators of tumor-vascular interactions in glioblastoma 71
Janusz Rak, McGill University, Canada

Title: Targeting SIRT7-mediated DNA damage repair as a novel strategy in pancreatic cancer 126
Jianghao Ren, Zhejiang University, China

Title: Information leakage: Types, remedies, and open problems 26
Julia Sidorova, Instituto Carlos III de Salud (CIBER-EHD), Spain

Title: Expanding the reach: Integrating -generated auto contours via deep learning segmentation into diverse treatment planning systems 73
K R Muralidhar, Physics Karkinos Healthcare Private Limited, India

Title: Time and cost to healthcare providers and sites associated with preparation and administration of subcutaneous vs intravenous nivolumab for the treatment of cancer: A time-driven activity-based costing study 128
Karishma Shelley, Bristol Myers Squibb, United States

Title: Improving quality of life among cancer patients in the modern era 75
Liburn Grabovci, University of Pristina Hasan Prishtina, Kosovo

Title: Updates on CNS tumors 77
Liburn Grabovci, University of Pristina Hasan Prishtina, Kosovo

Title: Is artificial intelligence a possible solution for challenges in healthcare? 79
Lorent Sijarina, University of Prishtin, Kosovo

Table of Contents

Title: Applying the concept of Lean Management: Evaluation of a pioneer off-site injection program for androgen deprivation treatment of prostate cancer 81
Lorent Sijarina, University of Prishtin, Kosovo

Title: Intelligent oncology: The transformative role of AI in the future of cancer research and care 27
Marika Crohns, Impactful Innovations Management Consultants LLC, United Arab Emirates

Title: Oncologic emergencies – A narrative review with expert opinions and latest recommendations 83
Melinda Hysenaj, University of Prishtina Hasan Prishtina", Kosovo

Title: Resveratrol reduces the presence of Extracellular Traps (ETs) in acute promyelocytic leukemia (NB4) cells 85
Minoo Shahidi, Iran University of Medical Sciences, Iran

Title: Cardiac coherence: A new approach to oncology medicine 130
Nabhan Linda, Clinical Psychologist, France

Title: Dr Nicola Sarandria's theory of Arginase-1 and N2 neutrophil's role in rectal cancer based on the 2025 OR1 research study directed by Dr Nicola Sarandria: New insights on the relationship between Arginase-1, tumor ssociated neutrophils, perineural invasion, neoadjuvant therapy and prognosis in rectal cancer patients 86
Nicola Sarandria, Olimpia Medical Center, Italy

Title: Suppression of breast cancer by small molecules that block the prolactin receptor 88
Nira Ben-Jonathan, University of Cincinnati, USA

Title: Immunotherapy in merkel cell carcinoma of the skin: A 2025 comprehensive review 90
Omar Mohammad Alqaisi, Al-Zaytoonah University of Jordan, Jordan

Title: Managing sexual issues in melanoma patients: A scoping review 92
Omar Mohammad Alqaisi, Al-Zaytoonah University of Jordan, Jordan

Table of Contents

Title: A narrative review on the roles of nursing in sexual dysfunction among oncological patients with updated recommendations 94
Patricia Tai, University of Saskatchewan, Canada

Title: Oncology Nurses' attitudes, knowledge and practices in providing sexuality care to cancer patients: A scoping review 96
Patricia Tai, University of Saskatchewan, Canada

Title: Cell viability assays under radiofrequency application modulated by nanomaterials 29
Paulo César De Morais, Catholic University of Brasilia, Brazil

Title: The Paradox of spirituality: Its impact on social wellbeing in AYA cancer survivors 97
Prema Naittee George, Gitam University, India

Title: A novel mRNA genomic technology for precision medicine, cancer diagnosis, prognosis, treatment follow-up 30
Rajvir Dahiya, University of California San Francisco School of Medicine, United States

Title: Lactate dehydrogenase B noncanonically promotes ferroptosis defense in KRAS-driven lung cancer 99
Ren-Wang Peng, University of Bern, Switzerland

Title: Comprehensive pharmacokinetic profiling and molecular docking analysis of natural bioactive compounds targeting oncogenic biomarkers in breast cancer 100
Saba Beigh, Al-Baha University, Saudi Arabia

Title: Copper(II) complexes as potent chemotherapeutic agents for anticancer therapy 101
Salah S. Massoud, University of Louisiana, United States

Title: Targeting alternative lengthening of telomeres in cancer 102
Sarantis Gagos, Biomedical Research Foundation of the Academy of Athens, Greece

Table of Contents

Title: Immunological markers as predictors of unfavorable pathomorphological characteristics, an upgrading, upstaging and risk group increase in prostate cancer patients after radical prostatectomy 103
Sergey Reva, I.P. Pavlov First State Medical University, Saint-Petersburg, Russia

Title: Personalized and Precision Medicine (PPM) through the view of biodesign-inspired transla-tional research: An option for clinical oncologists, caregivers and consumers to realize the potential of genomics-informed care to secure the human biosafety 32
Sergey Suchkov, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Russian Federation

Title: Personalized and Precision Oncology (PPO) to be set up via precision oncology strategy for cancer care team: Developing targeted cancer therapy & advancing personalized cancer care 105
Sergey Suchkov, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Russian Federation

Title: Targeting glioblastoma multiforme through a multifaceted therapeutic drug approach 107
Shadma Fatima, Western Sydney University, Australia

Title: An eternal moment (A patient's feedback to medical care givers) 108
Stephan Bodis, University Zurich, Switzerland

Title: 3D in vitro cancer models using natural biomaterials for studying the cancer microenvironment and drug screening 34
Subhas C. Kundu, 3Bs Research Group, I3Bs – Research Institute of University of Minho, Portugal

Title: Strategic development of novel cancer immunotherapies – Medical strategy toward regulatory success 109
Tanja Obradovic, Arc Nouvel LLC, United States

Title: GPER-Driven crosstalk in breast cancer: Bridging drugs resistance and tumor microenvironment remodeling 110
Tenghua Yu, Jiangxi Cancer Hospital & Institute, China

Table of Contents

Title: Anti-cancer nanomedicine in humans: 30,000 successful cases and counting 36
Thomas J. Webster, Brown University, USA

Title: From experimental research to clinical trial in the treatment of complication of radiotherapy by stem cells 42
Alain Chapel, Institute of Radiological Protection and Nuclear Safety, France

Title: The controversy of radioactive cesium damage on animal pancreas and diabetes 111
Venturi Sebastiano, AUSL-ROMAGNA, Italy

Title: Innovative fiber solutions for cancer diagnostics 112
Viacheslav Artyushenko, Art photonics GmbH, Germany

Title: Synergistic antitumor effects of 2NF and Safingol combination in breast cancer: Molecular mechanisms involving 114
SPHK1, MAPKs, and ER stress
Viviana C. Blank, University of Buenos Aires, Argentina

Title: Hypoxia-fibrosis cycle in pancreatic cancer reveals potential pathways associated with tumor progression and predicts poor prognosis 38
Yan-Shen Shan, National Cheng Kung University Hospital, Taiwan

Title: Improving survival rates of glioma patients in developing countries 117
Yasmeen Idress, Lifecare Hospital Lahore, Pakistan

Title: Beyond relief: Updates on opioid use disorder in cancer patients – A narrative review by experts 115
Yasmeen Idress, Lifecare Hospital Lahore, Pakistan

Title: Preclinical study on new parathyroid recognition technology in thyroid surgery 119
Zheng Weihui, Zhejiang Cancer Hospital, China

BOOK OF ABSTRACTS

MATHEWS
CONNECTING RESEARCH

INTERNATIONAL CONFERENCE ON

CANCER SCIENCE AND RESEARCH

17-19
NOVEMBER

Keynote Sessions

Henrique Faneca
Center for Neuroscience and Cell Biology, University of Coimbra (CNC-UC), Coimbra, Portugal

Targeted nanosystems to mediate combined cancer therapy

Hepatocellular carcinoma (HCC) is one of the major causes of cancer mortality worldwide, highlighting the urgent need for the development of new therapeutic approaches, such as those involving the combination of gene therapy and chemotherapy, that potentially present higher therapeutic efficacy and lesser side effects than conventional treatments. Therefore, our main goal is to develop nanosystems that have the ability to efficiently and specifically mediate these new therapeutic strategies.

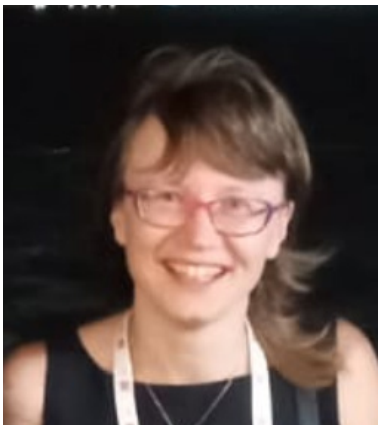
In this regard, we have developed different types of nanosystems, including polymer-based, lipid-based, inorganic-based, and hybrid-based formulations. Regarding the polymer-based systems, we developed a mini-library of well-defined glycopolymers to efficiently deliver nucleic acids into target cells. The generated glycoplexes had suitable physicochemical properties, and showed high specificity for the asialoglycoprotein receptor (ASGPR) and high transfection efficiency. Moreover, we demonstrated their ability to effectively mediate antitumor gene therapy strategies, that resulted in high anticancer activity in 2D and 3D-culture models of HCC, which was significantly enhanced by the combination with small amounts of chemotherapeutic agents. On the other hand, we have been developing new hybrid nanocarriers, both silica-polymer hybrid nanosystems and polymer-lipid hybrid ones, aiming at co-loading and co-deliver chemotherapeutic agents and genetic material in target cells. In the case of the silica-polymer hybrid nanocarriers, they exhibited high ASGPR specificity and high biological activity, showing a much higher transfection activity in liver cancer cells than bare silica nanoparticles. Furthermore, we demonstrated the ability of these nanosystems to efficiently mediate a combined antitumor strategy involving HSV-TK/GCV suicide gene therapy and chemotherapy (epirubicin), in liver cancer cells. Regarding the lipid-polymer hybrid nanosystems, composed of a PLGA core coated with a pH-sensitive lipid bilayer functionalized with the targeting ligand GalNAc, they showed not only a high loading capacity of two drugs (selumetinib and perifosine), but also mediated a substantial expression of the PTEN transgene in the target HCC cells. Our results showed that

this innovative formulation exhibited adequate physicochemical properties, revealing high specificity to HCC cells, and presented a high antitumor effect, demonstrated not only by the enhancement on the programmed cell death, but also by the reduction in cell proliferation capacity.

Overall, our data show that our nanosystems present a noticeable ability to efficiently and specifically deliver genetic material and drug into HCC cells, thus potentially constituting new platforms to successfully mediate novel antitumor strategies against this disease.

Biography

Henrique Faneca holds a PhD in Biochemistry from University of Coimbra. He is Principal Investigator at Center for Neuroscience and Cell Biology, University of Coimbra (CNC-UC), leading the research group Nanosystems and Targeted Antitumor Strategies. His research activity is focused on the development of different types of nanosystems that allow an efficient and specific delivery of therapeutic agents in target cells, and in the generation of new multitarget antitumor strategies, such as those involving the combination of gene therapy and chemotherapy.



Julia Sidorova
Instituto Carlos III de Salud, Madrid, Spain

Information leakage: Types, remedies, and open problems

Information Leakage threatens and questions the use of machine learning model in real-life clinical applications. In effect, information leakage is similar to vulgar overfitting, yet rather more subtle and even when detected much harder to remove. Some recent research indicates that if overfitting is removed, deep neural networks perform systematically worse than linear regression models. This statement is not very far from our results in survival analysis. There are different types of leakage and some are specific to deep neural networks. E.g. the effects of pretraining have not been thoroughly studied. In the talk, I will review the current understanding of what is information leakage and its subtypes. The types and examples were largely defined within different applications of machine learning. The RQ asked is: Is there anything a clinical bioinformatician should learn from the current concerns and work done in chemoinformatics, political science etc. Do the protocols of analysis keep us safe and where it is dangerous waters?

Biography

Dr. Julia Sidorova holds PhD from Universidad Pompeu Fabra. She is a Research Scientist in service at the Bioinformatics Platform, CIBER, the Spanish national consortium of hospitals, part of Instituto Carlos III de Salud. As far as research is concerned, her interests lie in classical data analysis vs deep neural networks, -- understanding their suitability or deficiencies. I serve on the Editorial Board of Frontiers of Neurology (Biomakers) and International Journal of Molecular Sciences MDPI (currently organizing a SI on AI in Molecular Mechanisms of Cancer).

Dr. Marika Crohns, MD, PhD

Impactful Innovations Management Consultants LLC, Dubai, UAE

Intelligent oncology: The transformative role of AI in the future of cancer research and care

Artificial Intelligence (AI) is poised to revolutionize oncology by transforming how we detect, understand, and treat cancer. As cancer remains a leading cause of death globally, integrating AI into research and clinical workflows offers unprecedented opportunities to address its complexity with greater precision, speed, and scale.

This presentation will explore the future prospects of AI in cancer research across five key domains: early detection, biomarker discovery, drug development, personalized treatment planning, and real-world evidence analysis. Recent advances in deep learning, natural language processing, and multi-omics integration are enabling researchers to uncover patterns and insights previously inaccessible through traditional methodologies. AI-powered imaging tools, for example, are now outperforming radiologists in detecting certain tumors, while predictive models using genomic and proteomic data are identifying new therapeutic targets and resistance mechanisms.

We will highlight successful case studies where AI has accelerated drug repurposing, enabled adaptive clinical trial designs, and enhanced patient stratification. Furthermore, the use of AI in analyzing electronic health records and wearable data is reshaping how we understand patient responses and long-term outcomes, making real-time precision oncology a tangible goal.

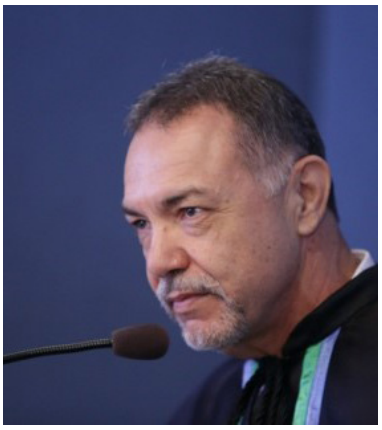
Despite these advancements, significant challenges remain. Issues of data quality, interpretability of models, algorithmic bias, and regulatory uncertainty must be addressed. The presentation will emphasize the importance of transparent, collaborative, and ethically guided AI development in oncology.

Finally, we will outline future trajectories and research priorities, including the integration of federated learning for data privacy, the use of generative AI for hypothesis generation, and the development of hybrid models combining mechanistic biology with machine learning.

By bridging computational power with clinical insight, AI is not merely a tool but a catalyst in reimagining cancer research and care. This keynote will provide researchers, clinicians, and policymakers with a forward-looking perspective on how to harness AI responsibly and effectively in the fight against cancer.

Biography

Dr. Marika Crohns, MD, PhD, is a distinguished medical doctor with board certifications in oncology and radiotherapy. She earned her PhD with a thesis on biomarkers in lung cancer. With over 30 years of experience, she has held significant roles in academia, clinical practice, and the pharmaceutical industry. Dr. Crohns served as Vice President and Global Medical Head for Oncology, Hematology, and Transplant at Sanofi. She currently leads Impactful Innovations Management Consultants LLC, focusing on advancing healthcare through strategic innovation. Dr. Crohns is also an advocate for women's empowerment and sustainability in healthcare.



Paulo Cesar De Morais
Catholic University of Brasilia, Brasilia, DF, Brazil

Cell viability assays under radiofrequency application modulated by nanomaterials

In this keynote talk, it will be explored the use of the Hill model to assess the Benchmark dose (BMD), the lethal dose 50 (LD50), the cooperativity (E) and the dissociation constant (K) while analyzing cell viability data using nanomaterials. The presentation is addressed to discuss the antitumor potential while combining radiofrequency (RF) therapy in and selected nanomaterials. In particular, it will be discussed the use of nanocomposites, for instance comprising graphene oxide (GO) surface functionalized with polyethyleneimine (PEI) and decorated with gold nanoparticles (GO-PEI-Au). Data collected from the cell viability assays using different tumor cell lines (e.g. LLC-WRC-256 and B16-F10) will be presented and discussed. The findings will demonstrate that while the tested nanocomposite (e.g. GO-PEI-Au) may be biocompatible against different cancer cell lines in the absence of radiofrequency (nRF), the application of radiofrequency (RF) enhances the cell toxicity by orders of magnitude, pointing to prospective studies with the tested cell lines using tumor animal models.

Biography

Professor Paulo César De Morais (H59), PhD, was full Professor of Physics at the University of Brasilia (UnB) – Brazil up to 2013. Appointed as UnB's (Brazil) Emeritus Professor (2014); Visiting Professor at HUST – China (2012-2015); Distinguished Professor at AHU – China (2016-2019); Full Professor at the Catholic University of Brasília (UCB) – Brazil (2018); CNPq-1A Research Fellow since 2010; 2007 Master Research Prize from UnB. He held two-years (1987-1988) post-doc position with Bell Communications Research, New Jersey – USA and received his Doctoral degree in Solid State Physics (1986) from the Federal University of Minas Gerais (UFMG) – Brazil. With more than 13,500 citations, He has published over 500 papers, presented more than 200 international invited talks (35 countries), and filled 16 patents.

Rajvir Dahiya, M.S., Ph.D., M.D., D.Sc

Professor Emeritus, University of California San Francisco School of Medicine (UCSF), San Francisco, CA 94143, USA

A novel mRNA genomic technology for precision medicine, cancer diagnosis, prognosis, treatment follow-up

Current screening methods—radiological imaging, DNA-based tests, and pathologicalassessments—often fail to detect malignancies at early stages. Despite technological advances, gene-based diagnostics specifically designed for early cancer detection remain limited. To bridge this gap, we evaluated the clinical utility and diagnostic accuracy of GeneVerify test, a plasma cell-free mRNA-based test for prostate cancer. This novel, noninvasive approach has the potential to deliver faster, more precise diagnoses while eliminating the risks associated with surgical biopsies. In our study, we analyzed 455 prostate cancer samples (160 blood and 294 tissue) and 150 normal samples, collected from nine hospitals. Blood and surgical specimens were obtained based on defined eligibility criteria. The study aimed to correlate mRNA genomic profiling with clinico-pathologic parameters. In blood samples, a 25-gene panel effectively distinguished prostate cancer patients from noncancer individuals, achieving an AUC of 0.906 (sensitivity 90%, specificity 91%). Similar diagnostic performance was observed in tissue samples (AUC 0.9514, sensitivity 95%, specificity 94%). Notably, patients with Gleason scores >7 showed significantly higher expression of the gene panel compared to those with GS <7, underscoring the test's prognostic potential. Comparable gene expression patterns between blood and tissue samples support the use of blood-based testing for screening, diagnosis, and risk assessment. These findings were further validated in a prospective study. GeneVerify test demonstrated high accuracy in detecting early-stage prostate cancer with strong concordance to biopsy results. To our knowledge, this is the first real-time clinical validation of a blood-based, cell-free mRNA genomic test for prostate cancer screening. Our results indicate that mRNA genomic profiling from blood can accurately diagnose prostate cancer and help stratify patients into prognostic groups. This non-invasive method offers a promising alternative to traditional biopsy—delivering faster, safer, and more accessible early detection, and paving the way for personalized treatment strategies.

Biography

Rajvir Dahiya holds Ph.D. in Experimental Medicine from Post Graduate Institute of Medical Education and Research Chandigarh, India, post-doctoral fellowship in medical oncology research from the University

of Chicago Pritzker School of Medicine, M.D. from the Kagoshima University Faculty of Medicine, Kagoshima, Japan and D.Sc. from the Osaka University Graduate School of Medicine, Osaka, Japan. He became director of Oncology Urology Oncology Research Center at the UCSF/VAMC in 1991. After 34 years of service, he retired as a Professor Emeritus and Director of Urology Research Center. Dahiya has published more than 550 original research manuscripts. Dahiya’s world ranking in medicine is 4759 and USA ranking is 2644 with more than 35,500 research citations and D-index of 107 in 2024. He has written books and holds multiple patents in oncology. Based on the NIH and VA data base NIH Reporter and Grantome, Dahiya's research programs were supported (99 times awarded) by the NIH and VA. Currently, he is an associate editor of “Clinical Cancer Research” journal.

Sergey Suchkov
National Center for Human Photosynthesis, Aguascalientes, México, and New York Academy of Sciences, USA

Personalized and Precision Medicine (PPM) through the view of biodesign-inspired translational research: An option for clinical oncologists, caregivers and consumers to realize the potential of genomics-informed care to secure the human 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). Meanwhile, the era of genomics-based medicine and thus genomics biomarkers promises to provide molecular tests that will permit PPM as applicable to personalized & precision oncology (PPO).

To achieve the implementation of PPM-guided oncology concept, it is necessary to create a fundamentally new strategy based upon the subclinical recognition of biopredictors (including genomics ones) of hidden abnormalities (pre-cancer conditions) long before the disease clinically manifests itself.

Every human has a unique genetic makeup that causes them to respond differently to cancer. In this context, the genomic profiling can be done using genomic, transcriptomic, epigenomic or metagenomic information, and will look at the genetic structure of the tumor. This helps us discover "actionable" mutations that can be targeted with therapy. These discoveries can lead to new treatment recommendations that may effectively treat your cancer on a personalized level. Through those analyses, we can not only diagnose and classify cancer patients and/or pre-cancer persons-at-risk based on their comparative risk, but also monitor their response to emerging canonical, preventive or prophylactic therapies. Continued progress using these methods will transform how we approach treatment modalities for cancer patients.

The advent of next generation sequencing (NGS) and GWAS technologies has advanced our understanding of the intrinsic biology of different tumor types. Prospective randomized clinical trials will determine whether matching actionable aberration with targeted therapy will contribute to improve survival in patients with malignancies.

PPM globally holds great promise, especially in cancer therapy and control, where PPO would allow practitioners to use this information to optimize the targeted treatment of a patient. PPO for groups of individuals would also allow for the use of population group specific

diagnostic or prognostic cancer biomarkers. The integration of PPM-guided genomics into clinical practice is transforming treatment paradigms. Identification of oncogenes and tumor suppressor genes can become the stimulus for rational design of novel, selective drugs that execute specific activity directed at underlying genetic aberrations. This information can be used to track the progress of cancer, and to establish the molecular basis for drug resistance and allow the targeting of the genes or pathways responsible for drug resistance.

The enormous development of biodesign-driven genomics research has raised great expectations concerning its impact on PPM aiming to customize medical practice with a focus on the individual, based on the use of genetic tests, identification of genomic biomarkers, and development of targeted drugs. In this sense, the impact of precision cancer pathology allows a modular approach, as its various aspects are under development in sometimes unrelated areas of PPM. Integration of the concepts will provide a true challenge for the future, requiring collaboration between clinicians, physiologists, pathologists, biodesigners and bioengineers and remaining a real challenge to bioindustry.

Meanwhile, each decision-maker values the impact of their decision to use PPM and PPO on their own budget and well-being, which may not necessarily be optimal for society as a whole. It would be extremely useful to integrate data harvesting from different databanks for applications such as prediction and personalization of further treatment to thus provide more tailored measures for cancer patients and/or pre-cancer persons-at-risk resulting in improved outcomes, reduced adverse events, and more cost effective use of health care resources. A lack of medical guidelines has been identified by the majority of responders as the predominant barrier for adoption, indicating a need for the development of best practices and guidelines to support the implementation of PPM in clinical practice!

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 was awarded with MD. In 1985, Suchkov maintained his PhD as a PhD student of Sechenov University and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia. From 1989 through 1995, 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. At present, Dr Sergey Suchkov, MD, PhD, is: Vice-Director for Research and Development of the National Center for Human Photosynthesis, Aguascalientes, México. Member of the New York Academy of Sciences, USA; Russian Academy of Natural Sciences, Russia; 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.

Subhas C Kundu

3Bs Research Group, I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics of the University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark - Rua Ave 1, Edificio 1 (Sede), 4805-694 Barco, Guimarães, Portugal.

3D in vitro cancer models using natural biomaterials for studying the cancer microenvironment and drug screening

Recreating the complexity of the tumor microenvironment is essential for advancing cancer research. Three-dimensional (3D) biomaterials offer a powerful platform for replicating the biological, chemical, and mechanical properties of native tissues, providing a more physiologically relevant alternative to traditional two-dimensional (2D) cell cultures. These models enable detailed investigation of tumor progression, invasion, and therapy resistance under controlled in vitro conditions. In our work, we focus on engineering natural biomaterials—such as hydrogels, scaffolds, nanofibers, and bioinks—to faithfully mimic the tumor microenvironment. These 3D systems support cancer cell adhesion, proliferation, and interaction with the surrounding matrix, allowing us to monitor disease dynamics and evaluate therapeutic responses more effectively. Among these materials, silk-based biomaterials stand out due to their mechanical robustness, tunable properties, and exceptional biocompatibility, making them especially promising for bridging the gap between in vitro models and clinical applications.

This presentation will outline current strategies for designing 3D biomaterials using natural polymers, including collagen, hyaluronic acid, alginate, and silk. Particular emphasis will be placed on silk-based scaffolds, which offer unique advantages for cancer modeling, tissue engineering and regenerative medicine applications. By supporting more predictive and human-relevant cancer models, these 3D biomaterial platforms hold significant promise for improving drug discovery pipelines, reducing reliance on animal models, and aligning with long-term sustainability goals in biomedical research.

Biography

Professor Subhas C. Kundu is a Research Coordinator at I3Bs – Research Institute on Biomaterials, Biodegradables, and Biomimetics, University of Minho, Portugal, and previously held the European Research Area (ERA Chair) of the European Commission. His areas of interest include natural biomaterials for tissue engineering, regenerative medicine, 3D cancer modelling and drug screening. He has published only 284 full research articles. His citation is 31,533, and H-index is 85 (Google Scholar 27-06-25). Kundu received a PhD in Genetics from Banaras Hindu University, India and postdoctoral training at the Institute of Molecular Biology, Moscow; Department of Biology, York University, Canada; Medical

University, Lubeck, Germany; Department of Biology & Biochemistry, Brunel University, UK. He was a Full Professor at the Department of Biotechnology, Indian Institute of Technology Kharagpur, India.

Thomas J. Webster

School of Health Sciences and Biomedical Engineering, Hebei University of Technology, Tiajin, China; Division of Pre-College and Undergraduate Studies, Brown University, Providence, RI; School of Engineering, Saveetha University, Chennai, India

Anti-cancer nanomedicine in humans: 30,000 successful cases and counting

This presentation will cover a close to 30-year journey researching and commercializing nanotechnology for improving disease prevention, diagnosis, and treatment (including cancer) which has led to numerous products including nano spinal implants now in over 30,000 patients to date showing no signs of failure according to the FDA MAUDE database. Traditional orthopedic implants face a failure rate of 5 – 10% and sometimes as high as 60% for bone cancer patients. The talk will cover not only human clinical evidence of the unprecedented efficacy of nanotechnology in medicine but also fundamental evidence of how nanotechnology can be used clinically to kill cancer cells, bacteria, inhibit inflammation, and promote tissue growth (if needed) without drugs. This talk will also describe the future of nanotechnology and how it will in the not too distant future combat traditional failures in our global healthcare system including reversing the current decrease in global average life expectancy, creating a reactive compared to predictive healthcare system, transforming a healthcare system that relies too much on drugs and pharmaceutical agents to treat ailments, facilitating a non-personalized healthcare system, combating increasing costs, treating a growing global population, and more through the future use of implantable nano sensors, 4D printed nano materials, smart nano materials, environmentally-friendly nanomaterials, and AI as well as other predictive models in medicine and more.

Biography

Thomas J. Webster's (H index: 129; 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). He has served as a professor at Purdue (2000-2005), Brown (2005-2012; 2021-present), and Northeastern (2012-2021; serving as Chemical Engineering Department Chair from 2012 - 2019) Universities and has formed over a dozen companies (with some acquired by Medtronic) who have numerous FDA approved medical products currently improving human health in over 30,000 patients with no failures. He is currently helping those companies and serves as a professor at Brown University, Saveetha University, Hebei University of Technology, UFPI, and others. Dr. 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. Prof. Webster is a former President of the U.S. Society for Biomaterials and has over 1,350 publications to his credit with over 70,000 citations. He was recently nominated for the Nobel Prize in Chemistry. Prof. Webster also recently formed a fund to support Nigerian student research opportunities in the U.S.

Yan-Shen Shan

Institute of Clinical Medicine, College of Medicine, Division of General Surgery, Department of Surgery, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan 70101, Taiwan

Hypoxia-fibrosis cycle in pancreatic cancer reveals potential pathways associated with tumor progression and predicts poor prognosis

Pancreatic cancer (PC) is difficult to treat and has the lowest five-year survival rate across the world. PC is characterized by desmoplasia composed of abundant cancer-associated fibroblasts (CAFs) and excessive extracellular matrix (ECM), which creates a pathological barrier that impedes drug delivery to tumors, leading to suboptimal treatment efficacy and resistance to current therapeutics. Like a vicious cycle, hypoxia-fibrosis cycle consists of dynamic cancer cell-CAF interactions. Tumor hypoxia develops due to the rapid and uncontrollable cell proliferation that outstrips the oxygen supply. This oxygen-starved environment forces cancer cells not only to adapt in ways that typically enhance tumor survival and growth but also to produce signaling molecules that promote the transformation of fibroblasts into CAFs. CAF-induced ECM increases tumor cell migratory and invasive capacities to support tumor dissemination. ECM protein themselves can also activate cellular signaling pathways resulting in CAF activation. Currently, most clinical therapeutics aim at tumor cells while overlooking the surrounding tumor microenvironment (TME). The TME comprises all of the physiological and biochemical elements, including, but not limited to, the ECM, CAFs, cancer-associated immune cells, and the hypoxic and acidic environment. Therefore, we aim to investigate intratumor heterogeneity of PC and figure out the tumor- and TME-driven signaling by using multi-omics analysis. The data obtained from bulk and single-cell RNA sequencing, spatial transcriptomics, and tissue microarrays show that hypoxia levels were positively correlated with tumor fibrosis. Hypoxia-fibrosis cycle modulates PC progression and pro-tumoral inflammatory microenvironment, which was associated with activation of hypoxia, KRAS, mTORC1, and inflammatory response pathways. This cycle acts as a poor prognostic indicator in patients with PC. Our work provides useful information for enhancing the effectiveness of current therapies and may have the potential to develop new precision medicines.

Biography

YS Shan devoted in management of biliopancreatic cancer and gastric cancer, the translational study of biliary tract cancer, pancreatic cancer, gastric cancer and GIST. He performed several IITs and attended

international trials in stomach, biliary, and pancreatic cancer. For his excellent achievement, he was elected to be the Dean of College of Medicine, NCKU. In 2024, He was also nominated as chief of Taiwan Surgical Society of Gastroenterology and Taiwan Gastric Cancer Society. Dr Shan has published more than 260 papers in reputed journals and got several awards for his excellent research.

BOOK OF ABSTRACTS

MATHEWS
CONNECTING RESEARCH

INTERNATIONAL CONFERENCE ON

CANCER SCIENCE AND RESEARCH

17-19
NOVEMBER

ORAL SESSIONS

A Chapel[1*]; A Semont[1]; C. Linard[1]; N. Mathieu[1]; C Demarquay[1]; C Squiban[1]; J Voswinkel[2]; H Rouard[3]; JJ Lataillade[5]; C. Martinaud[5]; M Benderitter[1]; NC Gorin[2]; JM Simon[4]; M Mothy[2]

[1]Radiological Protection and Human Health Division, Institute of Radiological Protection and Nuclear Safety, Fontenay-aux-Roses, France

[2]Department of Hematology, Saint Antoine Hospital APHP and UPMC University, UMRS 938, Paris, France

[3]Assistance Publique-Hôpitaux de Paris, EFS Ile de France, Banque des Tissus, Creteil, France

[4]Department of Radiation Oncology, Pitie-Salpetriere University Hospital, Paris, France

[5]Blood Transfusion Center of Army, Percy Military Hospital, Clamart, France

From experimental research to clinical trial in the treatment of complication of radiotherapy by stem cells

Statement of the problem: The late adverse effects of pelvic radiotherapy concern 5 to 10% of patients, which could be life threatening. However, a clear medical consensus concerning the clinical management of such healthy tissue sequelae does not exist. Our group has demonstrated in preclinical animal models that systemic mesenchymal stromal stem cells (MSCs) injection is a promising approach for the medical management of gastrointestinal disorder after irradiation.

Methodology & theoretical orientation: In a phase 1 clinical trial, we have shown that the clinical status of four first patients suffering from severe pelvic side effects (Epinal accident) was improved following MSC injection (figure). Two patients revealed a substantiated clinical response for pain and hemorrhage after MSC therapy. The frequency of painful diarrhea diminished from 6/d to 3/d after the first and 2/d after the 2nd MSC injection in one patient.

Findings: A beginning fistulization process could be stopped in one patient resulting in a stable remission for more than 3 years of follow-up. A modulation of the lymphocyte subsets towards a regulatory pattern and diminution of activated T cells accompanies the clinical response. MSC therapy was effective on pain, diarrhea, hemorrhage, inflammation, fibrosis and limited fistulization. No toxicity was observed.

We are now starting a clinical research protocol for patients with post-radiation abdominal and pelvic complications who have not seen their symptoms improve after conventional treatments (NCT02814864, Trial evaluating the efficacy of systemic MSC injections for the treatment of severe and chronic radiotherapy-induced abdomino-pelvic complications refractory to standard therapy (PRISME). It involves the participation of 6 radiotherapy services for the recruitment of 12 patients. They will all be treated and followed up in the hematology department of Saint Antoine Hospital. The cells will be prepared in two production centers (EFS Mondor and CTSA). Treatment is a suspension of allogeneic MSCs. Eligible patients must have a grade greater than 2 for rectoragy or hematuria at inclusion and absence of active cancer. Each patient receives 3 injections of MSCs at 7-day intervals. Patients will be

followed up over a 12-month period. The main objective is a decrease of one grade on the LENT SOMA scale for rectorrhagia or hematuria. The secondary objective is to reduce the frequency of diarrhea, analgesic consumption, pain and improved quality of life.

Conclusion: At the end of this period, if the efficacy of the treatment is proven, a phase III trial including a larger number of patients over a longer period will be used to confirm the therapeutic properties of this treatment.

Biography

For 30 years, Alain Chapel has been developing gene and cell therapy using non-human primates, immune-tolerant mice and rats to protect against the side effects of radiation. He collaborates with clinicians to develop strategies for treatment of patients after radiotherapy overexposures. He has participated in the first establishment of proof of concept of the therapeutic efficacy of Mesenchymal stem cells (MSCs) for the treatment of hematopoietic deficit, radiodermatitis and over dosages of radiotherapy. He has contributed to the first reported correction of deficient hematopoiesis in patients (graft failure and aplastic anemia) thanks to intravenous injection of MSCs restoring the bone marrow microenvironment, mandatory to sustain hematopoiesis after totl body irradiation. He is scientific investigator of Clinical phase II trial evaluating the efficacy of systemic MSC injections for the treatment of severe and chronic radiotherapy-induced abdomino-pelvic complications refractory to standard therapy (NCT02814864Hirsch Index 31).

Alexandru C. Grigorescu MD, PhD

Researcher degree, Clinical hospital for nephrology “Dr Carol Davila” Bucharest -Romania

Association between lung cancer and prostate cancer, 3 studied cases, short literature review

Background: The association of lung cancer with prostate cancer is little studied. In the Medscape site we do not have any reference to this association.

Material and method: We have collected data from 3 concrete cases regarding this association and we evaluated their characteristics. On the other hand, we did a literature review trying to do a review related to the particularities of the patients that were based on articles recommended by artificial intelligence (AI). We did not refer to possible genetic determinations, but from the current data, identical genetic modifications for these two types of cancer have not been investigated.

Results: We followed 10 articles selected by AI regarding the association of lung cancer (LC) with prostate cancer (PC). From the analysis of these studies and case presentations we drew several conclusions. Thus, from the articles studied, it emerges that this association is rare. Most authors studied pulmonary metastases of PC and not the association of LC with PC. The articles studied mainly present the metachronous association of PC cancer with (Small Cell Lung Cancer) SCLC, while our case series was represented by cases with Non Small Cell Lung Cancer (NSCLC). The articles also show that LC is usually the second cancer that appears in the evolution of patients, while our cases had a reverse sequence of appearance of the two cancers, the first being LC.

Conclusions: Physicians should know the most frequent combinations and time intervals of multiple metachronous and synchronous primary cancers in order to make an early detection and to start the most appropriate treatment.

Biography

Dr. Alexandru Calin Grigorescu, from the Clinical Hospital for Nephrology “Dr. Carol Davila” in Bucharest, Romania, became a specialist in medical oncology in 1991 and was awarded a grant in thoracic oncology in France in 1993. In 2003, he obtained his competence in palliative care and successfully passed the habilitation exam, qualifying him to supervise doctoral research. He received the prestigious ESMO grant in palliative care in 2018 and was awarded the Researcher Degree I (Research Professor) in 2014 at Bucharest UMF “Carol Davila,” confirmed by the Ministry of Health. Dr. Grigorescu serves as a reviewer for Elsevier and is the Editor-in-Chief of the national Romanian journal of oncology, Oncolog Hematolog. In recognition of his significant contributions to the field, he was honored as a member of the Romanian Academy of Medical Sciences in 2022.

Dr Anu Jose

Facio-Maxillary Surgeon, University Hospital of West Indies, Kingston, Jamaica

Well differentiated liposarcoma of face: An unusual case report

Background: Liposarcoma's are rarely reported in the head and neck region. The lacking literature evidence of this particular entity makes the clinical identification and treatment decision very challenging. Here we present a case of liposarcoma in a 95 year old female.

Method: A 95 year old patient presented to the Department of Facio-maxillary surgery with a swelling on her left cheek region. On examination, it is normal in color and texture, about 4 x 4.5 cm in maximum dimension. On palpation it is soft in consistency and non tender. Contrast enhanced computed tomography scan revealed a mass like proliferation of fat measuring 5.2x 5 x 7 cm in the left masticator space with extent into buccal cavity. It was provisionally diagnosed as Liposarcoma and excisional biopsy was carried out under general anesthesia.

Results: On histopathological evaluation, portions of a vaguely circumscribed tumour were identified which composed of mature adipocytes, of varying shapes and sizes, interspersed with spindle cells and lobulated by thin fibrovascular septa. The adipocytes and spindle cells display enlarged, hyperchromatic nuclei exhibiting irregular contours, inconspicuous nucleoli and brisk mitotic activity, with several abnormal forms. Numerous multinucleated tumour giant cells, inclusive of wreath-like forms, as well as rare, "floret-like" lipoblasts are identified. There is patchy myxoid change and focal areas of interstitial haemorrhage. Overall features were suggestive of Liposarcoma.

Conclusion: The rareity and varied presentation of liposarcoma makes it a extremely challenging case particularly in the head and neck region where management should be individually tailored based on through histological grounds.

Biography

Dr. Anu Jose practices as a Facio-Maxillary Surgeon at The University Hospital of the West Indies, Kingston, Jamaica, and as an Oral and Maxillofacial Oncologist at FOSA Surgical Associates. Dr. Jose's academic journey commenced with her comprehensive post-graduate training in OMFS at PMNM Dental College and Hospital This rigorous residency provided extensive exposure to the full spectrum of oral and maxillofacial pathology, establishing the foundation for her subsequent subspecialization. Her Fellowship in Oral Oncology from the distinguished SGM Cancer Center has equipped her with unparalleled expertise in managing complex head and neck malignancies. Her pursuit of advanced fellowship training in oral oncology reflects her dedication to mastering the most complex aspects of head and neck cancer management, positioning her among the elite practitioners in this highly specialized field.

Dr. Jose's intellectual contributions to the field are substantiated by her impressive portfolio of over 28 peer-reviewed publications in prestigious journals indexed within PubMed and Scopus databases. Her research addresses critical areas of clinical relevance, with particular emphasis on oncological outcomes, reconstructive innovations, and evidence-based surgical protocols.

Dr. Jose's commitment to advancing the field through innovation is exemplified by her recent patent achievement: "A Scale for Evaluation of Asymmetry of Lip Following Lip Reconstruction in Patients with Oral Squamous Cell Carcinoma" (Registration Number L-152732/2024). This groundbreaking development addresses a critical gap in post-operative assessment protocols, providing clinicians with a standardized methodology for evaluating functional and aesthetic outcomes following complex lip reconstruction procedures.

Anyou Wang
DIFIBER LLC, United States

Theory and perspective: Big data and artificial intelligence accelerate the pursuit of a universal cancer principle—opportunities and challenges

Although numerous cancer-associated mechanisms are reported on a daily basis, the establishment of a unifying theoretical framework capable of explaining and ultimately eradicating all cancers remains unresolved. Emerging advances in big data analytics and artificial intelligence have positioned noncoding RNAs as central, universal regulators of oncogenesis, thereby challenging the long-standing protein-centric paradigm. In contrast to proteins, noncoding RNAs exhibit dynamic and context dependent evolutionary trajectories rather than conserved patterns, and they remain insufficiently defined at both functional and structural levels. The lack of a comprehensive and systematic framework for their investigation significantly impedes progress toward a universal cancer theory. While big data and AI methodologies provide unprecedented opportunities to accelerate discovery in this domain, substantial challenges remain, including the generation of high-quality, large-scale biological datasets and the development of computational algorithms capable of capturing biological complexity. Addressing these barriers will necessitate the introduction of transformative theoretical constructs, novel algorithmic strategies, and advanced technological platforms at the interface of computational biology, big data, and AI.

Biography

Anyou Wang Graduated from the University of California, Riverside, Dr. Wang is passionate about computational biology, big data, and AI (combai.org). He develops computational algorithms to extract fundamental insights from large-scale biological data. He is a pioneer in utilizing the world's largest database to discover that noncoding RNAs (ncRNAs) have their own functional system distinctive from protein counterpart, which help to explain how ncRNAs act as key players in various physiological states. Dr. Wang further uncover ncRNAs as primary players in all cancers and as evolutionary drivers of lifespan across animal species, challenging the traditional protein-centric paradigm. Additionally, he has developed innovative algorithms to systematically uncover SARS-CoV-2 evolutionary trajectory and origins, which contributed to the COVID-19 pandemic.

Aurelian Udristioiu

Titu Maiorescu University of Bucharest Faculty of Medicine, General Medicine Care, City Târgu Jiu, Romania, B-dul Ecaterina Teodoroiu Street, No. 100, Târgu Jiu, 210106, Gorj, Romania

Application of CRISPR–Cas9 technology in the treatment of chronic lymphocytic leukemia with *TP53* mutations

Aim: This study proposes the implementation of clustered regularly interspaced short palindromic repeats (CRISPR)–CRISPR-associated protein 9 (Cas9) technology for gene therapy targeting genetic mutations in human lymphocytes affected by chronic lymphocytic leukemia, (CLL), offering new opportunities for effective treatment of this heterogeneous disease.

Method: CRISPR–Cas9 technology employs a specific enzyme guided by a designed guide RNA (gRNA) to a DNA target. The enzyme first introduces a cut at the target site and following this cleavage event, it can further disrupt the TP53 gene. The gRNA consists of CRISPR RNA (crRNA) and trans-activating CRISPR RNA, (tracrRNA), sequences, responsible for target recognition and Cas9 binding, respectively. Examination of the predicted secondary structure of the tracrRNA–crRNA duplex suggests that the features required for Cas9-catalyzed DNA cleavage at specific sites can be captured within a single chimeric RNA.

Results: Although the natural tracrRNA–crRNA mechanism operates efficiently, the use of a single RNA-guided Cas9 system is particularly attractive due to its potential for programmed DNA cleavage and genome editing. Importantly, Cas9 can bind and cleave a target sequence only if it is adjacent to a protospacer adjacent motif. Once the gRNA–Cas9 complex binds to the target DNA, Cas9 induces a double-strand break at the specified site, gene lesions, aiming to replace mutant TP53 genes in CLL cells through this technology.

Conclusions: CRISPR–Cas9 technology represents a powerful genetic engineering tool capable of inserting, deleting, or replacing DNA.

Biography

Dr, Aurelian Udristioiu, MD/PhD, is certified that European Specialist in Laboratory Medicine (EuSpLM) and Member of the European Federation of Clinical Chemistry and Laboratory Medicine, EFLM Academy. He received National and international Awards as Professional Memberships in American Society of Hematology, ASH, for the best Project of Research in Medical Space, "Identification of the p53 Isoform Protein in Chronic Lymphoproliferative Syndromes resistant to conventional treatment by the Enzyme-linked immunosorbent assay (ELISA) system", being finalist in Romanian Health Care Awards, on year 2023.

Bep Dhaliwal[1*]; Jas Dhaliwal[2]

[1]Patient Advocate, London, UK

[2]Patient/Carer, London, UK

The power of trust through the eyes of a patient

One of the first things to be impacted when a patient receives a cancer diagnosis is Trust. Trust in their body, in the world as they see it and very quickly they need to learn to build trust in their clinicians and the proposed pathways to tackle one of the toughest experiences of their lives.

Cancer is a deeply humbling, life-affirming event that not only impacts the patient, but has a ripple effect on loved one's too. As a three-time cancer patient, and cancer carer for my husband, mother and father, I'm passionate about restating trust so a patient can be a critical part of their own cancer pathway, have improved mental wellbeing and make decisions that feel right for them.

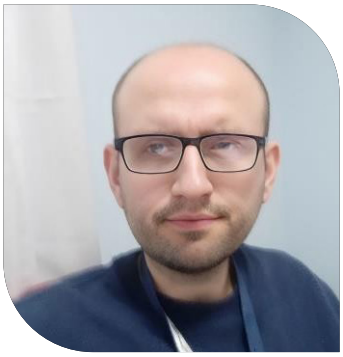
Having experienced Chemotherapy, immunotherapy, surgery and radiotherapy, I have empowered myself through nutrition, movement and an empowered mindset, re-building trust in myself to navigate three different diagnoses, before being diagnosed with Lynch Syndrome, and continuing to advocate for my health and wellbeing, and that of my family.

Understanding the importance of trust can support clinicians to work more effectively with their patients driving better outcomes and greater mental wellbeing whilst navigating so much of what can feel is out of the patient's control.

Biography

Bep Dhaliwal is the Founder of Thrive365, NLP Practitioner, Resilience Coach, Cancer Crusader.

Dhaliwal Bep is part of the curriculum for a couple of Trusts in the United Kingdom, sharing her experience as a patient and carer with oncology students. She is a passionate patient advocate, working with Oxford Cancer on a number of projects to ensure that patients feel seen and heard, and to know their voices matter in seeking support to enable them to feel empowered as they navigate a cancer diagnosis. This work has recently resulted in her co-authoring an article on Ethnicity and Breast Cancer that has been published in the British Medical Journal.



Xiaozhou Hu[1]; Wing C. Chan[2]; Can Küçük[3]*

[1]Department of Medical Biochemistry, Faculty of Medicine, Dokuz Eylül University, İzmir, Türkiye

[2]Department of Pathology, City of Hope, Duarte, CA, USA

[3]Department of Medical Biology, Faculty of Medicine, Dokuz Eylül University, İzmir, Türkiye

The transcriptional regulator PRDM1: Key insights into its role in NK cell homeostasis and malignancy

Natural killer cell lymphoma (NKCL) is an aggressive type of cancer with poor prognosis. As a rare cancer type with geographic predilection, it was of utmost significance to identify the cancer- associated genes contributing to development of NKCL. Our previous study revealed recurrent deletions of 6q21 locus that includes PRDM1 among other candidate tumor suppressor genes. As a transcriptional repressor, the role of PRDM1 was well characterized in normal as well as neoplastic B and T cells but there was little insight on its role in NK cell pathobiology. Importantly, we observed truncating mutations and/or promoter hypermethylation in malignant NK cell lines, which was associated with its underexpression. Further analyses with primary NKCL tumor samples revealed frequent inactivation of PRDM1 through a cooperation of mono-allelic deletion and promoter-associated hypermethylation. Functional experiments with malignant NK cell lines and primary NK cells revealed that PRDM1 acts as a tumor suppressor by inducing cell cycle arrest and apoptosis. The strong negative selection pressure observed in NK cell lines with ectopic PRDM1 expression was stronger when IL-2 concentration is limiting. Consistent with this observation, we showed that PRDM1 decreases sensitivity of human NK cells to IL2-induced cell proliferation by directly repressing CD25 (IL2RA). Our recent analyses of the transcriptional targets of PRDM1 in NK cell lines showed downregulation of several important genes associated with NK cell activation including but not limited to those involved in proliferation, survival, or antiviral defense. In conclusion, our observations altogether suggest a key regulatory role of PRDM1 in human NK cells that contribute to NKCL pathogenesis when it loses its function through genetic and/or epigenetic aberrations. Re-expression of PRDM1 may be an effective therapeutic strategy for treatment of these aggressive malignancies.

Biography

Assoc. Prof. Dr. Can Küçük completed his Ph.D. studies on oncology and cancer biology at the University of Nebraska Medical Center (UNMC). He performed post-doctoral studies at UNMC and City of Hope Medical Center. Dr. Küçük has publications in high impact journals such as Nature Communications, Blood, or PNAS. He earned prestigious international awards from the American Society of Hematology and the National Natural Science Foundation of China. Dr. Küçük's research focuses on genomic, transcriptomic, and epigenomic aberrations causing lymphoid cancers to identify biomarkers that can improve diagnosis or prognostication of lymphoid cancers and to discover more effective therapeutic targets.

Chanda Siddoo-Atwal

B.Sc. University College London, Ph.D. Simon Fraser University, Post-doctoral fellowship Medical College Wisconsin; President and Primary Biochemist of Moondust Cosmetics Ltd., Canada

Is cancer theory incomplete?

According to one physicist, major advances in science arise from two sources. The first is the introduction of new data and the second is the study of inconsistencies in established knowledge. Has cancer research missed the boat? Classically, experimental carcinogenesis is a complex, multi-stage process including initiation, promotion, and malignant progression in which the failure of DNA repair mechanisms and the subsequent clonal expansion of mutated cells play a pivotal role. However, more recently, it has become apparent that the pathogenesis of all cancers cannot be explained by this doctrine. Firstly, there is new data to suggest that cancer can be closely connected with aberrantly regulated apoptotic cell death and the resulting deregulation of cell proliferation. In fact, uncontrolled apoptosis has been directly linked to carcinogenesis. Scientific animal studies have shown that simply increasing the basal frequency of apoptosis in murine skin cells can be linked to the rapid development of squamous cell carcinomas in transgenic mice. Moreover, repeated apoptosis in human skin cells can result in tumour formation within a matter of months. Secondly, not all carcinogens are mutagens, so the assumption that mutations are always the core cause of carcinogenesis appears to be a fatal flaw in original cancer theory, especially since they are not known to occur within a short time. This suggests that there may be other alternate trigger mechanisms leading to carcinogenesis that must be considered. Various laboratory studies on animals and certain human data are suggestive that tumour formation requires at least two discrete events to take place in response to a carcinogen according to the apoptotic model of carcinogenesis. The first involves an elevation of apoptosis in a particular tissue due to a genetic predisposition, stress, or mutation. The second confers resistance to apoptosis in that same tissue resulting in the formation of an abnormal growth due to a dysregulation of cell number homeostasis. Furthermore, there is preliminary evidence to suggest that both these events may be reversible when treated with a selective apoptotic agent and, hence, they may be either genetic or epigenetic in nature.

Keywords: Apoptosis, Multi-stage carcinogenesis, Cancer theory, Mechanisms of carcinogenesis, Apoptotic model.

Biography

Chanda Siddoo-Atwal, completed her B.Sc. in Biochemistry from the University of London. Her Ph.D. was taken in Applied Sciences from Simon Fraser University in Burnaby (her research conducted at the BC Cancer Research Centre) and she did a Post-doctoral fellowship in the Biochemistry Department at the Medical College of Wisconsin. Cancer is her subject of specialization and has focussed mainly on mechanisms of carcinogenesis in various models, especially radiation-induced cancers. She is the President and Primary Biochemist of Moondust Cosmetics Ltd. (moondustcosmetics.com) and her research includes the formulation of a novel sunscreen to combat apoptotic sunburn that has been associated with skin cancer. She has authored books on cancer, contributed chapters to textbooks by various international publishers including Springer, and co-authored clinical oncology medical texts. A Facebook page presents her research in a popular way to the public.

Chujie Li[1*]; Xiaojun Li[2]; Rianne Biemans[1]; Ming Zhang[3]; Ludwig J. Dubois[1]

[1]Maastricht University, Maastricht, The Netherlands

[2]Zhongshan Hospital of Traditional Chinese Medicine, Zhongshan, China

[3]Hainan University, Haikou, China

monoHER as a selective radiosensitizer in breast cancer

Background: Radiotherapy is one of the standard treatments for breast cancer, but its efficacy is limited by tumour radio resistance and damage to surrounding normal tissues. In recent years, combining different therapeutic modalities has improved treatment efficacy while minimizing adverse effects. Flavonoids, abundant in many traditional Chineses medicines, have demonstrated both radioprotective and radio sensitizing properties. MonoHER, the flavonoid derivative of interest, has shown anticancer potential; however, its role in radio sensitization has not been investigated. Here, we determined in vitro the radio sensitizing properties of monoHER in breast cancer and normal mammary cells and investigated its potential mechanism.

Methods: Breast cancer cells with different p53 status (MCF7, wild-type; T47D, mutant) and normal mammary cells (MCF10A, p53 wild-type) were treated with monoHER and radiation. Cell viability, clonogenic survival, apoptosis, and DNA damage marker (γ-H2AX foci) were assessed. Western blotting examined ATM/p53 signaling. Interaction of monoHER with p53 was analysed by molecular docking and CETSA.

Results: MonoHER selectively enhanced radiation-induced cytotoxicity in MCF7 ($p<0.01$) cells and in T47D ($p<0.05$) but had protective effects in MCF10A ($p<0.01$) cells. Combined treatment increased apoptosis ($p<0.001$) and DNA damage ($p=0.045$) in MCF7 cells, accompanied by upregulation of p-ATM ($p=0.011$), p-p53 ($p=0.023$), and total p53 ($p=0.026$), while in T47D cells, no significant differences have been observed. Docking and CETSA confirmed direct binding of monoHER to wild-type p53, increasing its thermal stability. MonoHER alone showed minimal cytotoxicity, suggesting a priming rather than direct killing effect.

Conclusion: This study demonstrates that monoHER selectively enhances the radiosensitivity of breast cancer cells in a p53-dependent manner. MonoHER amplified radiation-induced DNA damage, activated the ATM/p53 pathway, and promoted apoptosis in MCF7 cells with wild-type p53, whereas it had little effect in T47D (mutant p53) or protective effect in normal MCF10A cells. These findings provide mechanistic insight into the radiosensitizing activity of monoHER and support its potential application in combination with radiotherapy for the treatment of p53-wild-type breast cancer.

Biography

Chujie Li, a PhD student at Maastricht University in the Netherlands, specializes in anticancer pharmacology. Her research focuses on the development and evaluation of novel therapeutic agents in cancer treatment, particularly in combination strategies. Her recent studies explored strategies to widen the radiotherapy therapeutic window, with the aim of sensitizing tumors to treatment while preventing radiation-induced damage to normal tissues.

Constantinos Mikelis

Department of Pharmacy, University of Patras, Greece

The regulatory role of endothelial RhoA on tumor microenvironment

The endothelial barrier plays an active role in tumor growth, dissemination and metastasis. For metastasis, the transendothelial migration of the tumor cells is a critical step, however, the endothelial regulatory elements of this step remain obscure. We present data demonstrating that endothelial RhoA activation is a determining factor during this process. Breast tumor cell-induced endothelial RhoA activation is the combined outcome of paracrine and cell-to-cell contact mechanisms, with elements of this pathway correlating with clinical data. Endothelial-specific RhoA blockade or in vivo deficiency inhibited the transendothelial migration and metastatic potential of human breast tumor and three murine syngeneic tumor cell lines, similar to the pharmacological blockade of the downstream RhoA pathway. These findings highlight endothelial RhoA as a potent, universal target in the tumor microenvironment for anti-metastatic treatment of solid tumors.

Biography

Dr. Mikelis is an Associate Professor of Physiology at the Department of Pharmacy at the University of Patras, in Greece and an Associate Professor at the School of Pharmacy of Texas Tech University Health Sciences Center, where he keeps an adjunct appointment. His postdoctoral training was on vascular and cancer biology, with a focus on GPCRs, at the National Institute of Dental and Craniofacial Research at NIH and his PhD from the University of Patras was focused on angiogenesis. His current research program both in the United States and Greece is focused on investigating the role of small GTPases on endothelial physiology and on cellular communication with endothelial cells in physiological and pathological conditions.

Debi Lynn
Business Resilience Coach and Advocate for Survivorship Care, Plano, Texas, USA

Beyond survival: The silent struggle of living after cancer

Let me tell you about a woman I loved. She was strong, brave, and relentless. She beat cancer not once, not twice, but three times. From the outside, it looked like victory. Yet her story did not end in celebration. Her third diagnosis took more than her health. It took her ability to speak, to eat, and to kiss her children without pain. Surgeons cut away half her tongue and throat in an effort to save her life, but in doing so, they stripped away the very things that made her feel alive. Eventually, she did not just lose her voice. She lost her fight. Not to cancer itself, but to everything that came after.

We talk so much about "beating" cancer. We ring bells. We throw parties. We post smiling survivor photos. But what about the days after the last treatment? What about the pain that does not show up in a scan? The scar tissue that makes swallowing a struggle. The anxiety that rises with every cough. The grief of looking in the mirror and not recognizing your own reflection. Survivorship is more than survival. It is waking up in a body that has been through war while carrying a heart that is still searching for peace. We save lives, but we do not always save quality of life. And that must change.

The hidden costs of survivorship ripple far beyond the hospital walls. Physically, survivors often live with nerve damage, chronic fatigue, and the daily frustration of eating or speaking becoming monumental tasks. Emotionally, the toll is just as heavy. She once told me, "I survived cancer, but I lost myself." That is not resilience talking. That is depression, anxiety, and PTSD. And socially, the silence can be deafening. When her voice changed, people stopped listening. When her appearance changed, friends stopped visiting. She became invisible in a world that celebrated her survival but abandoned her in her struggle. We must stop equating survival with healing.

There are also socioeconomic barriers that survivors face, often with devastating consequences. Many lose jobs because they can no longer perform as they once did. My loved one could not continue working because her speech was impaired. Therapy and specialized care were financially out of reach. Some days she had to choose between medication and groceries. This is not survivorship. It is survival in another form. Cancer care must extend beyond the hospital. Survivorship care is not just about checkups. It is about equity, accessibility, and systemic support. Without it, we set survivors up to fail.

If she were here today, she would not ask for pity. She would ask for progress. Survivors need long-term integrated care that addresses physical, emotional, and social needs together. They need mental health support that is normalized, affordable, and trauma informed. They need financial advocacy to help navigate insurance, employment, and medical costs. And they need community, safe spaces where their whole story is honored, not just the polished parts. Survivorship is not a chapter. It is the rest of their life. And we owe it to them to make that life worth living.

She is gone now, not because she did not fight hard enough, but because our system stopped fighting for her. Her story ended not when the cancer did, but in the gap, we left behind. Yet her voice, though stolen from her, lives on through me. And through you. If you love someone who has survived cancer, or if you are a survivor yourself, then know this. We must do better. We must build a world that values not just the act of living, but the quality of life itself. Let us honor survivors with more than celebrations. Let us honor them with care, dignity, and action. Because surviving cancer should never mean suffering in silence.

Biography

Debi Lynn is a Business Resilience Strategist and Certified Grief Educator with 20 years of experience. She helps powerhouse women rise from life's toughest moments—grief, burnout, and loss of identity—and transform them into power, purpose, and profit. If burnout, loss, or life has blindsided you, she believes you're not broken—you're buried. And now is the time to unearth your brilliance. She turns setbacks into strategy, pain into profit, and survival into soul-led success. Because you weren't meant to just push through—you were born to lead with heart, heal with purpose, and build a business that honors your fire. She didn't just survive pain—she built a business on it, and now she's here to help you rebuild your power, on your terms. I didn't just survive pain—I built a business on it."

Dr Dharmendra Kumar[1*]; Prof. (Dr) Pramod Kumar Sharma[2]

[1]Faculty of Pharmacy, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India

[2]Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India

Nanoparticle-based therapeutic platforms: Development and evaluation for cancer treatment

Polymeric nanoparticles are widely explored for drug delivery, though challenges remain in drug loading, entrapment, and release. In this study, starch nanoparticles were prepared from unripe banana fruit, which contains amylose (26–28%) and amylopectin (72–74%). Amylose promotes immediate release, while amylopectin supports sustained release, making banana starch a promising drug carrier. Quercetin-loaded starch nanoparticles were synthesized via nanoprecipitation. They showed 51.9% drug loading, particle sizes of 66.67–113.33 nm (SEM), and cumulative release of 44.84% in 1 h and 96.96% in 12 h. Antioxidant activity reached 98% inhibition in the DPPH assay. Cancer cell inhibition was dose-dependent, with nanoparticles showing stronger effects (3.11–83.48%) compared to isolated quercetin (2.11–72.45%). Histopathological studies confirmed wound healing within 21 days and suppression of inflammatory responses. These findings highlight banana starch nanoparticles as an effective carrier for quercetin with dual-release and therapeutic potential.

Biography

Dr. Dharmendra Kumar is an Associate Professor at Faculty of Pharmacy, Swami Vivekanand Subharti University, Meerut, India. Dr. Kumar has published over 15 Patents, 12 books and more than 25 research papers in prestigious journals indexed by SCI and Scopus. He is actively involved with various publishing houses worldwide as an editor, author, and reviewer.

Dmitri Lapotko
Scorpido Photonics Inc, CA, USA

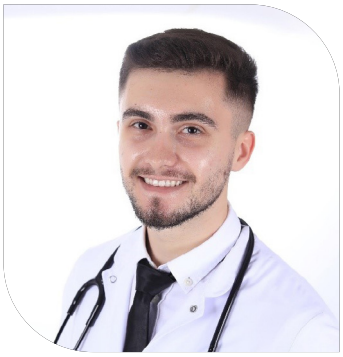
Instant high-sensitivity non-invasive in-vivo diagnosis during biopsy

Today, doctors have to wait until the tumor grows large enough to become detectable. At this stage, it is often too late to cure. Biopsy, the gold standard in cancer diagnostics, cannot detect tumors in real-time, is often invasive, and frequently misses microscopic-size tumors. The diagnosis takes weeks and is often inconclusive, especially when tumors are microscopic and cannot be detected with other tools. Our novel universal plasmonic nanobubble (PNB) diagnostic system will instantly and directly detect even microscopic-size tumors in vivo, otherwise undetectable, at the tip of a biopsy needle in patient, without extracting tissue, and during standard biopsy procedures.

The unmatched combination of high speed, safety, sensitivity and specificity of in vivo diagnostics with PNBs will turn biopsy into a real-time diagnostic tool and guide the biopsy sampling for more precise and conclusive histopathologic diagnosis. PNB signals support diagnosis automation thus reducing the dependence upon human expertise and allowing an early diagnosis even in low-resource clinics. The PNB system can be used with all biopsy types (needle, endoscopic, open surgery), manual or robotic, primary and intraoperative, to detect solid, lymph node and liquid tumors, and can be applied for diagnosis of various cancers.

Biography

Dmitri Lapotko obtained his MS in thermal physics, Ph.D. in laser defense applications from Belarus State University, and Doctor of Science in bioengineering from A.V. Lykov Heat and Mass Transfer Institute. His research in biophotonics and nanotechnology resulted in the invention of laser-generated plasmonic nanobubbles as a novel platform for diagnostic, therapeutic and surgical technologies for cancer and other diseases.



Drilon Bytyçi[1]*; Kelvin Wong[2]; Patricia Tai[3]; Lorent Sijarina[1]; Melisa Stublla[1]; Tringa Begu[1]; Evgeny Sadikov[4]

[1]University of Prishtina, Faculty of Medicine, Prishtina, Kosovo, 10000

[2]Astellas Pharma Canada, 675 Cochrane Drive, Suite 650 West Tower, Markham, ON L3R0B8, Canada

[3]Division of Oncology, University of Saskatchewan, 105 Administration Place, Saskatoon, SK,S7N 5A2, Canada

[4]Division of Radiation Oncology, University of British Columbia, Vancouver, BC, V6T 1Z2, Canada

Difficult-to-manage prostate cancer scenarios illustrating the pathologist's role: Two case reports

Background: Prostate cancer remains one of the most common malignancies among men worldwide, and its diagnosis and management rely fundamentally on accurate histopathologic evaluation. Gleason grading, now incorporated into the ISUP Grade Group system, is central to determining tumor aggressiveness, prognosis, and appropriate therapy. Despite its critical role, interobserver variability among pathologists continues to be a major challenge in prostate cancer care. Subtle differences in interpretation—especially in borderline cases such as distinguishing between Gleason pattern 3 and 4, or in the presence of rare histologic variants—can significantly influence clinical decision-making. Misclassification may lead to inappropriate treatment choices, ranging from unnecessary radical interventions to under-treatment of aggressive disease. Therefore, expert pathology review and multidisciplinary discussion remain essential components of optimal patient management.

Case Presentation: We present two clinically complex cases that illustrate how second-opinion pathology review can directly impact patient care.

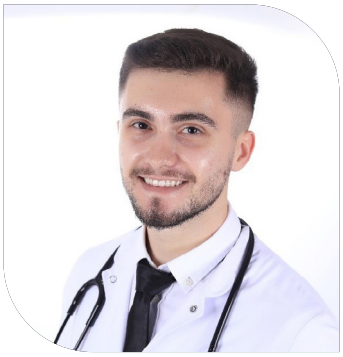
In the first case, a 65-year-old male was initially diagnosed with prostate adenocarcinoma, Gleason score 4+4=8, suggesting high-grade disease with a poorer prognosis. Based on this diagnosis, radical prostatectomy followed by adjuvant therapy was initially considered. However, upon expert review at a tertiary referral center, the tumor was reclassified as Gleason score 3+4=7 (Grade Group 2), indicating intermediate risk. This revision significantly altered the treatment approach, shifting from aggressive multimodal therapy toward a more conservative plan involving targeted radiation and active surveillance of biochemical response. The new plan prioritized preservation of sexual and urinary function without compromising oncologic safety.

In the second case, an 80-year-old patient presented with advanced disease and was initially reported to have a mixed adenocarcinoma with small cell carcinoma component—a diagnosis associated with poor prognosis and often requiring systemic chemotherapy. Expert pathology reassessment excluded the small cell morphology and confirmed pure acinar adenocarcinoma. This re-evaluation prevented the initiation of unnecessary cytotoxic chemotherapy, sparing the patient from potential toxicity and allowing for appropriate androgen-deprivation therapy. The outcome underscored how even subtle diagnostic nuances can dramatically shift management strategies.

Conclusion: These cases emphasize that the pathologist's role extends far beyond initial diagnosis—accurate histologic interpretation is a cornerstone of precision oncology. Second-opinion pathology review should be considered standard practice in atypical, ambiguous, or high-stakes prostate cancer cases, as it can prevent both overtreatment and undertreatment. Furthermore, the integration of advanced diagnostic modalities—such as multiparametric MRI, MRI-targeted biopsies, digital pathology, and artificial intelligence-assisted grading—holds promise for reducing human variability and improving consistency. Nonetheless, these technologies should complement, not replace, expert clinical and morphologic judgment. Ultimately, multidisciplinary collaboration, continuous education, and expert consultation remain essential to ensure diagnostic accuracy and to deliver personalized, evidence-based prostate.

Biography

Dr. Drilon Bytyçi is a medical doctor from Kosovo who graduated from the University of Prishtina. He also holds a Bachelor's degree in Radiologic Technology (2022). His main interests include radiology, otorhinolaryngology, oncology, and medical research. He is skilled in academic writing, medical imaging interpretation, and structured clinical reasoning. Dr. Bytyçi is strongly motivated to engage in new research initiatives, applying evidence-based medicine and integrating current literature into practice to contribute to data analysis and systematic reviews.



Drilon Bytyçi[1*], Lorent Sijarina[1]; Kelvin Wong[2]; Evgeny Sadikov[3]; Edward Yu[4]; Omar Alqaisi[5]; Avi Assouline[6]; Patricia Tai[7]

[1]University of Prishtina, Faculty of Medicine, Prishtina, Kosovo, 10000

[2]Astellas Pharma Canada, 675 Cochrane Drive, Suite 650 West Tower, Markham, ON L3R0B8, Canada

[3]Division of Radiation Oncology, University of British Columbia, Vancouver, BC, V6T 1Z2, Canada

[4]Division of Radiation Oncology, Western University, London, ON, N6A 3K7, Canada

[5]Faculty of nursing, Al-Zaytoonah university, Amman, Jordan

[6]Dept of Radiation Oncology, Collège de Médecine des Hôpitaux de Paris, Paris, France

[7]Division of Oncology, University of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

Updates on prostate cancer

Background: Prostate cancer remains one of the most prevalent malignancies in men, significantly contributing to global morbidity, mortality, and healthcare costs. Advances in diagnostics and treatment over the past decade have reshaped management strategies.

Methods: A literature review was conducted using PubMed and major conference proceedings from the past ten years.

Results: Prostate-specific membrane antigen (PSMA) positron-emission tomography (PET) has redefined prostate cancer imaging. Conventional imaging is no longer required before PSMA PET, which offers superior sensitivity and specificity. However, its cost-effectiveness remains debated across different healthcare systems. For localized disease, radiotherapy is an appropriate option in select patients with comorbidities, Gleason 7 (3+4), and <50% positive biopsy cores, particularly when dose escalation is feasible. The PACE trials established that stereotactic radiotherapy—often guided by PSMA PET—achieves outcomes comparable to surgery or conventional radiotherapy. Pelvic nodal radiotherapy provides a survival benefit, and adding a brachytherapy boost improves control, potentially reducing or even avoiding androgen deprivation therapy (ADT) in intermediate-risk cases. In high-risk disease, short-term (six-month) ADT may suffice, as extended exposure to gonadotropin-releasing hormone (GnRH) agonists increases cardiac risk. For unfavorable intermediate-risk patients, prostatectomy or radiotherapy with 4–6 months of ADT is recommended. Androgen receptor pathway inhibitors (ARPIs) are indicated for node-positive cases. Compared with GnRH agonists, GnRH antagonists (e.g., degarelix, relugolix) yield better oncologic outcomes and fewer adverse effects. Total androgen blockade with a GnRH agent plus an anti-androgen remains the standard for high-risk, nodal, or metastatic disease, while intermittent ADT is discouraged in advanced stages. In oligometastatic and castration-resistant prostate cancer (CRPC), multimodal strategies are used. These include radiopharmaceuticals (radium-223, lutetium-177 PSMA), stereotactic body radiotherapy, chemotherapy, and immunotherapy. Triplet therapy or early radiopharmaceutical use benefits younger, fit patients. Pembrolizumab and PARP inhibitors are now standard in metastatic CRPC with MSI-H/dMMR or BRCA/ATM mutations. Recurrence is typically identified through PSA testing, defined by the Phoenix criterion (2 ng/mL above

nadir). PSMA PET surpasses CT and bone scans for restaging accuracy, while circulating tumor DNA (ctDNA) remains investigational but promising. Prostatectomy after radiotherapy or reirradiation is technically demanding due to fibrosis and should be performed in expert centers. Genomic profiling is central to precision oncology, identifying actionable mutations that guide targeted therapy. Tissue biopsy remains standard, though liquid biopsy and ctDNA testing are emerging tools under clinical evaluation. Supportive measures, including sexual health counseling, are vital for maintaining adherence and quality of life.

Conclusions: Major progress has been achieved in imaging, systemic therapy, and radiotherapy for prostate cancer. Continuous research in molecular profiling and novel therapeutics is essential to further improve early detection, personalization, and survivorship outcomes.

Biography

Dr. Drilon Bytyçi is a medical doctor from Kosovo who graduated from the University of Prishtina. He also holds a Bachelor's degree in Radiologic Technology (2022). His main interests include radiology, otorhinolaryngology, oncology, and medical research. He is skilled in academic writing, medical imaging interpretation, and structured clinical reasoning. Dr. Bytyçi is strongly motivated to engage in new research initiatives, applying evidence-based medicine and integrating current literature into practice to contribute to data analysis and systematic reviews.

Eleni Petsalaki
University of Crete, Greece

A new tension-sensitive signaling pathway involving polymerization of actin prevents chromatin bridge breakage in cytokinesis in human cancer cells

Chromatin bridges are strands of incompletely segregated DNA connecting the anaphase poles or daughter nuclei. Chromatin bridges can arise from incompletely replicated DNA, defective resolution of DNA catenates or dicentric chromosomes which are formed by chromosome fusions. If unresolved, chromatin bridges can break in cytokinesis leading to micronuclei formation and accumulation of DNA damage which lead to changes in the DNA sequence and can result in carcinogenesis. To prevent this, human cells activate the abscission checkpoint which delays abscission to prevent chromatin bridge breakage or tetraploidization due to regression of the cleavage furrow. We recently showed that the DNA topoisomerase IIα enzyme binds to catenated DNA on chromatin bridges and Rad17 protein is recruited on DNA “knots”. In turn, Rad17 recruits the Mre11-Rad50-Nbs1 protein complex and activates the ATM-Chk2-INCENP signaling pathway which leads to proper localization of Aurora B at the midbody in order to delay abscission. Furthermore, human cells form accumulations of polymerized actin (actin patches) at the base of the intercellular canal to stabilize chromatin bridges; however, the molecular mechanisms involved are incompletely understood. In the present study, we identify small GTPases, which control the growth or contraction of filamentous actin fibers, that localize to actin patches and are required for stable chromatin bridges in cytokinesis. Inhibition of these actin regulators reduces actin patch formation and promotes chromatin bridge breakage by confocal microscopy analysis of fixed cells or live-cell fluorescence microscopy. Furthermore, chromatin breakage in cells deficient for the above proteins is not caused by premature abscission, but correlates with reduced actin patches compared with wild-type cells. We also propose that DNA bridges generate tension inside the nucleus which is then transmitted through specific mechanosensitive complexes to the cell cytoskeleton to promote generation of actin patches in the cytoplasm. This study identifies a novel signaling pathway that prevents chromatin bridge breakage by promoting actin patch formation in cytokinesis in human cells. Because chromatin breakage can lead to genomic instability that is associated with cancer formation or progression, understanding how cells stabilize chromatin bridges may help us understand mechanisms of tumorigenesis.

Keypoints

- Genomic instability can be caused by chromatin bridge breakage in cytokinesis.
- Actin fibers, called actin patches, are formed at the base of the intercellular canal to stabilize chromatin bridges and prevent them from breaking.
- Novel signaling pathways preventing chromatin bridge breakage by promoting actin patch formation in cytokinesis.

Biography

Dr Eleni Petsalaki is a Post Docroral Research Scientist in Dr George Zachos' lab at University of Crete, Greece. She completed her PhD in 2014 in Molecular Biology and Biomedicine at the Department of Biology. Her main interest is mitotic cell division and mechanisms that monitor mitotic progression called the mitotic spindle checkpoint and the abscission checkpoint. She is an author of 16 publications including Journal of Cell Biology, Nature Communications, Journal of Cell Science and others. Her publications have received >600 citations so far. She is currently a member of FEBS, AACR, EACR and Royal Society of Biology.

Fatlinda Berisha[1*]; Aoife Jones Thachuthara[2]; Lorent Sirjarina[3]; Kelvin Wong[4]; Osamma Souied[5]; Patricia Tai[6]; Shend Kryeziu[1]

[1]Medical faculty, University of Pristina "Hasan Prishtina", Prishtina, Kosovo

[2]Dept of Medical Oncology, Cork University Hospital, Cork T12 DC4A Ireland

[3]University of Prishtina, Faculty of Medicine, Kosovo

[4]Astellas Pharma Canada. 675 Cochrane Drive, Suite 650 West Tower, Markham, ON L3R 0B8, Canada

[5]Dept of Medical Oncology, University of of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

[6]Division of Oncology, University of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

Overview of PSMA PET and salvage treatment of previously irradiated recurrent prostate cancers

Background: Prostate cancer is prevalent in the United States and often spotlighted due to celebrity diagnoses. Recurrent prostate cancer remains a major clinical challenge, typically first indicated by a rising prostate-specific antigen (PSA) level. PSA serves as a reliable biomarker to prompt further evaluation. Recent advances in nuclear imaging—particularly prostate-specific membrane antigen positron emission tomography (PSMA PET)—have reshaped the detection and management of recurrence. PSMA PET offers higher sensitivity and specificity than conventional imaging, allowing earlier detection and guiding more precise restaging and therapeutic decisions.

The objective of this narrative review summarizes recent progress in PSMA PET imaging and emerging salvage treatments for recurrent prostate cancer following definitive radiation therapy.

Methods: A targeted literature search was conducted via PubMed to identify studies and guidelines on innovative recurrence detection and optimal salvage interventions. Keywords included "prostate cancer recurrence," "PSMA PET," "androgen deprivation therapy," "prostatectomy after radiation," and "salvage treatment."

Results: Biochemical recurrence is defined by a PSA rise of ≥2 ng/mL above the post-treatment nadir, per Phoenix criteria. This triggers further assessment. PSMA PET detects local and metastatic recurrence at lower PSA levels than traditional modalities like CT and bone scans. Novel biomarkers such as circulating tumor DNA (ctDNA) are being explored to supplement PSA and imaging techniques.

First-line salvage therapy typically involves total androgen blockade: a gonadotropin-releasing hormone (GnRH) agonist or antagonist combined with an anti-androgen agent. GnRH antagonists may provide faster PSA responses and fewer side effects. Monotherapy is less favored due to limited efficacy and side effects.

For patients with poor prognostic factors (e.g., short PSA doubling time, high Gleason score, distant metastases), continuous androgen deprivation therapy (ADT) is recommended over intermittent regimens due to better survival outcomes.

Local salvage options—including prostatectomy, brachytherapy, or stereotactic radiotherapy—are technically complex post-radiation due to fibrosis and should be performed in specialized tertiary centers.

For advanced or metastatic disease, triplet therapy—combining hormone therapy, chemotherapy, and androgen receptor inhibitors—is increasingly used. Agents like Radium-223 and ^177Lutetium-PSMA-617 have demonstrated survival benefits in ALSYMPCA and VISION trials, respectively.

Lastly, supportive care is vital, addressing psychological distress, preserving quality of life and improving treatment adherence.

Conclusion: Recurrent prostate cancer is usually signaled by rising PSA levels and is more accurately characterized with PSMA PET imaging. Salvage management depends on disease burden and patient-specific factors, ranging from systemic therapy to complex local procedures. Early detection and multidisciplinary care are essential to optimize outcomes.

Keywords: Prostate Cancer, Biochemical Recurrence, PSMA PET, Salvage Therapy, Androgen Deprivation Therapy, Metastasis-Directed Therapy, Triplet Therapy.

Biography

Fatlinda Berisha Doctor of Medicine, who complete her studies in General Medicine at the University of Prishtina “Hasan Prishtina.” She has a compassion for helping patients and performing research in cancer. I collaborated with seven other classmates in the cancer research team of Professor Patricia Tai in Canada who serves as a mentor for them all.

Gaurav Vishal
Prathima Cancer Institute, India

Analysis of 64 cases of oral squamous cell carcinoma of the buccal mucosa

Introduction: Squamous cell carcinoma of the buccal mucosa is the most common oral cavity cancer in Southeast Asia. In India, 60 to 80% of oral squamous cell carcinoma cases present with advanced stage as compared to 40% in developed countries. Carcinoma of the buccal mucosa is treated mainly by surgery followed by adjuvant therapy, depending upon the stage and histopathological characteristics. The purpose of this study was to evaluate the neck node status, patterns of neck metastasis, distribution of patients according to T stage and management of squamous cell carcinoma of the buccal mucosa.

Methodology: A total of 64 histopathologically proven cases of oral squamous cell carcinoma of the buccal mucosa who had no previous malignancies were included in our study. Recurrent cases and prior treatment of oral cancer by chemotherapy and radiotherapy were excluded. All the patients involved in the study underwent tumor resection with neck dissection.

Results: A total of 64 patients were staged as per TNM criteria (AJCC 8th edition). More than 90% metastases occurred at levels I to III lymph nodes. The percentage of T1, T2, T3 and T4 lesions were 06.25, 28.12, 14.06 and 51.56% respectively. 45.31% patients were pathologically node- negative (pN0). In pathologically node-positive (pN+) patients N3 Category was the highest followed by N1 Category and N2 Category. The lymph node positivity was highest in T4 followed by T3 and T2. Final histopathological stage grouping revealed early stage disease in 14 patients and advanced stage disease in 50 patients. 12, 38 and 14 patients were treated by surgery alone, surgery with postoperative radiotherapy and surgery with postoperative CTRT respectively.

Conclusion: This study concluded that more than 90% metastases occurred at levels I to III lymph nodes. Nearly 45.00% of the patients were pathologically node-negative (pN0). 21.87% of the patients were pathologically node-positive with extranodal extension (pN+/ENE+). Majority of the patients had diagnosed in advanced stage of carcinoma. Histopathology reports demonstrated the most of the patients had well-differentiated squamous cell carcinoma. Stage I and II (Early stage) patients were treated mainly by surgery alone and stage III and IV patients were treated with combination therapy.

Biography

Dr. Gaurav Vishal is an Oral and Maxillofacial Surgeon (M.D.S), Fellowship in Oral Oncology and Reconstructive Surgery. He completed M.D.S- Oral and Maxillofacial Surgery from Institute of Dental Sciences, Bareilly, India in 2020, Observership in Head and Neck Surgical Oncology from Mahavir Cancer Sansthan, Patna and Fellowship in Oral Oncology and Reconstructive Surgery from Rohilkhand Medical College and hospital, Bareilly, India in 2021. He has received the Emerging Oncosurgeon Award by HPP Cancer Hospital & Research Institute, with collaboration of Indian Medical Association, Lucknow (Oncological CME was organized in Lucknow), India. He has participated in various International conferences as a Speaker and Moderator. He is an expert in the field of Head & Neck Oncology, Reconstructive Surgery, Facial Trauma, Maxillofacial Pathology, Tobacco Cessation and Basal Implantology. He has several International and National Publications to his credit.

Huynh Yen Phi[1,2*]; Tran Van Binh[1]; Tran Van Khoi[3]; Nguyen Huu Thinh[4]; Nguyen Hoang Bac[4]; El-Wui Loh[5,6,7]; Ka-Wai Tam[6,8,9]

[1]International PhD Program in Medicine, Taipei Medical University, Taipei City, Taiwan

[2]Breast Department, University Medical Center, Ho Chi Minh City, Vietnam

[3]Department of Surgery, Hue University of Medicine and Pharmacy, Hue University, Hue City,Vietnam

[4]Department of General Surgery, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam

[5]Division of General Surgery, Department of Surgery, Taipei Municipal Wan Fang Hospital, Taipei City, Taiwan

[6]Cochrane Taiwan, Taipei Medical University, Taipei City, Taiwan

[7]Graduate Institute of Clinical Medicine, College of Medicine, Taipei Medical University, Taipei City, Taiwan

[8]Division of General Surgery, Department of Surgery, Shuang Ho Hospital, Taipei Medical University, New Taipei City, Taiwan

[9]Division of General Surgery, Department of Surgery, School of Medicine, College of Medicine, Taipei Medical University, Taiwan

Global trends and predictive factors of prophylactic mastectomy in women: A systematic review and meta-analysis

Importance: The prevalence of prophylactic mastectomy is increasing globally despite the aggressiveness of the surgery and its uncertain effectiveness in preventing cancer.

Objective: To estimate the global prevalence of prophylactic mastectomy and assess the predictive factors influencing women's decisions to undergo this surgery.

Data Sources: This study searched PubMed, Embase, Web of Science, Scopus, and Cochrane Library databases.

Study Selection: Studies were selected for inclusion if they (1) reported real-world data on the number of women who underwent prophylactic mastectomy in relation to the total population and (2) used national or hospital databases.

Data Extraction and Synthesis: The restricted maximum likelihood estimator random-effects model with Freeman-Tukey double arcsine transformation was used for data analysis. A sensitivity analysis, meta regression, and subgroup analysis were conducted.

Main Outcomes and Measures: The prevalence of prophylactic mastectomy was evaluated using data from national databases and hospitals.

Results: Data on 10.7 million women across 23 locations were included, and the overall prevalence of prophylactic mastectomy was 5.04%. The prevalence of prophylactic mastectomy was highest in the Americas (5.19%) and lowest in Asia (1.58%), highlighting differences related to health-care systems, varying cultural perceptions, and the substantial influence of the "Angelina Jolie effect" in Western countries. By analyzing 28 predictive factors, we found that genetic testing, health-care accessibility, insurance support, and psychosocial factors were associated with an increased prevalence of prophylactic mastectomy.

Conclusion and Relevance: Our findings indicate that the global prevalence of prophylactic mastectomy is increasing. The notably higher rates in the Americas compared with in other regions reflect disparities in health-care systems and inconsistent clinical practices globally. Global efforts, such as developing standardized guidelines, establishing genetic testing criteria, and providing consistent counseling, are key to providing women with reliable information and support for informed decision-making.

Biography

Huynh Yen Phi is a Ph.D. student at the International PhD Program in Medicine, Taipei Medical University, and a breast surgeon at the Breast Department, University Medical Center, Ho Chi Minh City, Vietnam. Her research focuses on breast cancer, breast cancer surgery, oncoplastic breast surgery, and minimally invasive breast surgery. She is currently conducting a series of studies on the global prevalence, survival, and psychosocial outcomes of prophylactic mastectomy, aiming to provide evidence-based insights to support patient-centered clinical decision-making.

Iveta Herichová[1*]; Denisa Vanátová[1]; Richard Reis[2]

[1]Department of Animal Physiology and Ethology, Faculty of Natural Sciences, Comenius University in Bratislava, Bratislava, Slovak Republic

[2]Richard Reis, First Surgery Department, University Hospital, Comenius University in Bratislava, Bratislava, Slovak Republic

Daily profile in miRNA expression in the colon and their role in colorectal cancer

Colorectal cancer (CRC) belongs among the most frequently diagnosed malignancies and its progression is strongly influenced by miRNAs as well as the circadian system. With the use of high-throughput sequencing of miRNAs expressed in the rat colon during 24h light (L) dark (D) cycle 371 mature miRNAs and 442 pre-mature miRNAs (pre-miRNAs) was detected. Nearly 10 % of mature miRNAs showed a daily rhythm in expression of guide (66%) or passenger (33%) strand. Rhythm in expression was detected in 5% of pre-miRNAs. Mature and pre-miRNAs derived from one gene showed a high level of correlation. A peak of miRNA's levels was in the most cases observed during the first half of the D phase of LD cycle (D1). There was a pronounced trend to higher expression of DGCR8, during the D compared to L phase. Gene ontology enrichment analysis revealed that genes interfering with miRNAs with peak expression during D phase influence apoptosis, angiogenesis, immune system and EGF and TGF-beta signaling to higher extend compared to those with the maximum in L phase. Pro-apoptic role of miR-150-5p induction was demonstrated with the use of CRC cell line DLD1. miR-150-5p was shown to inhibit expression of oncogene cry1. Target genes of D1 and D2 miRNAs differently influenced Toll and Notch signaling pathways and hypoxia response via HIF activation. Results indicate that timing of miRNA expression can influence, via their target genes, specific molecular pathways involved in regulation of CRC progression. Research was supported by projects APVV-20-0241 and VEGA 1/0455/23.

Biography

Prof. Iveta Herichová DrSc. is focused on the role of the circadian system and miRNA interferences in progression of colorectal cancer. She also studies causes of sex-dependent differences in colorectal cancer incidence. She holds a PhD. in Animal Physiology from Slovak Academy of Sciences, P. J. Šafárik University, Slovak Republic. Previously she has worked in the Katholieke Universiteit Leuven and Belgium and Texas A&M University, USA. Recently she is engaged as professor at the Comenius University in Bratislava, Slovak Republic.

Janusz RAK*; Cristiana Spinelli; Lata Adnani
McGill University, Canada

Extracellular vesicle pathways as regulators of tumor-vascular interactions in glioblastoma

Glioblastoma (GBM), the most prevalent astrocytic brain tumour, remains incurable in spite of decades of research. Florid neovascularization, a morphological hallmark of GBM, is still poorly understood, as is the role of blood vessels in mediating the access of immune cells into the tumour parenchyma. Studies on the interface between tumour-driving glioma stem cells (GSCs) and the vascular compartment in GBM led us to uncover new intercellular communication mechanisms mediated by extracellular vesicles (EVs) with major implications for blood vessel modulating therapies.

Thus, we observed that molecular profiles of GSC define their repertoire of EVs, which also changes as a function of induced GSC differentiation into astrocytic lineage. Notably, proneural subtype of GSCs forms brain tumours associated with mostly small angiogenic blood vessels, in conjunction with ample secretion of vascular endothelial growth factor (VEGF). In contrast, mesenchymal GSCs release blood vessel stimulating activities in both soluble and particulate fractions of the cellular secretome. The latter include the release EVs that carry oncogenic epidermal growth factor receptor (EGFRvIII), which is readily transferred to endothelial cells, whereupon it triggers a unique non-angiogenic blood vessel formation process, which we termed vasectasia. Vasectasia entails a VEGF-independent, circumferential vessel enlargement, resistant to angiogenesis inhibitors and linked to changes in endothelial cell subpopulation landscapes.

Conversely, we observed that endothelial cell-derived EVs impact the phenotype of tumour initiating GSCs. Interestingly, such EVs carry proteases that evoke angiocrine responses leading proneural GSC to adopt a more invasive, mesenchymal phenotype, coupled with reduced responsiveness to temozolomide (TMZ) chemotherapy. Finally, we report that the efficacy of TMZ treatment in mouse models of mesenchymal GBM can be increased by induced alterations in vascular structures coupled with adoptive immunotherapy.

Thus, vesiculation mechanisms associated with glioblastoma represent an important and targetable mechanisms shaping tumour microenvironment and can be exploited for liquid biopsy approaches in adult and pediatric brain tumours.

Biography

Janusz Rak, MD, PhD is a Professor of Pediatrics and Jack Cole Chair in Pediatric Hematology/Oncology at McGill University. His laboratory investigates how oncogenic events drive cancer progression through orchestrating pathological intercellular communication networks, trigger vascular alterations and systemic vascular paraneoplastic syndromes. These studies currently focus on mechanisms mediated by extracellular vesicles (EVs; including exosomes) and their molecular content. He currently directs the CFI funded Centre for Applied Nanomedicine (CAN) and the NET program sponsored by Fondation Charles Bruneau and CIBC to investigate EV-based liquid biopsy approaches in pediatric cancer. He is a Fellow of the Royal Society of Canada.

K R Muralidhar

MSc Tech, PhD, DRP, UICC (USA), MHA, IICA(ID) Director of Physics Karkinos Healthcare private limited, India

Expanding the reach: Integrating -generated auto contours via deep learning segmentation into diverse treatment planning systems

Aim: Contouring in treatment planning systems for radiation oncology plays a crucial role in ensuring accurate and effective treatment. The integration of AI-generated auto-contouring with other planning systems, particularly in remote areas, is essential for achieving optimal contouring. This study explores the incorporation of deep learning-based auto-contouring into various treatment planning systems to enhance precision and accessibility.

Methods: The study utilized the Ray Station planning system 12A (Ray Search Laboratories, Sweden), renowned for its GPU-powered algorithm capable of generating AI-generated contours through deep learning segmentation. The research encompassed a group of hospitals distributed across various locations in India.

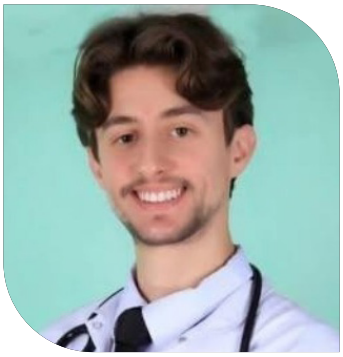
Results: The OAR contours generated through deep learning segmentation in Ray Station were seamlessly transferred to both Monaco and Eclipse TPS via cloud connectivity. The average time required for any auto contour was less than two minutes and the maximum time it took to implement auto contour and exporting and start planning through other planning systems at any remote site is less than one hour.

Conclusion: By Integrating, we could able to come down the contour time three days to one hour even for remotest areas where there is no contour expert available. This method not only translates to significant time savings to start planning and treatment but also ensure uniformity of contours across all our units. This consistency fosters enhanced quality in treatment planning, facilitates research endeavour, and ultimately contributes to improved patient care especially in developing countries where the budget for dedicated treatment planning systems are not adequate.

Keywords: AI, Auto Contours, Ray Station, Treatment Planning Systems (TPS), Deep Learning Segmentation, Cloud Connectivity.

Biography

Dr. K. R. Muralidhar, MSc. Tech, Dip. R.P., M.Phil., PhD, FUICC (USA), MHA, IICA (ID), is the Director of Physics at Karakinos Healthcare Private Limited. He has over 29 years of experience in the field, with 94 presentations and publications, 21 published papers, 61 presented papers, 11 international presentations and 141 citations with an h-index of 8. He holds a PhD, M.Phil., and Diploma in R.P from BARC,, M.Sc., Tech from JNTU. He earned certification in Genomic technologies from university of London, Inside cancer certificate from University of BATH UK , MHA in International Business and Hospital Operations, He is also an IICA-certified Independent Director, with certifications in Environment, Social and Governance (ESG) from the World Development Corporation, Six Sigma Green Belt (Healthcare), Infection Control and Prevention Management, Quality Control Management, and Business Responsibility and Sustainability Reporting (BRSP). Dr. Muralidhar's have been recognized through several prestigious honors, including the "Jewel of India Award," "Bharat Gaurav Puraskar," and "Golden Aim" Award. He is also a recipient of the UICC Fellowship at M.D. Anderson Cancer Institute, Houston, Texas, USA, and the IAEA Fellowship in Vienna, Austria—awarded to him twice.



Liburn Grabovci[1*]; Patricia Tai[2]; Omar Alqaisi[3]; Aoife Jones[4]; Lorent Sijarina[5]; Kelvin Wong[6]; Edward Yu[7]; Kurian Joseph[8]

[1]University of Pristina "Hasan Prishtina", Faculty of Medicine, Prishtina, Kosovo

[2]Division of Oncology, University of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

[3]Al-Zaytoonah University, Faculty of Nursing, Amman, Jordan

[4]Dept of Medical Oncology, Cork University Hospital, Cork T12 DC4A Ireland

[5]University of Pristina "Hasan Prishtina", Faculty of Medicine, Prishtina, Kosovo

[6]Astellas Pharma Canada. 675 Cochrane Drive, Suite 650 West Tower, Markham, ON L3R 0B8, Canada

[7]Division of Radiation, Western University, London, ON, N6A 3K7, Canada

[8]Dept of Radiation Oncology/Dept of medical Physics, Cross Cancer Center, University of Alberta, 11011 - 88 Avenue, Edmonton, AB, T6G 2G5, Canada

Improving quality of life among cancer patients in the modern era

Introduction: Modern cancer treatments often lead to a wide range of acute side effects, such as nausea, fatigue, pain, and infections that significantly impair daily functioning. Long-term complications, including neuropathy, hormonal imbalances, infertility, and emotional disturbances (e.g., anxiety, depression, cognitive impairment), may persist for years post-treatment, affecting survivors' overall quality of life and reintegration into normal life.

Methods: A literature review of the past five years was conducted to identify strategies aimed at improving quality of life and managing post-treatment complications among cancer survivors.

Results: Common treatment-related complications include radiation-induced skin toxicity, persistent fatigue, alopecia, and weight changes. Advanced radiotherapy techniques like IMRT and SRS help reduce toxicity to healthy tissues. Head and neck cancer treatments can cause xerostomia, visible disfigurement, and facial lymphedema, now more effectively managed with minimally invasive surgery.

Cardiac complications, especially when using agents like doxorubicin, can be mitigated by dose limitation and coordinated care with cardiologists for close monitoring. A multimodal AI-based system, CardioAI, was developed to support symptom monitoring and risk prediction.

Gastrointestinal side effects include altered bowel habits, limiting fat to roughly 20% of daily energy significantly reduces abdominal pain and nocturnal diarrhea in cancer patients with bile acid malabsorption, supporting its routine use to prevent radiation-related gastrointestinal complications, while urological concerns such as urinary incontinence commonly occur after prostatectomy. Routine and resistance-band assisted pelvic floor muscle training (PFMT) significantly reduces incontinence severity and shortens time to continence. One 2019 study noted improved urine control, quality of life, and reduced anxiety/depression within 3 months of starting. Pelvic fractures are sometimes reported following radiotherapy due to bone demineralization, while vitamin D, calcium and bisphosphonates help mitigate radiotherapy-induced bone loss.

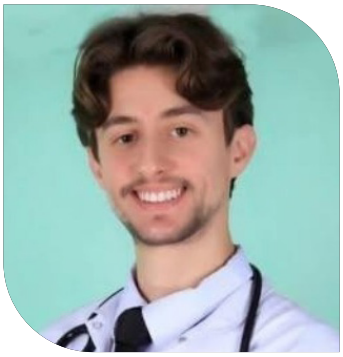
Sexual dysfunction remains under-addressed due to cultural stigma; structured documentation and role-play-based provider education show promise in improving care.

Social and economic burdens compound the medical challenges. Cancer survivors may experience financial toxicity, occasionally requiring loans or mortgage refinancing, which can strain family relationships. Persistent fear of recurrence and chronic stress also add to emotional exhaustion, highlighting the need for comprehensive psychosocial support. Based on a review and systemic meta- analysis performed in 2024, 136 randomized control trials with 23,154 participants were identified. Of these interventions, three types: digitally-delivered cognitive behavioral therapy (CBT), health education, and virtual reality therapy (VRT), demonstrated significant reductions in psychological distress compared to non-active controls. These three interventions improved quality of life compared to non-active controls.

Conclusion: Cancer survivorship demands a holistic, multidisciplinary approach. Reducing physical and psychological complications requires coordinated care between oncologists, specialists, and mental health professionals. Technological tools, such as AI systems and digital therapies, along with open communication and tailored education, can empower survivors and significantly enhance their long-term quality of life.

Biography

Liburn Grabovci is a medical doctor and who graduated in the faculty of medicine in Kosovo. His interests include surgery and internal medicine, and he aims to pursue postgraduate specialization while remaining dedicated to lifelong learning, professional growth and works in scientific papers. He collaborates with his other colleagues in the cancer research team of Professor Patricia Tai in Canada who serves as a mentor for them all.



Liburn Grabovci[1]*; Lorent Sijarina[1], Avi Assouline[2], Evgeny Sadikov[3]; Melody Qu[4]; Edward Yu[4]; Kurian Joseph[5]; Patricia Tai[6]

[1]University of Pristina, Faculty of Medicine, Prishtina, Kosovo

[2]Collège de Médecine des Hôpitaux de Paris, Paris, France

[3]University of British Columbia, Vancouver, BC, V6T 1Z2, Canada

[4]Western University, London, ON, N6A 3K7, Canada

[5]Dept of Radiation Oncology/Dept of Medical Physics, Cross Cancer Center, University of Alberta, 11011 - 88 Avenue, Edmonton, AB, T6G 2G5, Canada

[6]Dept of Radiation Oncology, University of Saskatchewan, Saskatoon, SK, Canada

Updates on CNS tumors

Background: Central nervous system (CNS) tumors are categorized as primary or secondary, with metastatic tumors being more common. They contribute significantly to morbidity and mortality. Over the past decade, notable advances have emerged in their management.

Methods: A comprehensive literature review was conducted using PubMed and major conference proceedings from the past 10 years.

Results: Progress has been most evident in systemic therapies.
(A) Vorasidenib was FDA-approved for patients with Grade 2 astrocytoma or oligodendroglioma harboring IDH1 or IDH2 mutations.
(B) Tovorafenib, a type II RAF kinase inhibitor, was approved for patients ≥6 months old with relapsed or refractory pediatric low-grade glioma harboring BRAF fusions, rearrangements, or V600 mutations. In the FIREFLY-1 trial (NCT04775485), involving patients aged 6 months to 25 years, the overall response rate was 51% (95% CI, 40–63), with a median duration of response of 13.8 months (95% CI, 11.3–not estimable).
In radiotherapy:
(A) The QUARTZ trial (n=538) found that whole-brain radiotherapy (WBRT) did not improve survival versus dexamethasone alone, except in patients under 60 or with favorable Graded Prognostic Assessment (GPA ≥2.5), while increasing side effects such as drowsiness, hair loss, nausea, and scalp irritation.
(B) The Brain Metastases Velocity (BMV) score defined as the number of new brain metastases after initial stereotactic radiosurgery (SRS) divided by time (years) was found to predict survival: 12.4, 8.2, and 4.3 months for BMV ≤3, 4–13, and ≥14, respectively. Higher BMV was linked to ≥2 initial metastases.
(P=.004) and melanoma histology.
(C) In the NRG Oncology CC001 Phase III trial, hippocampal avoidance WBRT plus memantine (HA-WBRT+M) preserved neurocognitive function better than WBRT+M (30 Gy in 10 fractions), with patients stratified by RPA class and prior interventions.
(D) As immunotherapy evolves, systemic therapy alone may suffice for small, non-eloquent lesions; however, SRS remains essential as initial and salvage treatment.
Two additional innovations include:

(A) Tumor treating fields, FDA-approved for glioblastoma, inhibit tumor cell division.
(B) The PuMP trial investigates MVR-C5252, an oncolytic HSV-1 virus encoding IL-12 and anti-PD-1, delivered via convection-enhanced delivery (CED). A novel implanted pump enables repeated intratumoral dosing, aiming to convert immunologically "cold" gliomas into "hot" tumors, overcoming key challenges in glioblastoma therapy.

Conclusions: Substantial advances in systemic and radiation therapies have improved CNS tumor care. Ongoing research into earlier diagnosis, personalized treatments, and quality of life optimization remains crucial.

Biography

Liburn Grabovci is a medical doctor and who graduated from the University of Prishtina in Kosovo. His interests include surgery and internal medicine, and he aims to pursue postgraduate specialization while remaining dedicated to lifelong learning, professional growth and works in scientific papers. He collaborates with his other colleagues in the cancer research team of Professor Patricia Tai in Canada who serves as a mentor for them all.

Lorent Sijarina[1*]; Melisa Stublla[1]; Omar Alqaisi[2]; Liburn Grabovci[1]; Melinda Hysenaj[1]; Suhair Al-Ghabeesh[3]; Patricia Tai[4]

[1]University of Prishtina, Faculty of Medicine, Prishtina, Kosovo

[2]Nursing Department, Al-Zaytoonah University, Amman, Jordan

[3]Faculty of Nursing, Al-Zaytoonah University of Jordan, Amman, Jordan

[4]Department of Oncology, University of Saskatchewan, Saskatoon, SK, Canada

Is artificial intelligence a possible solution for challenges in healthcare?

Introduction: Healthcare systems are facing mounting challenges from aging populations, increasing patient demand, and chronic disease burdens. Conventional approaches are often insufficient, highlighting the need for innovative tools. Artificial intelligence (AI) has emerged as a transformative solution, capable of analyzing complex data, supporting clinical decisions, and enabling more personalized and efficient care.

Method: This comprehensive review was conducted following adapted PRISMA guidelines to ensure systematic and transparent reporting. Comprehensive literature search was performed across multiple electronic databases including PubMed/midline, Scopus, Web of Science and ScienceDirect from January 2019 to September 2025. search terms included combinations of “artificial intelligence”, “machine learning”,” healthcare”, “clinical applications”, “diagnostic accuracy”, and related medical informatics terms. Studies were included if they reported on AI applications in healthcare settings, demonstrated clinical outcomes, and were published in peer reviewed journal. Two independent reviewers conducted study selection and data extraction.

Results: AI applications are expanding across diagnostics, telehealth, personalized medicine, robotic procedures, triage, patient monitoring, research, and administrative support. Studies demonstrate that AI improves diagnostic accuracy in radiology, pathology, and dermatology; streamlines triage and telehealth services; and integrates multimodal data for personalized treatment. Additionally, AI supports robotic surgeries, patient education, and continuous monitoring, while also contributing to research efficiency and easing administrative tasks such as documentation, scheduling, and resource management. These findings suggest AI improves outcomes, optimizes resources, and reduces clinician workload.

Conclusion: Despite its transformative potential, challenges such as bias, privacy concerns, lack of transparency, and limited real-world validation hinder full adoption. AI should be viewed as a supportive tool that augments, not replaces, clinician expertise. With rigorous validation, ethical governance, and interdisciplinary collaboration, AI can guide healthcare toward a proactive, precision-based, and patient-centered model.

Keywords: Artificial Intelligence, Machine learning, Precision medicine, Clinical decision support, Medical imaging, Digital health.

Biography

Lorent Sijarina, MD, graduated from the University of Prishtina, Faculty of Medicine. He actively participates in international research collaborations and is mentored by Professor Patricia Tai, a world-renowned expert in oncology. With a strong commitment to evidence-based practice and global health, Lorent strives to contribute to the advancement of medicine through clinical research, innovation, and interdisciplinary collaboration. His goal is to help improve healthcare outcomes and promote scientific excellence on a global scale.

Lorent Sijarina[1*]; Patricia Tai[2]; Evgeny Sadikov[3]; Kelvin Wong[4]; Omar Alqaisi[5]; Edward Yu[6]

[1]University of Prishtina, Faculty of Medicine, Prishtina, Kosovo

[2]Department of Oncology, University of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

[3]Division of Radiation Oncology, University of British Columbia, Vancouver, BC, V6T 1Z2, Canada

[4]Astellas Pharma Canada, 675 Cochrane Drive, Suite 650 West Tower, Markham, ON L3R 0B8, Canada

[5]Nursing Department, Al-Zaytoonah University, Airport Street, Amman, Jordan

[6]Department of Oncology, Western University, Ontario, Canada

Applying the concept of "Lean Management": Evaluation of a pioneer off-site injection program for androgen deprivation treatment of prostate cancer

Purpose: Due to the large number of prostate cancer patients who require androgen deprivation therapy (ADT), and the frequent monthly administration of a new gonadotropin-releasing hormone (GnRH) antagonist, our province pioneered off-site injection programs in Regina, which is the first of its kind in Canada. The objective is to decentralize services out of the acute care setting. We aimed to assess the acceptance and challenges of such programs and hypothesized that the off-site program is feasible.

Materials and Methods: Nurses in “community oncology program of Saskatchewan” (COPS) of major rural hospitals, designated drug stores and home injection programs are trained by the nurses of the two tertiary cancer clinics in Regina and Saskatoon. In Regina since 2012, nurses hired by drug companies run off-site injection programs in a few community clinics or drug stores. Patients who have difficulty going to the injection clinics would receive home injections from these nurses. These programs are paid by the drug companies to relieve the workload of nurses in the cancer clinic in Regina. Cancer clinic physicians inform drug companies or COPS by fax who and when should ADT be given, with written consent of patients regarding the process. Drug company staff coordinates the timing of the injection by calling patients with appointment for injection at the assigned sites. Oncologists are given feedback by telehealth follow up of rural patients regarding side effects and compliance or by faxed reports from company nurses. The cancer clinic pharmacy generated a list of all patients on ADT for the arbitrarily chosen year 2014, from which 60 patients were randomly selected for detailed incident data collection. No specific quantification tool was used; feedback was based on nurse reports and telehealth follow-up.

Results: According to our pharmacy records in 2014, 662 patients were on ADT.
Rural patients appreciate care at a closer facility. Miscommunication with home injection services resulted in no show of nurses for three home injections. In one instance a patient declined injection till clarification with the physician about the necessity to change the brand of ADT. One of the rural COPS sites was noted to have more local skin reactions after injection. The nurses there were retrained. Our experience after 4 years found that notification faxes had to be sent one week prior to injection to provide enough time for processing. One patient missed injection since he was mentally challenged and

forgot the date. There are advantages of the program not realized before. The program was particularly welcome by “snowbird” patients traveling to the United States carry drugs dispensed from the cancer clinic pharmacy to American injection sites and later drug companies reimburse them the injection fees. The prostate-specific antigen (PSA) was easily monitored as the nurses reminded patients to do this. A particular rural hospital was found to have more drug reactions due to improper injection techniques. The sales representative went to the hospital again and retrained the nurses. Due to communication breakdowns, a few lapses occurred in reordering degarelix and scheduling injection appointments.

Conclusions: The program benefits patients, nurses and oncologists. The COPS in major rural hospitals provide care for patients in their drainage area. It runs smoothly now. Notification faxes must be sent at least one week prior to injection to allow sufficient time for processing. Improving communication with patients, family doctors and drug companies will further enhance the program. The idea of decentralization of services to free up resources in acute care clinics/hospitals is important in delivery of care.

Biography

Lorent Sijarina, MD, recently graduated from the University of Prishtina, Faculty of Medicine, Prishtina, Kosovo, with wide interests spanning internal medicine, oncology, and public health. Passionate about academic research and evidence-based practice, he actively engages in international collaborations with diverse experts. Mentored by the renowned Professor Patricia Tai, a global leader in oncology, Lorent’s dedication to clinical research and global health has deepened. Committed to advancing medicine through scientific inquiry and compassionate care, he embraces innovation and interdisciplinary learning. Lorent aims to grow as a physician-researcher focused on improving healthcare outcomes and promoting scientific excellence.

Melinda Hysenaj[1*]; Melisa Stublla[1]; Lorent Sijarina[1]; Patricia Tai[2]; Omar Alqaisi[3]

[1]University of Prishtina, Faculty of Medicine, Prishtina, Kosovo

[2]University of Saskatchewan, Department of Oncology, Saskatoon, Canada

[3]Al-Zaytoonah University, Nursing Faculty, Amman, Jordan

Oncologic emergencies – A narrative review with expert opinions and latest recommendations

Introduction: Oncologic emergencies are some of the most critical and time-sensitive situations clinicians can face in cancer care. These events, ranging from metabolic imbalances to spinal cord compression or life-threatening infections, can progress rapidly and require immediate intervention. As cancer survival improves, these emergencies are increasingly seen not only in hospital wards, but also in outpatient and emergency settings.

Materials and Methods: This presentation draws on up-to-date literature from the past decade, including key clinical guidelines and large observational studies. We explore four main types of oncologic emergencies: metabolic (like hypercalcemia), neurologic (such as spinal cord compression), infectious (particularly febrile neutropenia), and vascular (notably superior vena cava syndrome). Two real-life cases are also included to show how these emergencies present in clinical practice and to explore the challenges and decision-making involved in their management.

Results: Hypercalcemia of malignancy may be the first sign of advanced cancer and can quickly become life-threatening. Spinal cord compression, if not treated quickly, can leave patients with permanent disability. Febrile neutropenia continues to be a major cause of cancer-related mortality, especially when treatment is delayed. Each of these conditions has clear protocols, yet timely recognition remains a major challenge. The two cases discussed illustrate how early signs can be subtle and how a structured, team-based response can make all the difference in outcome.

Conclusion: Oncologic emergencies require more than just knowledge, they demand vigilance, speed, and coordination. With the right approach, we can catch these events early and respond effectively. This talk will focus not only on clinical guidelines, but on real-world lessons and practical strategies to avoid common pitfalls and improve care for patients facing cancer-related emergencies.

Biography

Dr. Melinda Hysenaj is a practicing physician and academic based at the University of Pristina, Kosovo. Her work focuses on oncology, acute care, and medical education. With clinical experience spanning emergency departments and oncology units, she brings a patient-centered perspective to complex medical topics. Dr. Hysenaj is actively involved in research, teaching, and international collaboration, particularly in advancing cancer care in low- and middle-income countries. Her passion lies in bridging evidence and practice—especially when lives depend on rapid, informed decisions. Outside of medicine, she enjoys writing, mentoring young professionals, and participating in global health initiatives.

Melisa Stublla[1*], Lorent Sijarina[1], Melinda Hysenaj[1], Liburn Grabovci[1], Drilon Bytyci[1], Patricia Tai[2]

University of Prishtina, Faculty of Medicine, Prishtina, Kosovo

Dept of Radiation Oncology, University of Saskatchewan, Saskatoon, SK, Canada

Colorectal cancer screening

Introduction: Colorectal cancer is one of the leading causes of cancer-related mortality worldwide. In many cases, diagnosis occurs at late stages, which negatively affects survival outcomes. Due to its slow progression through precancerous lesions, CRC is particularly amenable to early detection and effective prevention through screening.

Aim: This study aims to evaluate the role of key CRC screening methods in reducing incidence and mortality, compare their performance and acceptability, and identify factors that influence their implementation at the population level.

Materials and Methods: A review of literature from the last 10 years was conducted, drawing on data from high-impact scientific databases such as PubMed, Google Scholar. Screening methods were analyzed based on sensitivity, specificity, participation rates, and effectiveness in the context of public health.

Results: Colonoscopy was found to be the most effective method, with reductions of over 50% in incidence and over 60% in mortality, due to its ability to provide direct visualization and immediate therapeutic intervention. However, its low participation rate limits its impact at the population level. FIT performed better than gFOBT, showing good sensitivity, high participation, and a positive predictive value for advanced lesions. FIT-DNA showed higher sensitivity but lower specificity and higher cost. Sigmoidoscopy and CT colonography offered non-invasive alternatives with moderate impact on mortality reduction but lower utilization.

Conclusions: CRC screening remains one of the most powerful interventions for the control and prevention of this disease. Colonoscopy provides strong individual-level protection, whereas fecal tests are better suited for population-wide application.

Biography

Dr. Melisa Stublla, is a recent medical graduate from the University of Prishtina in Kosovo, with growing interest in oncology, gynecology, internal medicine, and public health. She is deeply engaged in research and values evidence-based practice, having collaborated with international teams across multiple disciplines. Under the mentorship of Professor Patricia Tai, a leading figure in global oncology, Melisa is further motivated to pursue clinical research and contribute to global health efforts. She is dedicated to improving patient outcomes through scientific inquiry, innovation, and human-centered care.

Minoo Shahidi*; Mahshid Vafajo; Fahimeh Shahriyary; Mohammad Reza Amirzargar; Ahmad Kooshari

Department of Haematology and Blood Banking, Faculty of Allied Medicine, Iran University of Medical Sciences, Tehran, Iran

Resveratrol reduces the presence of Extracellular Traps (ETs) in acute promyelocytic leukemia (NB4) cells

NETosis and ETosis are processes involving the release of extracellular traps (ETs). They have been linked to cancer progression, particularly in promoting metastasis and tumor-associated thrombosis. This indicates that redundant NETs/ETs formation can contribute to cancer spread, making it a potential therapeutic target. Therefore, discovering ways to inhibit NETs/ETs formation could improve treatment outcomes.

The ETOsis phenomenon in Human acute promyelocytic leukemia may lead to activating the platelets and coagulation factors. Accordingly, coagulation and fibrinolysis can be promoted. Resveratrol (RSV) is a botanical antioxidant with anti-inflammatory and anti-leukemia effects.

This study was conducted to assess the inhibitory effect of RSV on the occurrence of ETOsis in the NB4 cell line.

Methods: Human acute promyelocytic leukemia cell line (NB4) was stimulated and treated by lipopolysaccharides (LPS) and RSV, respectively. Sytox green and a fluorescent microscope were used to assess the ETOsis in NB4 cells. Furthermore, the expression level of peptidylarginine deiminase 4 (PAD4) gene and the occurrence of ETOsis in NB4 cells were evaluated by real-time PCR and flow cytometry, respectively. Moreover, an enzyme-linked immunosorbent assay (ELISA) kit was utilized to measure tumor necrosis factor-α (TNF-α) cytokine.

Results: Following treatment with RSV, a significant decrease in PAD4 gene expression and TNF-α cytokine concentration in the supernatant of NB4 cell line culture medium was observed. Besides, ETOsis in the NB4 cells treated with LPS and RSV decreased.

Conclusion: The findings demonstrated that RSV can inhibit ETOsis in NB4 cells. By inhibiting ETOsis, RSV may reduce bleeding and, consequently, failure after treatment in acute promyelocytic leukemia (APL) patients.

Biography

Dr. Minoo Shahidi is an Immunohematologist specializing in cancer, angiogenesis and NETosis research. She holds a PhD in Immunohematology from Surrey University, UK. Dr. Shahidi has published extensively on Hematologic Malignancies and Inflammation. She is currently Associate Professor at Department of Hematology and Blood Banking School of Allied Medical & Sciences and Pediatric Growth and Development Research Center Endocrinology & Metabolism Research Institute, Iran University of Medical Sciences, Tehran, Iran.

Nicola Sarandria MD, PhD, MBA, ERT

Scientific Director - Planet Healthcare Srl, Healthcare Director Olimpia Medical Center, Italy

Dr Nicola Sarandria's theory of Arginase-1 and N2 neutrophil's role in rectal cancer based on the 2025 OR1 research study directed by Dr Nicola Sarandria: New insights on the relationship between Arginase-1, tumor associated neutrophils, perineural invasion, neoadjuvant therapy and prognosis in rectal cancer patients

Introduction: Rectal cancer is one of the most common cancers with a high epidemiologic burden. Need for new prognostic and predictive indicators and therapies is urgent in the field to improve clinical outcomes and gather a better understanding of the disease. Indicators such as Arginase-1 (produced also by neutrophils) that has been found to be a potent immuno-depressor (eg. T cell immunodepression), neural-tumor relation, eg. the schwann cells-tumor interaction (including the recalling of MDSC), that can act as immunosuppressors for instance through the increase in production of TGF beta. This paper aims to shed new light on this complex set of interactions and their possible roles in prognosis, predictivity and basis for new drugs discoveries.

Methodology: As part of the project a quantitative analysis of tumor-associated neutrophils (TANs) on formalin embedded sections of rectal cancer using CD66b and ARG1 immunohistochemical staining was conducted. A total of 65 patients with histologically confirmed rectal adenocarcinoma were retrospectively included and stratified into four groups according to neoadjuvant treatment modality. Clinical and pathological data were collected from medical records, including: perineural invasion, neoadjuvant treatment received and progression-free survival (DFS).

Conclusion and Discussion: Patients who did not undergo neoadjuvant therapy and had no perineural invasion from the tumor, had a statistically significant higher level of Arginase-1 and CD66b (neutrophils) and had a significantly worse prognosis (in terms of Disease Free Survival) compared to patients who underwent neoadjuvanct therapy (especially compared to those who underwent exclusively radiotherapy). This last group of patients had a significantly higher amount of Arginase-1 and tumor associated neutrophils (TANs) compared to the first group. Including the patients whose tumors had perineural invasion, patients who didn't undergo any neoadj therapy had a higher amount of Arginase 1 level in the tumor (with also a corresponding higher amount of CD66b cells).

Biography

Dr. Nicola Sarandria, a graduate in medicine and surgery cum laude from the Humanitas University of Milan, continued his studies in Switzerland, the United Kingdom and the United States of America at university institutes such as the North Wales Management School and the Harvard Medical School. He is immediately committed to the freedom of science and open access science. From a study directed and coordinated by him in 2025, he creates the "Sarandria Theory" on new insights on the role of a type of neutrophils and arginase in rectum cancer. He participated in the creation, direction and expansion of a company in the health sector that manages health services to governments, military and officers. He is also a dark fantasy writer, having written an Amazon bestseller and collaborating with various artists such as the Stoker Prize winner and friend of George RR Martin, George Guthridge.

Nira Ben-Jonathan*; Eric Hugo; Edward Merino
University of Cincinnati, Cincinnati Ohio, USA

Suppression of breast cancer by small molecules that block the prolactin receptor

Background: Prolactin (PRL) is a protein hormone whose main production site is the pituitary gland. In humans, however, PRL is produced and secreted not only by the pituitary but also by other cells such as adipocytes, lymphocytes and mammary cells. The PRL receptor (PRLR) belongs to the superfamily of non-tyrosine kinase cytokine receptors. Multiple studies have shown that both circulating (endocrine) and locally produced (paracrine or autocrine) PRL increase breast cancer growth and metastasis and confer resistance to chemotherapy.

Objectives: To identify and then characterize small molecules that block the tumorigenic actions of PRL in breast cancer under *in vitro* and *in vivo* conditions.

Methods: Three cell-based assays were employed in high throughput screening of 51,000 small molecules. Of these, we have identified two small molecule inhibitors (SMIs), which we named SMI-1 and SMI-6. Various cell types and athymic nude mice with breast cancer xenografts were then used to verify the anti-tumorigenic actions of the SMI's.

Results: SMI-1 and SMI-6 bound to the PRLR at 1-3 μM affinity. *In silico* binding simulation identified the sites of their binding to the extracellular domain of the PRLR. Both compounds abrogated PRL-induced breast cancer cell growth and invasion and suppressed malignant lymphocyte proliferation. SMI-6 effectively reduced the viability of several breast cancer cell types while showing minor activity against non-malignant cells. SMI-6 displayed high selectivity when tested against multiple kinases, with no apparent *in vitro* or *in vivo* toxicity. In athymic nude mice, SMI-6 rapidly and dramatically suppressed growth of PRL-expressing breast cancer xenografts.

Conclusions: SMI-6 binds to the PRLR and interferes with receptor activation by PRL. At 1μM, SMI-6 antagonizes PRL-induced JAK2/Stat 5 activation and prevents PRL-induced increases in cell proliferation and invasion in many cell lines. SMI-6 shows high selectivity and no cytotoxicity. SMI-6 robustly suppresses tumor growth, much beyond the promotional effects of PRL. These data suggest that SMI-6 has both PRL-dependent and PRL-independent anti-tumorigenic activities. Advantages of SMI-6 are oral deliverability, potential brain penetration to treat metastases, lack of immunogenicity, ease of structural optimization, and relatively low production costs. This report represents a pre-clinical phase of developing a novel anti-cancer agent with the potential to become effective therapeutics in selected patients.

Biography

Nira Ben-Jonathan is Emeritus Professor of Cancer Biology, University of Cincinnati, Ohio, USA. She published 180 manuscripts, contributed 12 chapters to textbooks, and wrote a book on Dopamine. She mentored 65 grad students, medical fellows and research scientists. She was awarded the NIH Research Career Development Award, is an Elected Fellow of the AAAS and the Royal Society of Medicine and was Chairman of the Gordon Research Conference on Prolactin. She received the Rieveschl Award for Outstanding Scientific Research, and the Merker Lectureship in Translational Endocrinology. She served as a member on many committees of the NIH, DOD, and the Komen foundation, and chaired five NIH Study Sections.

Patricia Tai[1]; Omar Alqaisi[2*]; Suhair Al-Ghabeesh[2]; Lorent Sijarina[3]; Edward Yu[4]; Aoife Jones Thachuthara[5]; Avi Assouline[6]; Osama Souied[1]; Kimberley Hagel[1]; Kurian Joseph[7]

[1]University of Saskatchewan, Canada

[2]Department of Nursing, Al-Zaytoonah University, Jordan

[3]Faculty of Medicine, University of Prishtina, Kosovo

[4]Department of Radiation Oncology, Western University, Canada

[5]Department of Medical Oncology, Cork University, Ireland

[6]Department of Radiation Oncology, Collège de Médecine des Hôpitaux de Paris, France

[7]Department of Radiation Oncology, University of Alberta, Canada

Immunotherapy in merkel cell carcinoma of the skin: A 2025 comprehensive review

Purpose: Merkel cell carcinoma (MCC) is a rare and aggressive form of skin cancer. Although immunotherapy has transformed MCC management, published data remains limited. This comprehensive review evaluates current evidence on immunotherapy in MCC.

Methods: Peer-reviewed articles published between 2000 and 2024 were manually searched in four databases: Scopus, ScienceDirect, PubMed and MEDLINE, using the keywords “Merkel cell carcinoma” AND “immunotherapy”. The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) methodology was employed.

Results: Immunotherapy can be given in different settings: (A) Neoadjuvant: The CheckMate 358 trial reported a 54.5% response rate among 33 radiologically evaluable patients treated with nivolumab, each showing over 30% tumor reduction. (B) Adjuvant: (1) The ADMEC-O phase II trial demonstrated improved disease-free survival with adjuvant nivolumab. (2) The ADAM phase III trial evaluates adjuvant avelumab in node-positive patients’ post-surgery/radiation, with common side effects including nausea, fatigue, and itching. (3) STAMP, a phase III trial, investigates pembrolizumab in stage I–III MCC. Both ADAM and STAMP have completed accrual, pending results. (C) Primary therapy: KEYNOTE-017 and JAVELIN trials reported a 60% overall response rate and ~40% 3-year progression-free survival with first-line pembrolizumab or avelumab. Both agents also show promise as salvage therapies.

Conclusion: Immunotherapy demonstrates encouraging outcomes in MCC across various treatment stages. Continued research is essential to optimize timing, integrate with multimodal therapies, and address resistance mechanisms such as intra-tumoral STING activation and tumor-associated macrophages.

Biography

Mr. Omar Al-Qaisi from Al-Zaytoonah University is a nursing expert in oncology and emergency medicine. He holds a master's degree in emergency and disaster medicine from Al-Zaytoonah University. He currently works as a part-time clinical instructor at Al-Zaytoonah University and also at the Military Oncology Center. He has experience using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and the Mixed Methods Appraisal Tool (MMAT) for research. His recent research focuses on sexual healthcare, selenium, orthopedics, sleep quality, pain management and patient satisfaction in oncology patients.

Omar Alqaisi[1*]; MahaSubih; Liburnn Grabovci[2]; Charalambos Plousiou[3]; Patricia Tai[4]

[1]Faculty of nursing, Al-Zaytoonah University of Jordon, Airport Street, Amman, Jordan

[2]University of Pristina, Faculty of Medicine, Prishtina, Kosovo

[3]Charalambos Plousiou, Greece

[4]Patricia Tai, Department of Oncology, University of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

Managing sexual issues in melanoma patients: A scoping review

Background: Managing sexual issues in melanoma patients involves addressing both physical and psychological changes that may arise during or after treatment. Although melanoma itself may not directly affect sexual function, treatments such as radiotherapy, immunotherapy, targeted therapy, and surgery can lead to fatigue, change in body image/hormone levels and psychological issues, which can affect sexual health of patients.

Methods: A focused literature review was performed on this topic from 2020 to 2025, including case reports, case series, guidelines and other full research publications.

Results: We found 9 publications on this topic. Effective treatment begins with open dialog by encouraging patients and partners to discuss sexual concerns with their healthcare providers, though studies show both doctors and nurses often neglect to do this unless prompted and hence delay timely intervention. Health-care providers should be alert to subtle signs of relationship problems among patients.

Psychosocial support plays a vital role. Counseling, either individual or couples-based, can help patients navigate changes in desire, self-esteem, and relationship dynamics. Cognitive behavioral therapy (CBT) and sex therapy may be beneficial for addressing anxiety, depression, or trauma.

Medical interventions may include lubricants for vaginal dryness, medications/local injections/penile prostheses for erectile dysfunction, or hormone replacement therapy when appropriate. For patients experiencing premature menopause or hormonal shifts due to treatment, endocrine consult should be arranged.

Body image rehabilitation, especially after visible changes like surgical scars, can be supported through physical therapy, peer support groups, and reconstructive plastic surgery when feasible. The Look Good Feel Better programs in Canada teaches ladies to wear cosmetics/wigs. They meet regularly in all major cancer centers like a support group.

Conclusion: A multidisciplinary approach involving oncologists, psychologists, psychiatrists, advanced nurses, sexual medicine specialists, and patient advocates ensures comprehensive care. Addressing sexual health is the key for a good quality of life among melanoma patients.

Biography

Mr. Omar Al-Qaisi from Al-Zaytoonah University is a nursing expert in oncology and emergency medicine. He holds a master's degree in emergency and disaster medicine from Al-Zaytoonah University. He currently works as a part-time clinical instructor at Al-Zaytoonah University and also at the Military Oncology Center. He has experience using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and the Mixed Methods Appraisal Tool (MMAT) for research. His recent research focuses on sexual healthcare, selenium, orthopedics, sleep quality, pain management and patient satisfaction in oncology patients.

Omar alqaisi[1]; Suhair Al-Ghabeesh[1]; Patricia Tai[2*]; Kelvin Wong[3]; Kurian Joseph[4]; Edward Yu[5]

[1]Al-Zaytoonah University, Airport St, Amman, Jordan

[2]University of Saskatchewan, Saskatoon, Canada

[3]Astellas Canada, Markham, Ontario, Canada

[4]University of Alberta, AB, Canada

[5]Western University, ON, Canada

A narrative review on the roles of nursing in sexual dysfunction among oncological patients with updated recommendations

Background: Sexual dysfunction affects an estimated 50–70% of cancer survivors but remains underrecognized and undertreated, impacting quality of life and emotional well-being.

Methods: This narrative review involves a comprehensive search of PubMed/MEDLINE, CINAHL, Scopus, Web of Science, and ScienceDirect for English-language publications (January 2010–May 2025), using combined MeSH and free-text terms for 'sexual health', 'cancer', 'nursing', 'roles of nurses', 'immunotherapy', 'targeted therapy', 'sexual health', 'sexual dysfunction', 'vaginal dryness', 'genitourinary syndrome of menopause', 'sexual desire', 'body image', 'erectile dysfunction', 'climacturia', 'ejaculatory disorders', 'dyspareunia', and 'oncology'. We used the IMRAD (Introduction, Methods, Results, and Discussion) approach to identify 1245 records and screen titles and abstracts. Fifty studies ultimately met the inclusion criteria (original research, reviews, and clinical guidelines on oncology nursing and sexual health).

Results: All the treatments contributed to reduced libido, erectile dysfunction, dyspareunia, and body image concerns, with a prevalence of 57.5% across genders. Oncology nurses can provide sex education and counseling. Barriers (limited training, cultural stigma, and the absence of protocols) hinder effective intervention. Addressing these issues through sexual health curricula, formal referral systems, and policy reforms can enhance nursing care. Future research should assess the impact of targeted nurse education and the institutional integration of sexual health into cancer care.

Conclusions: Empowering nurses through structured education, standardized guidelines, and open communication strategies is essential for improving patient outcomes. Addressing sexual dysfunction as a routine aspect of cancer care will enhance survivors' quality of life and foster a more holistic approach to oncology treatment. This research was conducted by a team of researchers with origins in the Middle East and China, both of whom represent conservative traditions and diverse religious backgrounds. This concise overview, which is rich in detailed references and clinical pearls, offers a unique and highly educational resource for healthcare professionals across multiple disciplines, such as nurses, physicians, social workers, psychologists, music therapists, sex therapists, and chaplains. It therefore has broad clinical implications, and practical suggestions will greatly benefit cancer patients and their providers from different disciplines.

Keywords: Glioma, Developing countries, Survival rates, Healthcare infrastructure, Treatment protocols, Oncology nursing.

Biography

Prof. Patricia Tai, a gold medal graduate from University of Hong Kong (11th place in the 2026 QS World University Rankings), trained under renowned experts Prof. John Ho (nasopharyngeal cancer), Prof. David McDonald (brain tumor response: McDonald's criteria), and Mr. Jake Van Dyk (medical physics). As an international skin cancer specialist, she has authored five UpToDate chapters (Wolters Kluwer, Wichita, United States). She is also a Clinical Professor at the University of Saskatchewan in Western Canada. She has 153 full publications, 187 conference abstracts, and 182 presentations. She had won 13 academic awards.

Omar Alqaisi[1]; MsN; Maha Subih[2]; Kurian Joseph[3]; Edward Yu[4]; Patricia Tai[5*]

[1]Al-Zaytoonah University of Jordan, Faculty of Nursing, Amman, Jordan

[2]Faculty of Nursing, Al-Zaytoonah University of Jordan, Amman, Jordan

[3]Division of Oncology, University of Alberta, Edmonton, AB, Canada

[4]Division of Oncology, Western University, London, ON, Canada

[5]Division of Oncology, University of Saskatchewan, SK, Canada

Oncology nurses attitudes, knowledge and practices in providing sexuality care to cancer patients: A scoping review

Background: Sexual health in cancer care is often overlooked. This study examines oncology nurses' knowledge and practices regarding sexuality care, identifying barriers and facilitators.

Methods: A Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)-guided search of Scopus, ScienceDirect, PubMed, and EBSCO focused on studies from 2014 to 2024. Of 1735 identified studies, only 11 met inclusion criteria.

Results: Findings revealed a lack of knowledge among nurses and dissatisfaction with sexual healthcare. Barriers include time constraints, cultural factors, and personal reservations. Routine discussions are often absent due to inadequate training. Education- and system-based strategies are needed to enhance nurses' competence in addressing sexual concerns. Implementing training programs, structured records, evaluation tools, concept maps, and system support would improve patient care and oncology nursing practices. Addressing these gaps with practical measures can enhance communication, patient satisfaction, and quality of life. This unique analysis was conducted by two experienced advanced nurses in the Middle East, werediscussions about sex are often regarded as taboo.

Conclusion: Despite perceived barriers, research has demonstrated that educational sex-related awareness sessions and structured interventions help ensure effective communication. Further research should be encouraged to quantify these interventions over the long term and assess strategies for integrating sexual medicine into broader oncology practice across diverse cultural and healthcare settings. If these challenges are managed effectively, healthcare providers will be better positioned to deliver quality care that acknowledges the sexual health needs of cancer patients, thereby enhancing their quality of life.

Keywords: Healthcare infrastructure, Treatment protocols, Oncology nursing, Sexuality.

Biography

Prof. Patricia Tai, a gold medal graduate from University of Hong Kong (11th place in the 2026 QS World University Rankings), trained under renowned experts Prof. John Ho (nasopharyngeal cancer), Prof. David McDonald (brain tumor response: McDonald's criteria), and Mr. Jake Van Dyk (medical physics). As an international skin cancer specialist, she has authored five UpToDate chapters (Wolters Kluwer, Wichita, United States). She is also a Clinical Professor at the University of Saskatchewan in Western Canada. She has 153 full publications, 187 conference abstracts, and 182 presentations. She had won 13 academic awards.

Dr Prema Naittee George

Assistant Professor, Department of Applied Psychology, GITAM University, Hyderabad, India

The paradox of spirituality: Its impact on social well-being in AYA cancer survivors

Background: Cancer survivors often embark on a challenging journey towards physical and emotional recovery, seeking various avenues to enhance their overall well-being. Among these avenues, spirituality has gained recognition as a coping mechanism that provides solace and purpose. However, the relationship between spirituality and social well-being in cancer survivors remains a complex and understudied phenomenon. This paper explores the paradoxical impact of spirituality on social well-being in adolescent and young adult cancer survivors, shedding light on a previously unexamined facet of survivorship. Our research explores the multifaceted nature of spirituality in the context of cancer survivorship, drawing on empirical evidence and qualitative insights. While spirituality can provide solace, meaning, and hope to individuals facing the daunting challenges of cancer while contributing to the overall quality of life, it may also inadvertently lead to a decrease in social well-being. This paper highlights the potential mechanisms through which spirituality can exert both positive and negative influences on the social lives of female cancer survivors.

Methods: The mixed-methods study consisted of 385 participants in the quantitative phase and 50 participants in the qualitative phase. The study used standardised questionnaires to measure quality of life, Spiritual well-being, and social well-being, and semi-structured interviews to explore the individual perspectives on spirituality.

Results: We examine the interplay between spirituality and social well-being, exploring factors such as social isolation, changes in relationships, and the impact on support networks. The paper discusses how the intensity and expression of spirituality, as well as individual differences, contribute to the observed outcomes. Furthermore, we analyse the role of healthcare providers and support systems in navigating this intricate relationship.

Conclusion: The paper offers a comprehensive exploration of the paradoxical nature of spirituality's impact on social well-being in cancer survivors. Our findings emphasise the importance of a nuanced approach to addressing the spiritual needs of cancer survivors, taking into consideration the potential consequences for their social lives.

Impact on cancer survivors: This research contributes to a deeper understanding of the challenges faced by cancer survivors and provides valuable insights for healthcare practitioners, support organisations, and individuals navigating the complex terrain of cancer survivorship.

Keywords: AYA cancer survivorship, Spirituality, Social well-being, Quality of life, Mixed methods research.

Biography

Dr. Prema Naittee George holds a Ph.D. in Psychology from IIT Hyderabad, with specialization specializes in Psycho-oncology. Her doctoral research explored cancer-related fatigue, work disability, and rehabilitation among adolescent and young adult cancer survivors. He MPhil thesis from IIT Hyderabad, compared the Kerala Model of Palliative Care with standard oncology care. Currently, Dr. George is an Assistant Professor at GITAM University, Hyderabad, teaching forGraduate and Post-graduate students of Applied Psychology. She has published extensively,and presented at national and international conferences, earning the Best Clinical ImplicationPaper award at IPOS 2020.

Ren-Wang Peng[1*]; Liang ZHAO[1]; Haibin DENG[1]; Nicola Zamboni[2]; Geert van Geest[3]; Rémy Bruggmann[3]; Thomas M Marti[1]; Qinghua Zhou[4]; Patrick Dorn[1]

[1]Department of General Thoracic Surgery, Inselspital, Bern University Hospital, University of Bern, Bern, Switzerland

[2]Department of Biology, Institute of Molecular Systems Biology, Swiss Federal Institute of Technology/ETH Zürich, Zurich, Switzerland

[3]Interfaculty Bioinformatics Unit and Swiss Institute of Bioinformatics, University of Bern, Bern, Switzerland

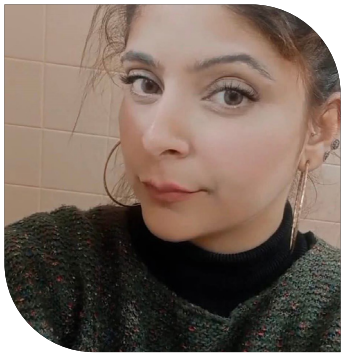
[4]Lung Cancer Center/Lung Cancer Institute, West China Hospital, Sichuan University, Chengdu, China

Lactate dehydrogenase B noncanonically promotes ferroptosis defense in *KRAS*-driven lung cancer

Ferroptosis is an oxidative, non-apoptotic form of cell death that is frequently inactivated in cancer, yet its regulation in oncogene-specific tumors remains poorly understood. Here, we identify lactate dehydrogenase B (LDHB)—but not the closely related LDHA—as a noncanonical regulator of ferroptosis defense in KRAS-driven lung cancer. Using murine models and human-derived tumor cell lines, we demonstrate that LDHB silencing impairs glutathione (GSH) levels, sensitizing cancer cells to inhibitors of either GSH biosynthesis or utilization. This triggers a KRAS-specific ferroptosis-driven synthetic lethality, characterized by increased glutamine metabolism, oxidative phosphorylation (OXPHOS), and mitochondrial reactive oxygen species (mitoROS). Furthermore, we show that LDHB suppression upregulates STAT1, a negative regulator of SLC7A11, thereby reducing SLC7A11-dependent GSH metabolism. Our findings reveal a previously unrecognized role of LDH isoenzymes in ferroptosis resistance and provide a novel therapeutic rationale for targeting oncogene-specific ferroptosis susceptibility in KRAS-driven lung cancer.

Biography

Prof. Ren-Wang Peng is a cancer researcher specializing in translational oncology and therapeutic resistance. He earned his Ph.D. from the Chinese Academy of Sciences and has conducted research at the Max Planck Institute and ETH Zürich. His work focuses on lung cancer and mesothelioma, with an emphasis on cancer stem cells and drug resistance mechanisms. Prof. Peng has published extensively in leading scientific journals and collaborates internationally on cancer research initiatives. He is currently an Associate Professor and Lab Head at the University Hospital of Bern (Inselspital) and a faculty member at the University of Bern's Faculty of Medicine.



Saba Beigh
Al-Baha University, Saudi Arabia

Comprehensive pharmacokinetic profiling and molecular docking analysis of natural bioactive compounds targeting oncogenic biomarkers in breast cancer

Breast cancer remains a leading cause of mortality in women worldwide, emphasizing the need for novel, safe, and effective therapeutic strategies. This study investigates the potential of four natural bioactive compounds—Berberine, Curcumin, Withaferin A, and Ellagic Acid—to target critical breast cancer biomarkers, including BCL-2, PD-L1, CDK4/6, and FGFR, which are involved in tumor progression, immune evasion, and cell cycle regulation.

Using in silico approaches, including pharmacokinetic (ADME) profiling, molecular docking, and molecular dynamics simulations, we evaluated the binding affinities, stability, and drug-likeness of these compounds. Results indicate that Berberine and Ellagic Acid exhibit strong interactions with the selected targets, with binding affinities of −9.3 kcal/mol for BCL-2 and −9.8 kcal/mol for PD-L1, respectively, and form stable protein–ligand complexes over 100 ns simulations. ADME profiling further highlights their favorable absorption and solubility, suggesting suitability for clinical applications.

These findings underscore the potential of Berberine and Ellagic Acid as multi-target natural inhibitors for breast cancer therapy, offering promising leads for further experimental validation and development of safer, cost-effective anticancer strategies.

Biography

Dr. Saba Beigh is an Associate Professor of Toxicology and Pharmacology at Al-Baha University, Saudi Arabia. She obtained her Ph.D. in Toxicology and Pharmacology from Jamia Hamdard University, India, and completed her postdoctoral training in Nanotoxicology at the University of Strasbourg, France. Her research focuses on pulmonary toxicology, nanotoxicology, oxidative stress, immunopharmacology, and computational pharmacology. She has authored numerous publications in peer-reviewed journals and has been honored with awards including the EUROTOX Best Poster Award and the CSIR-SRF Fellowship.

Salah S. Massoud[1,2]

[1]Department of Chemistry, University of Louisiana at Lafayette, P.O. Box 43700, Lafayette, LA 70504, USA

[2]Department of Chemistry, Faculty of Science, Alexandria University, Moharam Bay, Alexandria, Egypt

Copper(II) complexes as potent chemotherapeutic agents for anticancer therapy

Cancer is the second top leading cause of death worldwide. According to WHO, approximately 10 million individuals died of cancer in 2022, and this number is expected to rise to 16.4 million by 2040. Since the FDA approval of cisplatin as a chemotherapeutic drug for cancer treatment in 1978 and its second generations of carboplatin in 1989 and oxaliplatin in 2002, large number of platinum-based derivatives have been developed, but none of them have been entirely successful in treating this fatal disease. Despite the extensive use of these chemotherapeutic agents in clinical oncology and their widespread application, these agents often exhibit severe side effects such as neurotoxicity, nephrotoxicity, ototoxicity, reduced immunity, gastrointestinal disorders, kidney, and liver failure, as well as tumor resistance to cisplatin limit the use of these drugs and specifically cisplatin. These challenges raise the urgent need for the development of alternative chemotherapeutic agents. Copper complexes have emerged over the last two decades as more effective anticancer agents with possible better pharmacological profiles. The cytotoxicity of many Cu(II/I) compounds have been reported *in vitro* and *in vivo* cancer cells and reveal high potent cytotoxicity. These include mono- and di-nuclear Cu(II) complexes derived from compounds bearing pyridyl rings, terpyridyl derivatives (R-TPY) as well as tripodal tetradentate amines incorporating pyridyl and phenolate moieties. The *in vitro* anticancer activity of these compounds was demonstrated against a wide range of human cancer cell lines. For example, the binuclear doubly bridged pyridyl-phenoxido Cu(II) complexes revealed significant antiproliferative activity with the highest cytotoxic selectivity index (SI > 10) against A2780 (ovarian cancer) and even better results were obtained with m-MeO-TPY in MCF-7 (breast cancer). The mechanism of action of the Cu(II) compounds against cancer cells are addressed.

Biography

Dr. Salah Massoud published more than 200 papers in peer-reviewed journals on copper as anticancer agents, and DNA cleavage and ATP hydrolysis by transition metal complexes, Single molecule magnets in Co(II) and lanthanides, molecular magnetism in polynuclear coordination compounds as well as fluorescence in lanthanides. He delivered more than 200 articles as invited speakers to National and International Conferences and several schools around the world. He holds a Ph.D. from Boston University, USA in bioinorganic and inorganic chemistry and obtained the M.Sc. and B.Sc. from Alexandria University. He serves in the editorial board and guest editor for several journals. He is currently a Distinguished Professor at University of Louisiana, USA and Alexandria University, Egypt.

Sarantis Gagos

Biomedical Research Foundation of the Academy of Athens, Greece (BRFAA)

Targeting alternative lengthening of telomeres in cancer

Telomeres have a double role in neoplasia. These highly conserved repetitive nucleoprotein structures that protect the ends of chromosomes safeguard somatic cells from tumorigenic mutations and prevent cancer. However, most tumors bypass replicative senescence and support malignant cell growth via the activation of telomere maintenance mechanisms (TMM). Underpinning their important role in neoplasia, DNA damage responses lie at the epicenter of these seemingly contradictory but highly interrelated telomere functions. It is well established that the great majority of cancers sustain capacity for uncontrolled continuous cell proliferation through the activation of reverse transcriptase telomerase. However, approximately 10-15% of human neoplasms maintain their telomeres via at least two distinct homologous recombination-mediated pathways, termed Alternative Lengthening of Telomeres (ALT). Although much rarer and less well understood than telomerase activity, ALT is considered equally important, not only because it involves a subset of highly aggressive tumors, but also due to its putative engagement as a resistance mechanism that may burden all current and future onco-therapies based on telomerase suppression. Significant progress has been made in understanding the underlying mechanisms of ALT. Epigenetic modifications, telomere-interacting factors, and homology-driven DNA damage repair have been implicated in the ALT pathway. These advances hold promises for the development of novel, highly efficient therapies that target TMM in malignancy.

Biography

Sarantis Gagos received his PhD from Athens Medical School. He was Postdoctoral Fellow at the Laboratory of Cellular Genetics, M.D. Anderson Cancer Center, University of Texas, Houston, USA. Dr Gagos is certified by the American Board of Medical Specialties as a “Clinical Cytogeneticist”. Dr Gagos was Director of the Laboratory of Clinical Cytogenetics of the University Hospital of Geneva, Switzerland. Current research of Gagos group in the Biomedical Research Foundation of the Academy of Athens, Greece is focused on Chromosomal Instability and the basic mechanisms of recombinatorial telomere maintenance in cancer.

Sergey Reva[1*]; Arnautov Alexander[2]; Sergey Petrov[3]

[1]Assistant Professor, Chairman of the Urooncological Department, Pavlov First Saint Petersburg State Medical University, Saint-Petersburg, Russia

[2]Urologist, Urooncological Department, of Pavlov First Saint Petersburg State Medical University, Saint-Petersburg, Russia

[3]Professor, Chief of the Urological Clinic, Pavlov First Saint Petersburg State Medical University, Saint-Petersburg, Russia

Immunological markers as predictors of unfavorable pathomorphological characteristics, an upgrading, upstaging and risk group increase in prostate cancer patients after radical prostatectomy

Background: The role of systemic inflammation in carcinogenesis has been studied for a long time. Markers of systematic inflammation response, such as neutrophil-lymphocyte ratio (NLR), platelet-lymphocyte ratio (PLR) and lymphocyte-monocyte ratio (LMR), are associated with the unfavorable course of many malignant neoplasms, including prostate cancer. However, the data on the role of immunological markers as predictors of aggressive forms of prostate cancer varies significantly.

Methods: In our center was performed a retrospective analysis of the treatment results of 74 patients, each of whom underwent laparoscopic radical prostatectomy for localized and locally advanced prostate cancer in 2022. 13 patients with insufficient data set were excluded from the analysis. Based on the preoperative complete blood count, the neutrophil-lymphocyte ratio (NLR), platelet-lymphocyte ratio (PLR) and lymphocyte-monocyte ratio (LMR) were determined. Association of this markers with unfavorable pathomorphological characteristics of the tumor, upgrading, upstaging and risk group increase after radical treatment were determined.

Results: The medians of the values of NLR, PLR and LMR were 1.67, 113.8 and 343, respectively. This medians were used as a threshold value for dividing the sample into two groups. During the analysis, it was revealed that patients with an NLR value greater than 1.67 were more likely to have locally advanced prostate cancer (pT3 and higher) after pathomorphological examination than patients with an NLR value less than 1.67 ($p=0.0241$). The value of the immunological marker PLR exceeding 113.8 is associated with more frequent detection of high-grade prostate cancer (ISUP 4-5) ($p=0.0416$). At the same time, there was no statistically significant association between NLR, PLR, LMR and an upgrading, upstaging and risk group increase, positive surgical margin, and pelvic lymph node lesion (pN1) according to the results of postoperative pathomorphological examination ($p>0.05$).

Conclusion: Markers of systematic inflammation response, such as the neutrophil-lymphocyte ratio and platelet-lymphocyte ratio, play a prognostic role in prostate cancer patients and are associated with a more aggressive course of the disease, specifically with presence of locally advanced disease, low differentiation of adenocarcinoma.

Biography

Dr. Sergey Reva is an oncologist and urologist specializing in urooncological disease research and outbreak response. He holds a PhD in Oncology from N.N.Petrov Research Institute of Oncology. The main scientific topic of work are prostate and bladder cancer. Professional affiliations: European association of urology, Société Internationale d'Urologie, American Urological Association. Sergey Reva has more than 20 publications in peer-reviewed journals (in English). He is currently chairman of the Urooncological Department, Pavlov First Saint Petersburg State Medical University, Saint-Petersburg, Russia.

Sergey Suchkov[1*]; Arturo Solis Herrera[2]; Hiroyuki Abe[3]; David Smith[4]; Shawn Murphy[5]; William Thilly[6]

[1]National Center for Human Photosynthesis, Aguascalientes, México, and New York Academy of Sciences, USA

[2]National Center for Human Photosynthesis, Aguascalientes, México

[3]ISPM and Abe Cancer Clinic, Tokyo, Japan

[4]Center for Cancer Genomics, Mayo Clinic, Rochester, MN, USA

[5]MGH and Harvard Medical |School, Boston, MA, USA

[6]MIT, Cambridge, MA, USA

Personalized and Precision Oncology (PPO) to be set up via precision oncology strategy for cancer care team: Developing targeted cancer therapy & advancing personalized cancer care

A new systems approach to diseased states and wellness result in a new branch in the healthcare services, namely, personalized and precision medicine (PPM). The concept of PPM is becoming increasingly relevant for cancer treatment, moving from the 'one-size-fits-all' standard therapy to a more personalized scheme guided by molecular diagnostics.

A comprehensive molecular tumor analysis integrating a combination of NGS methods offers the best chance for personalizing cancer care, enlarging the scope of therapy choices and offering potential new options for challenging cases, for instance metastatic tumors, rare cancer types, and cancers of unknown primary. Cutting-edge bioinformatics pipelines integrate the multiple data levels to construct Big Data and Data Sets and to generate a personalized tumor report. Though the panel approach helps to orientate therapy choices for particular cancer types, many "hard to treat" tumors remain in need of more effective diagnostic solutions.

A consolidated team of molecular pathologists, IT experts and cancer practitioners of the next step generation are becoming to play a crucial role in developing and implementing OMICS-based profiling tests in practice and communicate the results and their relevance with clinicians. Such approach is considered to be of utmost importance for successfully translating the latest advancements into a benefit to patients, illustrating a generation of the "next-generation cancer pathologists, cancer-related practitioners and oncologists globally".

Along with the above-mentioned, theranostics is an innovative concept of personalized therapy that focuses on both the accurate selection of patients and providing them with targeted radioligand cancer therapy to improve their prognosis. As you see, the integrated value chain of PPM-related oncology tools equips theranostics programs with state-of-the-art solutions at every step of the theranostics care pathway.

PPM has the potential to tailor therapy towards the oncogenic drivers of the tumor and modulate the tumor immune environment, whilst aiming to optimize tumor response and thereby taking into account the therapy-induced toxicities for each specific patient. PPM-related cancer practice (Personalized and

Precision Oncology/PPO) is guided by the specific biology of each patient's cancer – the type and subtype of the cancer, its set of genetic abnormalities, its vulnerability to certain therapies, including immunotherapy, and the patient's overall health. Today, cancer-fighting drugs of the next step generation enable doctors to strike at cancer's fundamental roots in the human genome, whilst using targeted therapies engineered to attack tumor cells with specific abnormalities, while leaving normal cells largely unharmed. Some agents are designed to strike directly at cells with specific genetic changes that drive tumors' development and survival, or to inhibit overactive signaling pathways that allow cancer cells to grow and divide uncontrollably.

The latter means that we are entering an era of rapidly evolving transformation in cancer research as it relates to medical practice, and a shifting paradigm of standardized health care in which detailed molecular information regarding a patient’s cancer is being used for PPM-related treatments. Taking into account the presence of different genetic changes in cancer patients or pre-cancer persons-at-risk, we would aim at making the need for PPO much greater to get the cancer patients cured! In this context, functioning approach named Cancer Care Team or Trans-Disciplinary Care Team, clinical practice and process, evidence-based decision-making, and smart targeted therapies are becoming crucial! The latter integrates multidisciplinary experts and develops real-time therapeutic strategy based on clinical phenomes and translational genomics and related OMICS technologies. That approach provides comprehensive, whole-process, and personalized diagnosis and treatment services for patients with complex cancer or complex drug resistance progression; provides guidance for further adjustment of drug use; and establishes a multidisciplinary cooperative team, improves the quality of clinical diagnosis and treatment, and optimizes the process of medical services.

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 was awarded with MD. In 1985, Suchkov maintained his PhD as a PhD student of Sechenov University and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia. From 1989 through 1995, 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.

At present, Dr Sergey Suchkov, MD, PhD, is:

- Vice-Director for Research and Development of the National Center for Human Photosynthesis, Aguascalientes, México
- Member of the
- New York Academy of Sciences, USA Russian Academy of Natural Sciences, Russia
- 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

Shadma Fatima[1,2,3*]; Kasuni Gamage[4]; Shruthy Shanmugan[4]; Mila Sajinovic[1]; Meena Mikhael[5]; David Harman[4]; Paul de Souza[2,6]; Kieran F. Scott[2]

[1]School of Medicine, Western Sydney University, Campbelltown, NSW 2560

[2]Ingham Institute of Applied Medical Research, Liverpool, NSW 2172.

[3]School of BABS, UNSW, Randwick NSW

[4]School of Science, Western Sydney University, Campbelltown, NSW 2560

[5]Mass spectrometry facility, Western Sydney University, Campbelltown, NSW NSW 2560

[6]Nepean Clinical School, Faculty of Medicine and Health, University of Sydney, Kingswood NSW, Australia

Targeting glioblastoma multiforme through a multifaceted therapeutic drug approach

Being the most aggressive primary brain tumor in adults Glioblastoma multiforme (GBM) represents a formidable challenge for clinicians. Despite multifaceted treatment strategy encompassing surgical intervention, radiation therapy, and chemotherapy, the prognosis for GBM patients remains dismal, with a median survival of just 14.6 months. Temozolomide (TMZ), the standard chemotherapy followed by bevacizumab, offers only a marginal improvement, extending median survival by a mere 2.5 months. It's evident that more effective treatments for GBM are urgently required. In a recent breakthrough, one of our novel cyclic peptide, has shown remarkable promise. By selectively inhibiting the activity of sPLA2IIA an inflammatory phospholipase enzyme, our drug can significantly inhibit GBM cell proliferation at higher efficacy compared to TMZ (in multiple GBM cell lines including T98G cell line resistant to TMZ therapy. Our drug surpassed TMZ in inhibiting the growth of our 3D GBM tumoroids, which further supports the potential of our drug to inhibit tumour growth compared to TMZ. Importantly our drug is shown to reach rodent brain post oral and intraperitoneal administration of our-drug confirming its ability to cross blood brain barrier. Importantly our drug is found to be more potent than TMZ in inhibiting wound healing of GBM cell lines suggesting its role in inhibiting cell migration and thus metastases. Further to dissect the mechanism of its action as an anti-GBM candidate we performed a high throughput proteomic analysis of GBM cell lines treated with our drug, TMZ and placebo. We have identified 2673 proteins in total in which 43 were significantly down regulated and 103 are significantly upregulated when GBM cells treated with our drug candidate. All together, these proteins regulate a diversity of cancer-related signalling networks and cellular functions This work represents a promising development in the field of GBM therapeutics.

Biography

Dr. Shadma Fatima is a molecular biologist specializing in precision medicine, immunology, and bioinformatics, with expertise in omics-driven cancer biomarker and drug discovery. Earning her Ph.D. from Monash University in 2017, she pioneered discoveries on BRAP2 and Imp13 in mammalian development. She leads the world's first study on Secretory Phospholipase A2 in brain cancer, developing novel drugs and diagnostics that outperform standard treatments. Her innovations span glioblastoma, prostate cancer, and COVID-19 therapies. Recognized with multiple awards, Dr. Fatima is a published researcher, educator, and mentor, driving interdisciplinary collaborations to advance targeted therapies and non-invasive diagnostics in oncology and beyond. Her research has attracted over $1.7M across academic research and industry-based project grants. She has co-authored more than 25 publications in prestigious venues—e.g., Briefing in Bioinformatics (IF: 13.99), Cancers (IF 6.69), FASEB (IF: 5.834), Nature Sc Reports (IF: 4.996) Frontiers in nutrition (IF 7.8) demonstrating her research impact, leadership, and substantive contribution in advancement of research.

S. B. Bodis

University Zurich, Zurich, Switzerland; Zurich University, Zurich, Switzerland

An eternal moment (A patient's feedback to medical care givers)

Purpose/Objective(s): Narrative Oncology can describe relevant components of a patient and health care staff interaction in a complimentary way. Fictitious microstories can provide such critical information in a concise way and respect the anonymity both of health care staff and patient.

Materials/Methods: Narrative writing can enhance the scientific, clinical and emotional aspects and the perception of the relationship between patients and health care providers. Microstories as a short fictional composition that integrate thought-provoking characters in a well-developed plot can illustrate interactions of patients and health care staff in critical moments of life and death. These fictional ultra-short compositions do not expose any confidential patient information to a public audience. And they can, in an anonymous and precise manner, describe messages relevant for continuously improving both clinical and supportive care to our patients.

Results: Microstory Title: The last treatment delivered today, Eight steps, four eyes, two hands, one hug, An eternal moment, The radiation treatment is over - for both, Hand in hand, out of the bunker, out of the hospital, Into the blue sky, Time to go home Together.

Conclusion: This is just one example of a fictitious microstory based on a real patients experience. Concise and empathic narrative oncology should be included as additional tool in the communication to our patients, to health care staff, to medical societies and to the public.

Keywords: Radiation Oncology, Molecular Radiation Biology, Oncologic Hyperthermia, Radiation Oncology Infrastructure in LMI countries.

Biography

Stephan Bodis is a US and CH Board Certified Radiation Oncologist. Education: Medical degree University of Basel, Residency in Internal Medicine (University Hospital Zurich), Research Fellowship in Hematology-Oncology at the Institute Gustave Roussy in Villejuif-Paris and a 4 year Residency in Radiation Oncology, in the Harvard Medical School Hospitals in Boston. From 1995 to 2003 he served as Staff Physician in the Radiation Oncology Depssartment, University Hospital Zurich with a Research Focus in Multidisciplinary Oncology and Clinical Radiation Biology. Then he headed the Radiation Oncology Center of the Canton Hospitals Aarau and Baden until 2021. He is a Member of the Medical Faculty of the University of Zurich since 2012. 2015 he founded the Swiss Hyperthermia Network and contributed to understanding and implementation of clinical practice in oncologic hyperthermia. He is also a member of international clinical networks to support Radiation Oncology Infrastructure and staff teaching in LMI countries. 2023 Co-founder of “medLex”, a start-up for conflict mediation in Swiss health care facilities. 2024 publication of the first fictitious booklet “momente” (“Narrative Oncology, Microstories”), published by IL-Verlag Basel, ISBN 978-3-907237-69-4.

Tanja Obradovic

Arc Nouvel LLC, Strategy Consultant, Dresher, PA, USA

Strategic development of novel cancer immunotherapies – Medical strategy toward regulatory success

Over the past decade checkpoint inhibitors directed against the programmed death ligand 1 (PD-L1) emerged as major therapeutic advance across numerous tumor indications. While immunotherapy with PD-L1 inhibitors achieved durable responses and long-term survival in many patients still substantial patient populations respond poorly or develop resistance thus triggering efforts to identify novel immunotherapies such as bi-specific antibodies, antibody drug conjugates and cell therapy as well as novel targeted therapies. To meet this medical need numerous monotherapies as well as combinations with PDL1 inhibitors are ongoing lending urgency to apply critical strategic approaches during clinical development. Presentation will focus on optimization aspects of: A) dosing schedule, B) minimization of safety risks and C) innovative end points to assure patient centric approach and drive regulatory success.

Biography

Dr. Tanja Obradovic has over 20 years of experience in Oncology pharmaceutical development. Her work encompasses all stages of clinical development and medical affairs gained from holding senior positions at Merck where she significantly contributed to Keytruda development, regulatory approvals and life cycle management across tumor types including melanoma, lung, women's cancers and many other indications for over 10 years. Most recently she was leading development of drug and cell therapies at Takeda followed by leadership in oncology strategic drug development as VP of Drug Development Services, Scientific Affairs within Medical Strategy at ICON. She is currently on Advisory Boards for several Biotech companies and Consultant at Arc Nouvel Clinical Development LLC.

Tenghua Yu

Department of Breast Surgery, Jiangxi Cancer Hospital & Institute, Nanchang, China

GPER-driven crosstalk in breast cancer: Bridging drugs resistance and tumor microenvironment remodeling

Background: Triple-negative breast cancer (TNBC) is a particularly aggressive type of breast cancer, known for its lack of effective treatments and unfavorable prognosis. The G protein-coupled estrogen receptor (GPER), a novel estrogen receptor, is linked to increased malignancy in various cancers. However, its involvement in the metabolic regulation of cancer-associated fibroblasts (CAFs), a key component in the tumor microenvironment, remains largely unexplored. This study investigates how GPER influences the metabolic interaction between CAFs and TNBC cells, aiming to identify potential therapeutic targets.

Methods: The co-culture system is performed to examine the interaction between CAFs and TNBC cells, with a focus on GPER-mediated glutamine production and release by CAFs and its subsequent uptake and utilization by TNBC cells. And the definite roles of microenvironmental GPER/cAMP/PKA/CREB signaling in regulating the expression of glutamine synthetase (GLUL) and lactate dehydrogenase B (LDHB) are further investigated.

Results: Our findings reveal that estrogen-activated GPER in CAFs significantly upregulates the expression of GLUL and LDHB, leading to increased glutamine production. This glutamine is then secreted into the extracellular matrix and absorbed by TNBC cells, enhancing their viability, motility, and chemoresistance both in vitro and in vivo. TNBC cells further metabolize the glutamine through the glutamine transporter (ASCT2) and glutaminase (GLS1) axes, which in turn promotes mitochondrial activity and tumor progression.

Conclusions: The study identifies GPER as a critical mediator of metabolic coupling between CAFs and TNBC cells, primarily through glutamine metabolism. Targeting the estrogen/GPER/glutamine signaling axis in CAFs offers a promising therapeutic strategy to inhibit TNBC progression and improve patient outcomes. This novel insight into the tumor microenvironment highlights the potential of metabolic interventions in treating TNBC.

Biography

Dr. Tenghua Yu is a clinician specializing in breast cancer research and treatment. He currently serves as Associate Chief Physician and Deputy Director of the Breast Surgery Department at Jiangxi Cancer Hospital & Institute, China. Dr. Yu earned his PHD (2013-2016) from Chongqing Medical University, China. From November 2024 to April 2025, Dr. Yu conducted advanced research at the UChicago Medical Center, USA. His research focuses on the tumor microenvironment, particularly the role of GPER in therapeutic resistance, and has authored over 30 peer-reviewed articles in international journals, including *Oncogene, Clinical and Translational Medicine, Molecular Cell Endocrinology et al.*

Venturi Sebastiano

Department of Hygiene and Public Health. AUSL-ROMAGNA, Rimini, Italy

The controversy of radioactive cesium damage on animal pancreas and diabetes

In these times of danger of severe international conflicts with fear of the use of atomic weapons and accidents in nuclear power plants, radionuclide contamination in terrestrial ecosystems has nowadays reached a dangerous level. One of the most frequent and studied artificial radionuclide is cesium (137-Cs and 134-Cs), which is on the rise in the world. This orally ingested artificial radionuclide is a serious danger that can cause, in humans and animals, through inflammatory, carcinogenic, carcinogenic, necrotic mechanisms, functional deficiency as diabetes mellitus, cancer and congenital anomalies by DNA and mitochondrial damage. The author reported autoradiographic and scintigraphic studies describing some, little-known, damage to organs of pancreas, salivary glands, colon, ovary and diabetes mellitus, whose incidence rate is gradually rising worldwide. But a controversy on tissues and organs damaged, by Low-Dose Radiations action, is frequently reported in medical literature.

Biography

Dr. Sebastiano Venturi, member of Italian Thyroid Association, studied goiter and cretinism and the action of iodine in stomach, breast, brain, skin, saliva and immunity, and more recently (2020-2025) cesium metabolism. He participated in 2007-Beijing Summit, in 2013-London Congress, where he reported "Iodine, PUFAs and Iodolipids" in J. of "Human Evolution" and in Saint Petersburg (2022) on "Cesium-137, Pancreas Cancer and Diabetes". In 1985, 1999 and 2000 he published the first studies of extra thyroid antioxidant action of iodine. In 1993, 2000-3 he reported the first reviews in medical literature on the association between iodine and stomach and breast cancers. From 2000 to 2014 he published research on iodine in evolution, where iodide constitutes the first inorganic antioxidant in a living system. In 2000-2020, Venturi published the first studies on the evolution of many dietary antioxidants in marine and terrestrial animals. In 2020-2025, he published the first correlational studies between radioactive cesium and increase of pancreatic cancer, pancreatitis, diabetes and on cesium metabolism in the human body.

Viacheslav Artyushenko
Art photonics GmbH, Berlin, Germany

Innovative fiber solutions for cancer diagnostics

The latest innovative fiber solutions to be reviewed for the advanced biomedical applications in 0.3-16µm range, including multispectral diagnostics to define tumor margins in oncology ex-vivo and in-vivo, plus tumor detection with IR-fiber and Raman endoscopy.

Biological tissue is a complex substance which characterization demands combination of several spectroscopic techniques. Spectroscopy enables real-time label-free chemical and structural evaluation of tissues and bioliquids for medical diagnostics ex-vivo in real time or in-situ and in-vivo. Fiber-optic probes provide flexible, sterilizable, and compact solutions for simultaneously analyzing tissue samples with several spectroscopic modalities. Modern fiber spectroscopy seamlessly covers entire broad wavelength range from 0.3µm to 16µm by the set of various fiber types - drawn from Silica and IR-glasses, plus Polycrystalline PIR-fibers extruded from solid solutions of AgCl:AgBr crystals for good transmission in 3-16µm range.

Here we present our latest achievements in developing multispectral compact fiber-optic probes for biomedical applications – especially focused on detection of tumor margins ex-vivo and in-vivo. To enhance sensitivity and accuracy of this definition we decided to combine four key spectroscopic modalities (NIR, MIR, Raman, and Fluorescence) in one movable complex – to be used nearby operation room. This concept enables to compare and select the best method from 4 or to combine any of them for the fusion of complimentary spectroscopy data (when needed) – up to the design of innovative multispectral fiber combi probes to allow data collection from single spot-on tissue.

In preliminary studies of clinical bio-samples, the combination of NIR diffuse reflection or MIR absorption spectroscopy with fluorescence spectroscopy gives synergy effect in differentiation of diseased (malignant) and normal tissues. In our Raman experiments, we evaluate primary signals together with fluorescence background, which helps enhance analysis accuracy. Combined with advanced chemometrics data analysis, this concept enables the development of customized spectral fiber sensors based only on several wavelengths, hence their simple design, small size, high speed, cost savings. It was revealed for use of High Wavenumber Raman and Fluorescence spectroscopy in detection of oral cancer (SCQ) that it´s possible to make rapid measurements directly in the operation theater by very using tiny (<200 µm OD) but robust single fiber disposable Raman needle probes. Our recent experiments have also shown the possibility to combine Mid-IR ATR absorption, Fluorescence and Raman spectroscopy in one compact fiber-optic probe. These advances turn fiber-optic multispectral probes into universal tools for any biomedical application requiring analysis of complex tissue.

Preliminary results on IR-imaging of tissue made with PIR-fiber catheters open the way to Mid IR-endoscopy – which will enable to detect cancer in hollow organs using its IR-emission.

Biography

Viacheslav Artyushenko was born in 1954, got his PhD in physics in 1981 – focused on his development of unique technology of Polycrystalline fibres for Mid IR-range: 3-18μm. His multiple papers & patents are devoted to specialty fibre optics and its applications for laser medicine and diagnostics, process-spectroscopy and fibre sensing. In 1998, he has founded art photonics GmbH in Berlin – one of worldwide leading manufacturers of various fibres, cables, bundles and spectroscopy probes used in broad spectral range 0.3-16μm for industrial, medical, scientific and other applications. Dr. Artyushenko & AP are members of EPIC, CPACT, SPIE, OPTICA, SPECTARIS, Optec-BB, GDCh-DECHEMA, etc.

Anselmi Relats JM; Filomatori C; De Tezanos Pinto F; Duhalde Vega M; Volpe S; Marder NM; Roguin LP; Marino VJ; Blank VC*

Universidad de Buenos Aires. Facultad de Farmacia y Bioquímica. Instituto de Química y Fisicoquímica Biológicas (UBA-CONICET). Buenos Aires, Argentina

Synergistic antitumor effects of 2NF and Safingol combination in breast cancer: Molecular mechanisms involving SPHK1, MAPKs, and ER stress

Background: The sphingosine kinase 1 (SphK1)/sphingosine-1-phosphate (S1P) axis has been widely studied in cancer research due to its role in modulating sphingolipid metabolism, which determines cell survival or death. Furthermore, SphK1 inhibitors prevent catabolism of ceramides, contributing to tumor cell death. In a previous study we demonstrated a synergistic antitumor effect in vitro and in vivo between the antitumor flavonoid 2´nitroflavone (2NF) and safingol in a murine mammary tumor model. In this work, we investigated the molecular mechanisms underlying this interaction.

Methods: Molecular docking was performed with the online docking web server SwissDock. We used LM3 murine mammary adenocarginoma cells as an HER2+ model for all in vitro experiments and HEK-293 cells for SPHK1-GFP (green fluorescent protein) transfection and translocation assays, which were evaluated by fluorescence microscopy. Protein expression and phosphorylation were determined by Western Blot and mRNA expression was examined by RT-PCR. Proliferation assays were performed employing the hexosaminidase method.

Results: Docking analysis revealed 2NF/SPHK1 interaction near Ser225, a phosphorylation site involved in SPHK1 translocation to the cell membrane. Accordingly, 2NF inhibited SPHK1 phosphorylation at Ser225. In cells transfected with SPHK1 fused to GFP, 2NF blocked the translocation of the enzyme to the cell membrane. Additionally, the combination of 2NF and safingol activated p38, JNK, and ERK MAPKs, and induced ER stress by enhancing the expression of ER stress-related genes and proteins. Pharmacological inhibition of these pathways led to reduced antiproliferative activity, indicating their involvement in the antitumor effect triggered by the combination of both drugs.

Conclusions: In summary, results suggest that synergism may arise from inhibition of SPHK1 activity by safingol through its interaction with the enzyme's active site, combined with the blockade of SPHK1 phosphorylation and translocation by 2NF, both essential steps for its catalytic activity. Furthermore, the activation of MAPKs and the induction of ER stress are critical events leading to the cell death caused by this drug combination.

Biography

Dr. Viviana C. Blank is a biochemist and researcher at the University of Buenos Aires, Argentina. She holds a Ph.D. in Biological Chemistry and is a member of CONICET's Scientific Researcher Career. Her work focuses on flavonoids and synthetic compounds with antitumor activity, particularly studying their efficacy and mechanisms of action. Dr. Blank also teaches Biological Chemistry at undergraduate and postgraduate levels at the School of Pharmacy and Biochemistry, University of Buenos Aires.

Yasmeen Idrees[1*]; Omar Alqaisi[2]; Osama Souied[3]; Maram Al-Haj[4]; Rashmi Koul[5]; Suhair Alghabeesh[6]; Drilon Bytyçi[7]; Patricia Tai[8]

[1]Fatima Jinnah Medical Universi, Lahore, Pakistan

[2]Faculty of nursing, Al-Zaytoonah University, Amman, Jordan

[3]Department of Medical Oncology, Allan Blair Cancer Center, University of Saskatchewan, 105 Administration Place, Saskatoon, SK, S7N 5A2, Canada

[4]University of Jordan, Rawhi Wellness Clinic Amman, Jordan

[5]University of Manitoba, 675 McDermot Ave, Winnipeg, MB, R3E 0V9, Canada

[6]Faculty of Nursing Al-Zaytoonah University of Jordan Amman-Jordan

[7]Faculty of Medicine, University of Prishtina, Kosovo

[8]Department of Radiation Oncology, University of Saskatchewan, Saskatoon, SK, Canada

Beyond Relief: Updates on opioid use disorder in cancer patients – A narrative review by experts

Background: Opioids are central to cancer pain management due to their potent analgesic effects. However, Opioid Use Disorder (OUD) is a growing concern, especially with rising cancer survival rates leading to more patients experiencing chronic pain. Opioid misuse may begin before diagnosis or during/after treatment, affecting patients and society.

Methods: A comprehensive literature review was performed using databases including PubMed, Medline, Scopus, ScienceDirect, and EBSCO to evaluate OUD prevalence and risk factors in oncology. Zoom meetings were held with a multidisciplinary team—including medical and radiation oncologists, an internist, a pharmacist, and nursing staff—to prepare this narrative review.

Findings: Nineteen percent of patients develop Nonmedical Opioid Use (NMOU) within eight weeks of initiation. Abnormal behaviors include altering dosage or administration routes. Pain guidelines, like the World Health Organization (WHO) stepladder, often overlook cancer-related pathophysiology, reinforcing the need for thorough pain assessments.

Prolonged opioid use is linked to immunosuppression and possibly increased cancer risk. Excessive use may impair bowel function, cognition, breathing, and physical activity, potentially leading to fatal overdose. Stigma also influences patient decisions on pain control.
Key contributors to OUD include pre-diagnosis opioid use and genetic predisposition, which may account for 50% of addiction risk. Recommendations for prevention strategies include:

- Using the Opioid Risk Assessment Tool
- Patient education and prescription monitoring
- Starting with non-opioid therapies like Cognitive Behavioral Therapy (CBT), physiotherapy, relaxation techniques, radiotherapy, and acupuncture

- Exploring newer options such as Suzetrigine (approved in the United States in January 2025), antispasmodics, non-steroidal anti-inflammatory drugs, neuroleptics, cannabinoids, immunotherapy, and other active treatments targeting the underlying cancer.
- Tailoring narcotics to individual needs.

Conclusion: Comprehensive pain evaluation and early adoption of multimodal interventions are critical to minimize opioid dependence. Future research should explore gene-targeted pain relief, refine risk prediction, and clarify long-term opioid impact in oncology.

Biography

Dr. Yasmeen Idrees is a medical graduate of Fatima Jinnah Medical University Lahore, Pakistan. Following her graduation, she pursued postgraduate training in General Internal Medicine and completed MRCP (UK) as her postgraduate qualification. She is keen to explore research in the medical field and collaborated with Professor Patricia Tai in Canada for the same.

Yasmeen Idrees[1*]; Patricia Tai[2]; Mohammed Dibas[3]; Lorent Sijarina[4]; Melisa Stublla[4]; Omar Al-Qaisi[5]

[1] Lifecare Hospital Lahore, Bahria, Lahore, Pakistan

[2]University of Saskatchewan, Saskatoon, Canada

[3]An-Najah National University, Nablus, Palestine

[4] University of Prishtina, Prishtina, Kosovo

[5]Al-Zaytoonah University, Airport Street, Amman, Jordan

Improving survival rates of glioma patients in developing countries

Background: Gliomas represent one of the most challenging brain malignancies with historically poor survival outcomes, particularly in developing countries where healthcare infrastructure limitations significantly impact patient care and treatment accessibility. Our objective is to identify evidence-based strategies that developing countries can implement to improve survival rates and clinical outcomes for glioma patients through systematic review of current literature and best practices.

Methods: A comprehensive literature search was conducted covering publications from 2000 to 2025, focusing on glioma management strategies, treatment protocols, and healthcare system improvements in resource-limited settings.

Results: Our analysis identified a multifaceted approach to improve glioma survival rates encompassing five key domains: (1) **diagnostic and treatment infrastructure** - expanding access to magnetic resonance imaging (MRI, especially functional MRI) and computerized tomography (CT) imaging for early accurate diagnosis, establishing molecular pathology laboratories for isocitrate dehydrogenase (IDH) mutation and 1p/19q co-deletion testing, and improving neurosurgical capacity through specialist training and advanced surgical equipment; (2) **treatment protocol standardization** - adopting global best practices such as National Comprehensive Cancer Network (NCCN) guidelines recommending maximal safe resection followed by chemoradiation, introducing targeted therapies including temozolomide and bevacizumab, and supporting clinical trials for emerging therapies; (3) **research and data infrastructure** - creating national glioma registries for outcome tracking and establishing academic partnerships with international research institutions; registries should be timely, accurate and complete to be useful for research and inform healthcare professional to make decision regarding which areas to channel the scares healthcare resources. (4) **professional and public awareness** - training general practitioners for early symptom recognition for example with continuous medical education courses and online webinars and implementing awareness campaigns to reduce stigma; (5) **access and affordability** - subsidizing treatment costs through public health programs and expanding telemedicine services for underserved populations.

Conclusions: Implementation of these integrated multidisciplinary strategies can significantly improve glioma outcomes in developing countries, enabling alignment with global treatment standards and ultimately enhancing patient survival rates through comprehensive healthcare system strengthening.

Keywords: Glioma, Developing countries, Survival rates, Healthcare infrastructure, Treatment protocols, Oncology nursing.

Biography

Dr. Yasmeen Idrees is a medical graduate of Fatima Jinnah Medical University Lahore, Pakistan. Following her graduation, she pursued postgraduate training in General Internal Medicine and completed MRCP (UK) as her postgraduate qualification. She is keen to explore research in medical field and collaborated with Professor Patricia Tai in Canada for the same.

Weihui Zheng[1*]; Chun Liu[2]; Jianqiang Zhao[1]; Ming Zhao[1]; Fan Chen[2]; Jinbiao Shang[1]; Kejing Wang[1]; Peng Guo[2]; Xiangdong Cheng[2]

[1]Thyroid Cancer Surgy Department of Zhejiang Province, Zhejiang Cancer Hospital, Hangzhou, Zhejiang 310022, China

[2]Hangzhou Institute of Medicine (HIM) Chinese Academy of Sciences Hangzhou, Zhejiang 310018, China

Preclinical study on new parathyroid recognition technology in thyroid surgery

Background: The parathyroid gland is the smallest organ in the organism, with an important function of regulating blood calcium in the human body. The accidental resection of the parathyroid gland during thyroid surgery cannot be ignored, so attention should be paid to the identification of the parathyroid gland.

Methods: 1. Iron oxide nanoparticles were locally injected into the thyroid gland. Since iron oxide nanoparticles are black, they can stain the thyroid gland and lymph nodes black, while the parathyroid gland is not stained, thus achieving negative imaging of the parathyroid gland.

2. Antibody-coupled fluorescence technology was applied. A fluorescent probe was prepared by linking fluorescence to the calcium-sensing receptor, which was then injected intravenously. The parathyroid gland specifically expresses the calcium-sensing receptor; through antigen-antibody binding, the fluorescence is delivered to the parathyroid gland, realizing positive imaging of the parathyroid gland.

Results: Iron oxide nanoparticles could achieve negative imaging of the parathyroid gland in rat and New Zealand rabbit models with little surrounding contamination. In the rat model, positive imaging of the parathyroid gland was observed using the calcium-sensing receptor-linked fluorescence.

Conclusion: The negative and positive imaging technologies for the parathyroid gland play a role in identifying the parathyroid gland during thyroid surgery and are worthy of further clinical research.

Biography

Zheng Weihui is a clinical doctor who has long been engaged in thyroid surgery. She holds a Doctor of Medicine degree, has completed postdoctoral research, and serves as a master's supervisor and a specially-appointed associate researcher. She is a young health talent in Zhejiang Province and a visiting scholar at A-Star (Agency for Science, Technology and Research) in Singapore. Specializing in surgeries of the thyroid and parathyroid glands, she is committed to solving practical problems related to surgery, with a focus on the intraoperative protection of the recurrent laryngeal nerve and research on parathyroid identification.

BOOK OF ABSTRACTS

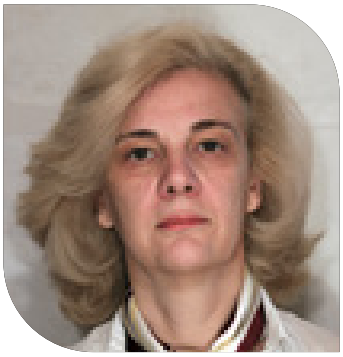
MATHEWS
CONNECTING RESEARCH

INTERNATIONAL CONFERENCE ON

CANCER SCIENCE AND RESEARCH

17-19
NOVEMBER

POSTER SESSIONS



Iliev Ivan[1]; Yancheva Denica[2]; Mavrova Anelia[3]; Nesheva Aleksandrina[4]; Semkova Severina[4]; Staneva Galya[4]; Nikolova Biliana[4*]

[1]Institute of Experimental Morphology, Pathology and Anthropology with Museum, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., bl. 25, 1113 Sofia, Bulgaria

[2]Institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., bl. 9, 1113 Sofia, Bulgaria

[3]Department of Organic Chemistry, Faculty of Chemical Technologies, University of Chemical Technology and Metallurgy, S8 Kliment Ohridski Blvd., 1756 Sofia, Bulgaria

[4]Institute of Biophysics and Biomedical Engineering, Bulgarian Academy of Sciences, Acad. G. Bonchev Str., bl. 21, 1113 Sofia, Bulgaria

Targeting oral squamous cell carcinoma with thienopyrimidines

Oral squamous cell carcinoma (OSCC) is among the most aggressive and lethal cancers of the head and neck, often diagnosed at an advanced stage and marked by treatment resistance. In search of selective anticancer agents, we evaluated a series of 2-substituted 4-amino-thieno[2,3-d]pyrimidines—originally synthesized as DPP-4 inhibitors—for their cytotoxic potential against oral cancer.

The compounds (1–7) were tested against SCC-9 and HSC-3 human oral cancer cell lines, and HaCaT normal keratinocytes, using the MTT assay. Selectivity index (SI) was calculated to assess discrimination between malignant and non-malignant cells. Additionally, FACS analyses, colony forming assay, cell migration and cytoskeleton staining were performed.

Compound 6 showed the highest selectivity toward both SCC-9 (SI = 22.3) and HSC-3 (SI = 6.4), indicating strong anticancer potential. Compound 4 also exhibited notable selectivity for SCC-9 (SI = 12.8). Compound 5 displayed moderate selectivity, comparable to doxorubicin. In contrast, compounds 1 and 2 showed low SI values (<3), while compounds 3 and 7 demonstrated moderate selectivity.

These findings support the further development of compound 6, and potentially compound 4, as promising leads for selective oral cancer therapeutics, particularly due to their ability to discriminate between malignant and non-malignant cells. Further studies are underway to elucidate their mechanism of action and optimize anticancer potency.

Acknowledgments: This study was partially supported by the following grants: COST Action CA21140 INTERCEPTOR, KP-06-COST/30. Bulgarian Ministry of Education and Science for support: Scientific Infrastructure on Cell Technologies in Biomedicine (SICTB) D01-361/2023 and National Center for Biomedical Photonics D01-352/2023, part of the Bulgarian National Roadmap for Scientific Infrastructures 2020–2027. A.N. thanks the Bulgarian Ministry of Education and Science, National Research Program “Young scientists and postdoctoral students-2”, Module “Young scientists”, for financial support on her project entitled “Interaction of conventional cytostatics with selected plant extracts on breast cancer models”.

Biography

Prof. Biliana Nikolova is an expert in biomedical biophysics, specializing in the effects of electric fields on biological systems. She holds a Ph.D. in Biophysics from the Bulgarian Academy of Sciences and is based at the Institute of Biophysics and Biomedical Engineering (IBPhBME), where she heads the Department of Electroinduced and Adhesive Properties. Her research combines biophysical techniques—such as patch clamp, FACS, and fluorescence microscopy—with nanomedicine, electrotherapy, and biopolymer pharmacology, focusing on anticancer applications and tissue engineering. Prof. Nikolova's work bridges basic science and translational research, contributing significantly to the fields of medical biophysics and bioengineering.

Cheol Min Lee[1*]; Hye In Lee[2]

[1]Department of Family Medicine, Seoul National University Hospital Healthcare System, Gangnam Center, Seoul

[2]Division of Healthcare Research, National Evidence-based Healthcare Collaborating Agency, Seoul

Effectiveness of smoking cessation interventions for smokers undergoing lung cancer screening: A systematic review and meta-analysis

Background: Smoking is the leading cause of lung cancer, and smoking cessation is crucial for reducing both the lung cancer incidence and mortality. We aimed to assess the effectiveness of smoking cessation interventions in smokers undergoing lung cancer screening (LDCT).

Methods: Two independent researchers conducted a systematic search and selection process for primary studies in September 2023, 10 RCTs (reported across 12 publications) were selected.

Results: Pooled analysis of 9 studies showed no statistically significant difference in smoking cessation rates of 3 months or longer between the intervention group and the control group receiving minimal or usual care (RR, 1.56; 95% CI, 0.90–2.69). In a cluster RCT by Foley et al. (2023), the odds ratio (OR) also indicated no significant difference between groups (OR, 0.97; 95% CI, 0.65–1.45). In subgroup analyses, smoking cessation interventions that included pharmacotherapy demonstrated significantly higher cessation success compared to controls (RR, 2.41; 95% CI, 1.32–4.39). Similarly, interventions classified as intensive smoking cessation treatments also showed significantly greater quit rates than less intensive or usual care interventions (RR, 2.00; 95% CI, 1.20–3.34). Serious adverse events did not differ significantly between groups in the single study that reported them (RR, 0.93; 95% CI, 0.63–1.36).

Conclusion: Active smoking cessation counseling and pharmacotherapy for smokers undergoing lung cancer screening is strongly recommended to current smokers undergoing LDCT screening test.

Funding: National Evidence-based Healthcare Collaborating Agency (NECA-A-23-013, NECA-A-24-002).

Biography

Cheol Min Lee completed his undergraduate education at the College of Medicine, Seoul National University in Seoul, Korea. He went on to pursue graduate studies in the Department of Public Health and Management at The Graduate School of Seoul National University. Further advancing his academic career, he earned a PhD from the Department of Medicine (Family Medicine) at the same university. Currently, he serves as a professor in the Department of Family Medicine at the Seoul National University Hospital Healthcare System Gangnam Center.

Chia-Jung Li[1*]; Yen-Dun Tony Tzeng[2]; Yu-Ting Kang[3]; Tzu-Hung Hsiao[3]

[1]Department of Obstetrics and Gynecology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan

[2]Department of Surgery, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan

[3]Department of Medical Research, Taichung Veterans General Hospital, Taichung, Taiwan

Functional integration of the ATP synthasome drives mitochondrial efficiency in breast carcinoma

Background: This study investigates the metabolic alterations associated with breast cancer progression and elucidates the underlying mechanisms. Adenine nucleotide translocase 2 (ANT2), a mitochondrial protein essential for cellular energy metabolism, facilitates the exchange of ADP and ATP across the inner mitochondrial membrane. The role of ANT2, particularly its interaction with the ATP synthasome, in breast cancer metastasis remains poorly understood.

Methods: We analyzed ANT2 in breast cancer using genetic and clinical methods, validating its expression in human tissues. Gene enrichment studies and functional assays assessed ANT2's role in mitochondrial function and cancer metabolism. Knockdown experiments and pharmacogenomic screening evaluated ANT2's impact on metastasis and identified potential inhibitors in 3D cultures and orthotopic mouse models.

Results: ANT2 was significantly overexpressed in metastatic breast cancer, correlating with reduced survival. Knockdown of ANT2 impaired cell migration and invasion, reduced ATP production, and diminished oxidative phosphorylation (OXPHOS) activity in MCF7-F4 cells. *In vivo,* siRNA-mediated ANT2 silencing in JC-M3 cells decreased tumor growth and lung metastases in mice. Pharmacogenomic analysis identified cymarin as an ANT2 inhibitor, reducing spheroid formation in 3D cultures and tumor burden *in vivo*, alongside downregulation of epithelial-to-mesenchymal transition (EMT) and OXPHOS markers. ANT2 colocalized with ATP5B, forming an ATP synthasome that enhanced energy flux in hyperinvasive cells.

Conclusions: ANT2 drives breast cancer metastasis by enhancing mitochondrial energy production via the ATP synthasome. Its inhibition, particularly with cymarin, disrupts tumor bioenergetics and metastatic potential, positioning ANT2 as a promising therapeutic target.

Biography

Professor Chia-Jung Li conducts research on mitochondrial dysfunction in cancer biology and age-related diseases. Her work focuses on mitochondrial metabolism, dynamics, and cell death regulation, aiming to uncover how these processes drive tumor progression and degeneration. She employs multi-omics, imaging, and disease models to identify therapeutic targets in mitochondrial signaling. With 127 SCI-indexed publications, her studies span basic mechanisms to translational applications, contributing to the development of innovative treatments targeting mitochondrial vulnerabilities in oncology and regenerative medicine.

Chaolei Zhang; Jianghao Ren*; Liping Cao; Shengnan Jia

Department of General Surgery, Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University, No. 3, Qingchun Road, Hangzhou, China

Targeting SIRT7-mediated DNA damage repair as a novel strategy in pancreatic cancer

Background: Pancreatic cancer is a highly lethal malignancy characterized by poor prognosis and limited therapeutic options. Recent evidence suggests that Sirtuin 7 (SIRT7), a nucleolar NAD^+-dependent deacetylase, plays an oncogenic role in multiple cancers; however, its precise function and therapeutic relevance in pancreatic cancer remain insufficiently explored.

Methods: We integrated public datasets and clinical samples to examine SIRT7 expression and prognosis in pancreatic cancer. Gain- and loss-of-function assays in vitro and in vivo were conducted to assess its biological role. DNA damage repair kinetics, homologous recombination (HR) reporter assays, and RAD51 expression analyses were employed to delineate the mechanistic link between SIRT7 and DNA damage response (DDR). Furthermore, structure-based virtual screening, molecular docking, and dynamics simulations were performed to identify and prioritize candidate SIRT7 inhibitors, which were subsequently validated by biochemical and functional assays.

Results: SIRT7 was markedly overexpressed in pancreatic cancer tissues and cell lines, with high expression significantly associated with adverse prognosis. Functionally, SIRT7 enhanced tumor proliferation both in vitro and in vivo by facilitating HR-mediated DNA damage repair. Mechanistically, SIRT7 promoted RAD51 accumulation and accelerated DDR kinetics, whereas SIRT7 depletion impaired repair efficiency and increased DNA damage sensitivity. Virtual screening identified HIT213729655 as a potent candidate inhibitor with favorable pharmacological properties. HIT213729655 demonstrated high-affinity binding to the active site of SIRT7, confirmed by molecular dynamics simulations and Cellular Thermal Shift Assays. Functionally, it suppressed SIRT7-dependent HR repair, induced sustained DNA damage, and exerted strong cytotoxic effects in pancreatic cancer cells, surpassing existing SIRT7 inhibitors.

Conclusions: Our findings establish SIRT7 as a critical driver of pancreatic carcinogenesis through enhancement of HR-mediated DNA repair. We identify HIT213729655 as a selective and efficacious SIRT7 inhibitor, offering a promising therapeutic strategy to overcome chemoresistance in pancreatic cancer.

Biography

Jianghao Ren is a Ph.D. candidate specializing in pancreatic cancer research. His work focuses on the molecular mechanisms of tumor progression, particularly the role of DNA damage repair pathways in carcinogenesis and therapeutic resistance. He has conducted studies integrating bioinformatics, cellular models, and in vivo experiments to investigate novel oncogenic drivers and therapeutic targets. His recent research highlights the oncogenic function of SIRT7 in pancreatic cancer and explores its therapeutic potential through selective inhibition, aiming to provide a foundation for new strategies against this lethal malignancy.

Saby George[1]; Michael Spino[1]; Guillermo de Velasco[2]; Georgios Lazaridis[3]; Stella Gkogkou[3]; Anastasia Tsiviki[3]; Roxana Dronca[4]; Andrea Lorden[5]; Andrew Descoteaux[5]; Ariel Berger[5]; Karishma Shelley[6*]; Sweta Patel[6]

[1]Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA

[2]University Hospital 12 de Octubre, Instituto de Investigación (imas12), Madrid, Spain

[3]Aristotle University of Thessaloniki - School of Medicine, Thessaloniki, Greece

[4]Mayo Clinic Comprehensive Cancer Center - Florida, Jacksonville, FL, USA

[5]Thermo Fisher Scientific, Waltham, MA, USA

[6]Bristol Myers Squibb, Princeton, NJ, USA

Time and cost to healthcare providers and sites associated with preparation and administration of subcutaneous vs intravenous nivolumab for the treatment of cancer: A time-driven activity-based costing study

Background: Subcutaneous (SC) administration of oncology therapies offers increased convenience for patients and healthcare providers (HCPs) and reduced administration costs when compared with intravenous (IV) delivery. SC nivolumab (NIVO), in combination with hyaluronidase-nvhy (NIVO + hyal SC), demonstrated noninferiority to NIVO IV in key efficacy and pharmacokinetic outcomes along with a comparable safety profile in the CheckMate 67T trial. To understand the potential impact of NIVO + hyal SC on clinical practice, we evaluated time and resource utilization, along with corresponding costs, associated with administration of NIVO IV vs NIVO + hyal SC as treatment for previously approved adult solid tumors.

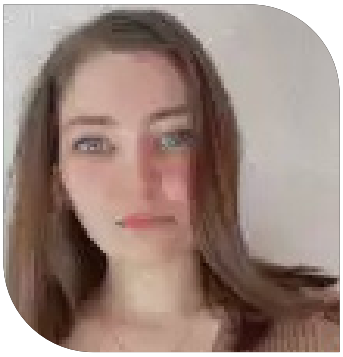
Methods: Time-driven activity-based costing methods were used to examine time and costs associated with constituting and administering a dose of NIVO + hyal SC vs NIVO IV. Process maps and corresponding resources (ie, equipment, medications, personnel, physical plant) per administration were estimated by a modified Delphi panel of experienced healthcare providers (4 oncologists, 2 pharmacists, 1 nurse) proficient with both administration types of NIVO. All estimates were consensus-driven; associated unit costs were derived from publicly available US sources and expressed in 2025 US dollars.

Results: HCPs reported that preparation and administration of NIVO IV required21.0 (range, 15.0–27.0) minutes and 69.5 (53.0–93.0) minutes, respectively, for a total of 90.5 (68.0–120.0) minutes. In contrast, NIVO + hyal SC required 19.0 (range, 14.0–24.0) minutes and 14.3 (11.3–15.3) minutes, respectively, for a total of 33.3 (25.3–39.3) minutes. NIVO + hyal SC reduced NIVO IV preparation and administration times by 63.2% (range, 62.8%–67.3%), which resulted in a reduced patient visit burden of 57.2 (42.7–80.7) minutes. Time savings were driven by reductions in nursing time by 46.9%, medical assistant time by 68.8%, and pharmacy/tech time by 9.5%. Acquisition costs of NIVO were the same for both formulations. Collectively, costs associated with all other resources required to prepare and administer NIVO IV were $95 (range, $70–$115) and $41 ($28–$49), respectively, for a total of $135 ($98–$164). Corresponding total costs for NIVO + hyal SC were $92 (range, $71–$109), $20 ($15–$21), and $112 ($86–$130), respectively. Accordingly, NIVO + hyal SC was expected to reduce costs of preparation and administration by 17%. Cost differences were primarily attributable to reduced time requirements for HCPs—specifically, pharmacists and nurses.

Conclusions: Findings suggest that use of NIVO + hyal SC reduces time and cost required from HCPs to prepare and administer therapeutic doses vs NIVO IV, thus increasing efficiency of care for both HCPs and patients. Such efficiencies could yield substantial and meaningful cumulative time and cost savings at both the patient and institutional levels.

Biography

Karishma Shelley is the director of Global Health Economics and Outcomes Research at Bristol Myers Squibb, driving evidence generation and value demonstration to inform payer and provider decision making. She leads strategic pan-tumor initiatives focused on demonstrating clinical and economic value across oncology. A pharmacist by training, Karishma holds a master's degree in applied health economics and outcomes research from Thomas Jefferson University.



NABHAN Linda

OncopsyHeart Mindcare collective, Europe

Cardiac coherence: A new approach to oncology medicine

In the oncology clinic, the issue of anguish, stress and anxiety is a very important part of treatment. These affects can also condition the outcome of treatment, as well as patients' experiences of their disease. Cancer has specific psychological repercussions compared with other illnesses that do not call so deeply on the subject's being. How can we deal with anxiety other than by taking medication? From patients who have never used anxiolytics or antidepressants to those who are wary of them, the powerlessness in the face of such intimate and intrinsic suffering is being felt. Indeed, anxiety is at the heart of the patient's history. Not everyone experiences anxiety in the same way, or for the same reasons. On the one hand, it is a question of identifying these types of feelings and then trying to understand the ins and outs of them. There's something quite special about psychological suffering: it can't be understood. In other words, there is an inability to share feelings with others that plunges the subject into this distress. Welcoming people with words is our first line of approach to this suffering, but how can we really act? This is where the relevance of cardiac coherence comes in. Cardiac coherence is a method of refocusing the subject which has a dual effect on the nervous system by activating breathing, and which in turn has an impact on the psyche.

What was interesting to observe was that, in reality, once in a state of anxiety, the emergency having been declared, it is extremely difficult to act on these moments when the patient is in a state of total feeling and is only trying not to drown in his thoughts and feelings. Introducing cardiac coherence into the world of oncology makes it possible to provide a method of preparing for the onset of anxiety. It is very complicated to anticipate anxiety and sometimes impossible to detect its triggers, but training your mind and spirit to react to the micro-signs that herald an emotional catastrophe is essential, all the more so in oncology medicine where the body is bruised.

What we have observed is linked to the person's basic level of stress. Is there a mental invasion, a cognitive disorder or even a difficulty in concentrating on myself that prevents access to the full potential of this method? As well as praising this technique, which has proved its worth, it sometimes gives an indication of a person's emotional and psychic interiority. It is by working in combination with psychotherapy that real, effective care can be provided in an oncology medicine that aims to be closer to humanity.

Biography

Nabhan Linda is a clinical psychologist specialising in oncology. She has worked with a large number of psychiatric patients in hospital, then oncology patients in adult wards, before developing her private practice. A cardiac coherence practitioner and founder of the OncopsyHeart Mindcare collective, she continues to develop her practice and her knowledge through numerous articles on oncology medicine.

BOOK OF ABSTRACTS

Thank You for Being a Part of Cancer 2025!

We extend our sincere appreciation to all speakers, listeners and partners who made this conference a success. Your active participation and commitment to advancing cancer research and care are truly inspiring.

"Together, we move one step closer to a cancer-free world."
– Organizing Committee
Mathews International Conferences

Stay Connected for the Next Edition

2nd Edition of
International Cancer and Precision Oncology Conference
November 16-18, 2026 | Singapore

Interested in participating as a speaker or listener?

Contact us at cancer@mathewsconference.com

Phone: +1 (312) 462-4448 | Whatsapp: +1 (424) 377 0967