

9th Edition of
International Conference on

Clinical & Translational Oncology

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OCTOBER, 2026 JAPAN

"From Prevention to Survivorship: A **Cancer** Care Continuum"

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9TH EDITION OF

International Conference on

CLINICAL AND TRANSLATIONAL ONCOLOGY

HYBRID EVENT

08-10
OCTOBER 2026

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Keynote Speakers



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University of Crete, Greece



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Manmohan Agrawal

Pushpadi Cancer Care Centre, India



Michael Thompson

University of Toronto, Canada



**Mostafa Mesbah
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Gaza Oncology Center, Israel



Paulo Cesar De Moraes

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Keynote Speakers



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Asutosh College, India



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National Hospital Organization Shizuoka
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Thomas J Webster

Brown University, United States



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NYP- Meyer Cancer Center, United States

Welcome Message



Michael Thompson

University of Toronto, Canada

On behalf of the Scientific Committee, I take great pleasure in welcoming you to The **9th Edition of International Conference on Clinical & Translational Oncology (ICTO 2026)** will be held from **October 8-10, 2026**, in **Tokyo, Japan**, which is being held with both in-person and virtual participation. Under the theme ***“From Prevention to Survivorship: A Cancer Care Continuum”***, the conference provides an unparalleled platform for collaboration, knowledge exchange, and showcasing the latest advancements in oncology. Leading oncologists, researchers, clinicians, healthcare professionals, industry innovators, and policymakers will join together at ICTO 2026, fostering interdisciplinary dialogue and partnerships. The Conference program incorporates a wide range of topics including cancer oncology, treatment, detection, aspects of clinical trials and genomics. ICTO 2026 will examine both foundational research and translational applications, offering a comprehensive view of the rapidly evolving oncology landscape.

Participants will have the opportunity to present original research, case studies, and innovative methodologies through oral presentations, poster sessions, panel discussions, and interactive workshops. These sessions are designed to stimulate collaboration, critical discussion, and highlight pioneering approaches in cancer prevention, diagnosis, and treatment.

In summary, ICTO 2026 promises to unite experts from around the globe in advancing cancer research, improving patient outcomes, and fostering innovation in oncology. We look forward to welcoming you to Tokyo, Japan, or virtually, as we embark on this exceptional journey of discovery, learning, and collaboration.



Welcome Message

Dr. Shinya Tajima

National Hospital Organization Shizuoka
Medical Centre, Japan

Dear Participants and Esteemed Colleagues,

It is a great honor to extend a warm welcome to all attendees of the 9th Edition of the International Conference on Clinical & Translational Oncology (ICTO 2026) here in Tokyo. As we gather to share our latest research and insights, I am particularly looking forward to the opportunities for profound scientific exchange that this conference provides.

My research focuses on the pathological complexities of breast cancer, specifically the intricate mechanisms of cell polarity in invasive micropapillary carcinoma. I believe that through collaborative discussion and by exploring novel perspectives on the tumor microenvironment, we can significantly advance our collective understanding and improve patient care.

I hope this conference serves as a platform for inspiring innovation among researchers worldwide. I am eagerly anticipating the insightful presentations and meaningful conversations that await us.

Welcome to ICTO 2026, and I look forward to meeting you all in person.

Welcome Message



Dr. Sergey Suchkov

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

Dear Colleagues, Partners and Friends,

It gives us a great pleasure to welcome you to the 9th Edition of International Conference on Clinical & Translational Oncology (ICTO 2026), which is scheduled to be held in October 08-10, in Tokyo, a historical and symbolical City in Contemporary Japan, and is really a fantastic, highly attractive and unique historic settlement, offering you a kaleidoscope of brilliances.

This Grand Event will demonstrate the latest findings and emerging trends shaping the future of personalized & precision cancer care. The Conference will spotlight the design-inspired developments & advances across trans-disciplinary approach and key cancer types and genomic phenotypes.

Being a cornerstone of modern OMICS-guided pre-cancer diagnostics and targeted preventive treatment, the upgraded cancer precision pathology generates global avenues to secure the health and wellness via illustrating the phenomenal impact of Personalized and Precision Oncology (PPO)-related philosophy and armamentarium in the daily practice of cancer practitioners. In this context, PPO-guided tumor molecular profiles and patient characteristics are used for tailoring individualized therapy options.

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 upgraded PPO-guided diagnostic and predictive training, preventive cancer treatment, design-driven translational research & applications, and PPO-related education of the next step generation.

This Conference would bring together relevant field experts, professors, oncologists, biodesigners, 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. The Conference will also provide attendees the opportunity to make and renew friendships, to network, and to collaborate on future endeavors and research projects.

This Event is a fruitful platform to meet fellow key decision makers in universities, healthcare institution, healthcare-related and biotech industries, to share experience, foster collaborations through the research talks and presentation to put many thoughts provoking strategies for discovering new ideas and new skills, in addition to expose your capabilities and discoveries to many interested colleagues.

The scientific program has been carefully designed to encourage interdisciplinary dialogue, promote collaborative research, and highlight innovative strategies that can translate scientific discoveries into improved clinical practice and public health outcomes.

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 brilliant Tokyo.

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About Magnus Group



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

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

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

About ICTO 2026

About

The **9th Edition of the International Conference on Clinical & Translational Oncology (ICTO 2026)** will be held on **October 8–10, 2026**, in **Tokyo, Japan**, and **online**, bringing together researchers, clinicians, oncologists, healthcare professionals, and scientific experts from across the globe. With the theme “From Prevention to Survivorship: A Cancer Care Continuum,” the conference aims to highlight advances in cancer research, clinical practice, and translational medicine that contribute to improved patient outcomes.

ICTO 2026 will provide a platform for sharing scientific findings, presenting innovative approaches, and examining emerging developments in cancer prevention, early detection, diagnosis, treatment, and survivorship care. The program will encompass a broad range of oncology-related topics, including precision medicine, immunotherapy, targeted therapies, cancer biomarkers, clinical trials, and multidisciplinary cancer management.

By bringing together professionals from diverse backgrounds, the conference seeks to encourage scientific collaboration, support knowledge exchange, and strengthen connections between laboratory research and clinical applications. Through oral and poster presentations, expert-led sessions, and professional interactions, ICTO 2026 aims to contribute to ongoing efforts to advance oncology research and promote comprehensive, evidence-based cancer care across the patient journey.

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KEYNOTE PRESENTATIONS





Eleni Petsalaki, Sofia Balafouti, George Zachos*

Department of Biology, University of Crete, Vassilika Vouton,
Heraklion 70013, Greece

Biography: George Zachos completed his PhD at the University of Crete and received postdoctoral training at the Beatson Institute for Cancer Research, Glasgow, U.K. investigating DNA damage checkpoint mechanisms. In 2008, he moved to the Department of Biology of the University of Crete in Greece as an Assistant Professor in Cell Biology, became Associate Professor in 2015 and continues to hold this position today. Discoveries from the Zachos lab have identified novel mechanisms of the mitotic spindle and abscission checkpoints during cell division in human cells. He has published

>40 papers in leading scientific journals and has received >3000 citations.

Building bridges: Mechanisms that prevent chromatin bridge breakage in cytokinesis

Chromatin bridges are strings of mis-segregated chromatin connecting the anaphase poles or daughter nuclei in mitotic cell division and can arise from incomplete DNA replication or decatenation, or from dicentric chromosomes generated by end-to-end chromosome fusions. Chromatin bridges pose a major threat for genome integrity because, if unsupported, they can lead to chromatin bridge breakage-fusion-bridge cycles or to chromothripsis, which can cause burst-like accumulation of genomic alterations that can drive carcinogenesis. As a result, preventing chromatin bridges from breaking is essential for cells to maintain genome stability. For this purpose, human cells use at least two major mechanisms to stabilize chromatin bridges: Firstly, they impose an abscission-delay, called “the abscission checkpoint”, to prevent chromatin breakage or tetraploidization by regression of the cleavage furrow. Recent findings from our lab shed light into how chromatin bridges are sensed by the cell and into the molecular mechanisms involved. We show that Topoisomerase II α , an enzyme that can untangle catenated DNA molecules, recognizes “knotted” DNA on chromatin bridges and triggers a downstream MRN-ATM-Chk2-INCENP/Aurora B signaling pathway to delay abscission and prevent chromatin breakage. Secondly, cells with chromatin bridges generate accumulations of polymerized actin, called “actin patches”, at the base of the intercellular canal to maintain chromatin bridges and prevent them from breaking. We show that daughter nuclei connected by chromatin bridges are under mechanical tension that requires interaction of the nuclear membrane Sun1/2-Nesprin-2 Linker of Nucleoskeleton

and Cytoskeleton (LINC) complex with the actin cytoskeleton. This nuclear tension promotes accumulation of Sun1/2-Nesprin-2 proteins at the base of chromatin bridges, local activation of the small GTPase RhoA, and downstream ROCK-LIMK-Cofilin and mDia1 signaling to generate actin patches and prevent chromatin bridge breakage in cytokinesis. Together, this presentation will describe basic mechanisms that maintain genome stability in human cells and can protect against tumorigenesis.



Jianhua Luo, M.D., Ph.D.

Department of Pathology, University of Pittsburgh School of Medicine, Pittsburgh, PA 15261, United States

Biography: Dr. Luo has been studying molecular mechanisms of human malignancies in the last 36 years. Currently, he is a Professor of Pathology and Director of High Throughput Genome Center at University of Pittsburgh. In the last 30 years, Dr. Luo has been largely focusing on the genetic and molecular mechanism of human cancers such as prostate cancer. He is one of the pioneers in utilizing high throughput gene expression and genome analyses to analyze field effects in prostate cancer and liver cancer. He is also the first in using methylation array and whole genome methylation sequencing

to analyze prostate cancer. He and his colleague helped to develop an ultra-low error synthetic long-read sequencing technology called LOOPSeq that can be utilized to quantify mRNA isoforms and mutation isoform distributions in single cell level. His group has discovered 21 novel fusion genes in prostate, liver and colon cancers. Subsequently, his group discovered that many of these fusion genes are recurrent in many other types of human cancers. His group also developed a genome intervention strategy targeting at the chromosomal breakpoint of fusion gene to treat cancers. Recently, his group has been focusing on machine learning prediction of prostate and liver cancers. Overall, these findings advance our understanding of how cancer develops and behaves, and lay down the foundation for better future diagnosis and treatment for human malignancies.

Fusion genes detection enhances clinical outcome prediction of hepatocellular carcinoma through machine learning analyses

Hepatocellular carcinoma is one of the most lethal malignancies for humans. Assessing the clinical outcomes of HCC remains challenging. In this study, a panel of 20 fusion genes in 200 Hepatocellular Carcinoma (HCC) samples was analyzed to predict the recurrence and survival rates of HCC patients undergoing surgical interventions using machine learning models. The results showed that fusion genes, Milan criteria, serum α -Fetal Protein (AFP), and pathology grade had moderate predictive accuracy for HCC recurrence. However, the combination of selected fusion genes with these clinical parameters significantly enhanced the prediction accuracy of each parameter. When models of fusion genes were applied to predict the 3-year survival rate of HCC patients, they yielded a prediction accuracy of 72.4% in both the training and the testing cohorts. These results outperformed those from the Milan criteria (61.2% training and 58.8% testing), pathology grade (50% training and 49% testing), and serum AFP (66.3% training and 70.2% testing). The combination of a fusion gene panel with Milan criteria, pathology grade, or serum AFP yielded significantly improved results compared to those produced by these clinical parameters alone. As a result, examining the fusion gene status of HCC samples may hold promise as a new and improved approach to assessing the clinical outcomes of this disease.



Dr Manmohan Agrawal MBBS MS DNB*, Dr Lakshmi Agarwal MBBS MD

Pushpadi Cancer Care Centre, India

Biography: Dr Manmohan Agrawal (Consultant Oncosurgeon) MBBS MS, DNB Surgical Oncology is working as surgical oncologist in Department of Oncosurgery, Pushpadi cancer care centre, Kota, Rajasthan, India. Dr. Manmohan has obtained his Master of surgery degree from SCB medical College, Utkal University in 2005 and completed his DNB from Dharamshila Cancer hospital, Delhi in 2009. He has more than 15 years of experience in the field of cancer surgery and had performed more than 8000 cancer surgeries. His main researches are focused on head and neck cancer, breast cancer and

gynecological malignancy. He has published many articles in national and international journals.

Evolving concepts of breast cancer management and recent trends

The prognosis of breast cancer remains unpredictable despite of frequent change in treatment protocol since last few decades. As we understand the heterogenous nature of the disease, complex tumor biology etc. the treatment protocols have changed. There is an unprecedented transformation in breast cancer management, driven by parallel advances in targeted therapies, immunomodulation, drug-delivery technologies, and molecular diagnostic tools. Breast cancer management has shifted from a "one-size-fits-all" approach to highly personalized, biology-driven medicine. Surgical management has progressed from radical mastectomy with routine axillary dissection to breast-conserving surgery with sentinel-node biopsy, targeted nodal dissection, and, in some cases, omission of axillary surgery. Similarly Systemic therapy has likewise moved from universal chemotherapy to risk-adapted approaches.

Recent advances include the routine incorporation of genomic profiling and the widespread adoption of targeted therapies such as HER2-directed agents, CDK4/6 inhibitors, PARP inhibitors, and antibody–drug conjugates, as well as an expanding role for immunotherapy, particularly in triple-negative disease. There is change in HER2 classification due to improvements in targeted treatments. Neoadjuvant systemic therapy has gained prominence in facilitating tumor downstaging and to achieve pathological complete response and enabling response-guided treatment strategies.

This review summarizes evolving concepts and recent advances in breast cancer diagnosis and treatment, with emphasis on precision oncology, multidisciplinary care, and personalized treatment planning.



Michael Thompson*, Lidia Nemtsov

Department of Chemistry, University of Toronto, Toronto, Ontario
M5S 3 H6, Canada

Biography: Professor Michael Thompson was first appointed Lecturer in Instrumental Analysis at Loughborough University, UK. He is now at the University of Toronto where he is Professor of Bioanalytical Chemistry. He is recognized internationally for his pioneering work over many years in the area of research into new biosensor technologies and the surface chemistry of biochemical and biological entities. Thompson has served on the Editorial Boards of a number of major international journals including Biosensors, Analytical Chemistry and The Analyst and is currently Editor-in-Chief

of the monograph series "Detection Science" for the Royal Society of Chemistry, UK. He has been awarded many prestigious international prizes for his research including The Robert Boyle Gold Medal of the Royal Society of Chemistry, The Elsevier Prize in Biosensor and Bioelectronic Technology, the E.W.R. Steacie Award of the Chemical Society of Canada, and recently the 2023 Royal Society of Chemistry Horizons Prize in Analytical.

Electrochemical multiplexing strategies for point-of-care detection of ovarian cancer biomarkers

Currently, the primary methods for detecting the Ovarian Cancer (OC) are Transvaginal Ultrasound (TVUS) and blood tests for the Cancer Antigen 125 (CA125) biomarker. However, these methods alone are not suitably sensitive or specific to identify the disease in its early, asymptomatic stages. HE4, which is also used clinically, improves diagnostic performance, particularly when paired with CA125. Lysophosphatidic Acid (LPA) also shows considerable promise and additional testing can help validate its significance to early-stage detection and screening potential. This marker has been the subject of evaluation in our research on OC detection. It has become increasingly clear that implementing a diagnostic panel comprised of several biomarkers is advisable in terms of early stage assay.

Biosensor technology offers great promise in developing multiplex systems for OC detection and monitoring disease progression. Future integration of multiplex biosensors with Artificial Intelligence (AI) and machine learning approaches may further improve diagnostic capabilities by enabling the analysis of complex biomarker profiles, improving differentiation between disease states, and supporting the development of precision medicine approaches. Electrochemical biosensors offer several advantages, including high sensitivity, relatively low cost, rapid analysis, and compatibility with point-of-care testing applications. This paper aims to discuss current strategies in electrochemical multiplexing and recent advancements

in the development of electrochemical multiplexed platforms for ovarian cancer detection. Additionally, we will present two proof-of-concept sensors targeting CA125 and HE4 as initial steps toward the development of a fully multiplexed system.



Mostafa Mesbah Mahmoud Sabbah

Gaza Oncology Center, Israel

Biography: Mostafa Mesbah Mahmoud Sabbah is a registered nurse with over 20 years of professional experience in critical care, medical-surgical, and oncology nursing. He holds an M.Sc. in Public Health (Epidemiology) from Al-Quds University and has led oncology units in major hospitals across Gaza. His expertise includes chemotherapy administration, infection prevention and control, emergency response, and the development and implementation of national oncology care protocols. He is deeply committed to humanitarian health initiatives, patient education, and the advancement of cancer

care standards. Through leadership, collaboration, and continuous professional development, he strives to contribute to global health equity and promote compassionate, evidence-based nursing practice.

From chemotherapy administration to continuity of cancer care: The critical role of oncology nursing in resource-limited settings

Background: Continuity of cancer care is essential for safe and effective treatment. However, maintaining continuous oncology services can be particularly challenging in resource-limited and crisis-affected settings. In Gaza, oncology patients and healthcare professionals face multiple barriers, including difficulties in accessing cancer services, interruptions and delays in treatment, limited availability of diagnostic and staging investigations, variable availability of anticancer medicines and supportive-care resources, and challenges related to referral and patient movement.

Keynote Focus: This keynote will highlight the critical role of oncology nurses beyond the administration of chemotherapy, emphasizing their contribution to maintaining continuity, safety, and quality of cancer care. The presentation will address practical oncology nursing responsibilities, including patient assessment, treatment readiness and safety verification, recognition and management of treatment-related toxicities, symptom monitoring, patient and family education, communication, documentation, follow-up, and coordination of care.

Real-world oncology nursing service data from August 2026 will be presented to illustrate the workload and continuing demand for cancer services. During this month, 691 service cases were recorded across female and male inpatient departments and day-care units, including 297 chemotherapy-related cases. The same monthly records documented 24 new cases, 49 admissions, 45 discharges, and 5 deaths.

Conclusion: The experience of oncology nursing in Gaza demonstrates that nurses play a central role in sustaining cancer care when healthcare systems operate under severe resource and operational constraints. Strengthening oncology nursing competencies, communication, clinical assessment, documentation, patient education, and coordination can contribute substantially to treatment continuity and patient safety. Lessons from Gaza may also provide practical insights for oncology services working in other resource-limited, humanitarian, and crisis-affected settings.

Keywords: Oncology Nursing, Cancer Care Continuity, Chemotherapy, Resource-Limited Settings, Gaza, Patient Safety, Cancer Care.



Paulo Cesar De Moraes

Catholic University of Brasilia, Brazil
University of Brasilia, Brazil

Biography: Professor De Moraes (H62), PhD, 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 the Huazhong University of Science and Technology (HUST) – China (2012-2015); Distinguished Professor at the Anhui University (AHU) – China (2016-2019); Full Professor at the Catholic University of Brasilia – Brazil since 2018; 2007 Master Research Prize from UnB. He held two-years (1987-1988) position with Bell Communications Research, New Jersey – USA. Doctoral degree in Solid State Physics (1986) from

the Federal University of Minas Gerais – Brazil. With more than 14,500 citations, He has published more than 500 papers (Web of Science), presented more than 300 international invited talks (35 countries), and filed 16 patents.

Prospecting nanomorphology for magnetic hyperthermia efficacy

In this keynote lecture, exotic nanomagnetic materials (magnetic nanorings MNRs) will be introduced as a very promising material for application in Magnetic Hyperthermia (MHT), an advanced cancer therapeutic modality. The chemical synthesis and the characterization of the MNRs will be presented and discussed in this Keynote Talk. Moreover, the data regarding the MHT tests performed with this new magnetic nanomaterial will be presented and discussed. Temperature (T) versus AC magnetic field application time (t) will be explored within the recently-proposed mathematical explanation for the so-called Box Lucas phenomenological approach. For the preliminary MHT tests, the T versus t data were collected at the AC operating frequency of 330 kHz and magnetic field amplitude in the range of 100 Oe to 240 Oe.



Dr. Poulami Khan

Assistant Professor, Asutosh College, Kolkata, West Bengal, India

Biography: Dr. Poulami Khan has completed her PhD from Bose Institute, University of Calcutta and postdoctoral studies from Saroj Gupta Cancer Centre and Research Institute, Kolkata. She is the Assistant Professor and Head of the Department of Biochemistry, Asutosh College, University of Calcutta since 2019. She has published more than 18 papers and book chapters in reputed journals. In addition to the research contributions Dr. Khan actively serves as a reviewer for several prestigious scientific journals. She is also members of the editorial boards of renowned Journals including Cell Transplantation-

(SAGE), Cancer Cell Signalling (Frontiers in oncology), Review of Clinical Pharmacology and Pharmacokinetics-International Edition,.

Dissecting the CSC-immune crosstalk: Mechanistic insights into immunoediting and therapy resistance in breast malignancies

Despite recent advancements in research, cancer metastasis and recurrence continue to be the primary causes of treatment failure. In this context, tumor progression and treatment resistance are progressively inferred as consequences of complex dynamic crosstalk within the Tumor Microenvironment (TME), rather than being solely driven by tumor-intrinsic factors. The present study comprehensively explores the interactions between Cancer Stem Cells (CSCs), Tumor-Associated Macrophages (TAMs), and Tumor-Infiltrating Lymphocytes (TILs) with a focus on breast malignancies. These findings reveal that CSCs play a pivotal role to actively reshape the immune landscape by exuding immunosuppressive cytokines like (Transforming Growth Factor- β) TGF- β , that in turn promotes the expansion of Regulatory T Cells (Tregs), thereby facilitating tumour immune escape. Concurrently, TAMs are polarized toward a pro-tumorigenic phenotype that suppresses cytotoxic T cell activity supporting tumor progression and metastasis.

Delineating in-silico model analyses of immune checkpoint, we further identified that CSC-associated molecular signature is significantly correlated with poor response to immunotherapy approaches, suggesting underlying theory of treatment resistance. Mechanistically, in breast cancer, we characterised a FOXC1-OCT4/SOX2 feedforward loop that sustains stemness and contributes significantly to chemoresistance. Moreover, this axis is negatively regulated by hsa-miR-5688; modulation of which notably reduces stemness along with enhancing therapeutic sensitivity.

In conjunction, a crucial, focusable axis involving CSCs, TAMs, and TILs in cancer immunoediting and therapy resistance are featured in our investigation. These findings underscore the critical need to combinatorial therapeutic approaches that simultaneously remodel the TME, inhibiting CSC-driven signaling pathways, and immune-restoration to enhance clinical efficacy. Therefore, the detailed mechanistic insight gained from this study support enhanced therapeutic sensitivity and optimized patient outcome, targeting CSC, Immune cells and tumour microenvironment.



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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, 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 37,500 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, Dahiya's research programs were supported (99 times awarded) by the NIH and VA. Dahiya's research is focused on creation of in vitro mRNA genomic based diagnostic tests for cancer screening, early diagnosis, prognosis, and treatment follow-up. He is also working on developing novel medical technologies that target oncogenes, aiming to provide the most effective and highly specific treatments for various cancers, potentially saving the lives of millions of cancer patients. Currently, he is an associate editor of "Clinical Cancer Research" journal.

Advances in cancer diagnosis, precision medicine, and RNA therapy

Current screening methods—radiological imaging, DNA-based tests, and pathological assessments—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, non-invasive approach has the potential to deliver faster, more precise diagnoses while eliminating the risks associated with surgical biopsies. In our study, we analyzed 500 prostate cancer samples 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 clinical and pathologic parameters. In blood samples, a 25-gene panel effectively distinguished prostate cancer patients from non-cancer 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. RNA-based cancer vaccine trials are currently underway, targeting a wide range of cancers. With promising results, many of these vaccines could receive FDA approval within the next five years or even sooner. These ground breaking therapies have the potential to revolutionize cancer treatment, offering new hope to every patient and significantly improving the lives of millions of patients.



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Biography: Dr. Sabura Banu Urundai Meeran is a Professor in the Department of Electrical and Electronics Engineering at Saveetha Engineering College, Chennai, India. She holds a Ph.D. in Intelligent Modeling and Control from the College of Engineering, Guindy, Anna University. With over two decades of experience spanning academia, research, and consultancy, she has held leadership roles including Director and Founder/CEO positions, and has mentored student projects that earned national and international awards, patents, and start-up funding. She has authored 48 international journal

publications, five book chapters, and 130+ conference presentations, with recent work focused on bio-inspired optimization of deep learning models for cancer diagnostics.

Bio-inspired metaheuristic optimization of deep convolutional neural networks for multi-cancer diagnostic imaging

Early and accurate cancer detection remains one of the most pressing challenges in clinical oncology, and deep Convolutional Neural Networks (CNNs) have shown strong promise in automating diagnosis from medical images. However, the diagnostic performance of CNN architectures such as ResNet-50, InceptionV3, and VGG16 is highly sensitive to hyperparameter choices — including learning rate, batch size, and weight initialization — and manual or grid-based tuning is often computationally expensive and prone to local minima. This talk presents a unified research programme that addresses this challenge by integrating nature-inspired metaheuristic optimization algorithms with pretrained CNN backbones across four distinct cancer imaging domains: skin lesions, renal malignancy, oral cancer, and breast cancer.

In each study, a bio-inspired optimizer — the Whale Optimization Algorithm, the Walrus Optimization Algorithm, the Aquila Optimizer, and the Osprey Optimization Algorithm respectively — was used to automatically fine-tune network hyperparameters, replacing conventional manual and gradient-based tuning strategies. The optimized models were benchmarked against standard pretrained architectures (AlexNet, GoogLeNet, VGG16, ResNet-50, InceptionV3, Xception, MobileNet) using accuracy, precision, recall, F1-score, specificity, AUC-ROC, Matthews Correlation Coefficient, log loss, and inference time.

Across all four applications, the metaheuristic-optimized models consistently and substantially outperformed their conventional counterparts, achieving classification accuracies of 98.29% for skin lesion detection, 94.53% for renal malignancy prediction, 97.80% for oral cancer diagnosis, and 97.70% for breast cancer detection, alongside markedly reduced false-negative rates and improved AUC-ROC and MCC values. Notably, the optimized models also achieved favorable inference times, supporting their feasibility for real-time and resource-constrained clinical deployment. Interpretability techniques such as occlusion sensitivity analysis further validated that model attention aligned with clinically relevant regions of interest.

Collectively, these findings establish that bio-inspired metaheuristic hyperparameter optimization offers a generalizable, architecture-agnostic strategy for enhancing the accuracy, robustness, and computational efficiency of deep learning-based diagnostic systems across diverse cancer types. This presentation will discuss the shared methodological framework, comparative results, current limitations, and future directions, including multi-class classification and multimodal data integration for next-generation AI-assisted cancer diagnostics.



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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:

- 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
- R&D Director, InMedStar, Russia-UAE
- Senior Scientific Advisor of China Hong Kong Innovation International Business Association, Hong Kong
- Member, The Russian Academy of Natural Sciences, Moscow, Russia
- Member, New York Academy of Sciences, USA
- American Chemical Society (ACS), USA;
- American Heart Association (AHA), USA;
- European Association for Medical Education (AMEE), Dundee, UK;

- EPMA (European Association for Predictive, Preventive and Personalized Medicine), Brussels, EU;
- ARVO (American Association for Research in Vision and Ophthalmology);
- ISER (International Society for Eye Research);
- Personalized Medicine Coalition (PMC), Washington, DC, USA

Personalized oncology 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. This knowledge base provides information on the function of common genomic alterations and their therapeutic implications into the upgraded cancer care practice.

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. In this sense, multi-targeted cancer therapies are able to produce longer survival rates for many types of cancer. Therefore, PPM-guided 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 an individualized patient's cancer is used for PPM-related treatments. In this context, PPO is a cancer treatment approach that is also being used to predict cancer risk, detect cancer at its subclinical (pre-cancer) stage, prevent its occurrence in high-risk individuals, and tailors therapies to a patient's genetic makeup. The selection of therapies in the presence of multiple mutations requires careful clinical judgment, supported by quality-centric genomic testing that emphasizes actionable mutations. Molecular tumor boards can play an increasing role in assimilating genomic data into clinical trials, thereby refining personalized treatment approaches and improving patient outcomes. 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.



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Biography: After Shinya Tajima graduated Keio University School of Medicine, Tajima was employed as an assistant professor to Department of Pathology at Keio University. Tajima learned pathological-anatomy and diagnostic-pathology. Then, Tajima belongs to Department of Radiology at St. Marianna University School of Medicine to study breast-imaging. Tajima has presented some scientific exhibitions about radio-pathological correlation of ECR and RSNA. Tajima learned at St. Marianna University Graduate School of Medicine for four years. And after PhD was acquired, now Tajima is doing research about pathology in National Hospital Organization (NHO) Shizuoka Medical Centre.

A case of papillary ductal carcinoma *in situ* coexisting with mucinous carcinoma of micro-papillary structure of the breast: A pathologic consideration of tumour microenvironment

We would like to present an only case study: However, our important findings might lead to help the interpretations of “Tumour Microenvironment (TME)”.

We herein presenting about 70-year-old female. She presented with a palpable mass in the upper inner quadrant of the right breast, noticed approximately 3 months before. Mammographic screening revealed an abnormality. Hence, she visited a nearby clinic.

1 month later, a Core Needle Biopsy (CNB) suggested “invasive breast carcinoma”, then, she referred to our hospital for further examinations and treatments.

Breast MRI revealed a 14 × 21 × 31 mm mass in the right AC, including 1 small daughter nodule. The lesion exhibited restricted signal on diffusion-weighted imaging as well as ADC map, suggesting malignancy. Consequently, total mastectomy was performed.

Grossly, the surgical specimen demonstrated a continuous lesion in which Papillary Ductal Carcinoma in situ (Pap-DCIS) with mucin production that almost surrounded a mucinous carcinoma of micropapillary type (IMP-MC). The IMP-MC component showed increased cellular density with “random pattern” of membrano-cytoplasmic MUC1 positivity. Both Pap-DCIS and IMP-MC exhibited positive for Alcian Blue, demonstrated with extremely reduced MUC2 expression, and revealed focal positivity for Synaptophysin (not stained N-CAM and CGA). Moreover, β -catenin and E-cadherin were positive but reduced staining compared to the surrounding normal ducts. Both lesions displayed “heterogeneous baso-lateral staining patterns with unclear directional polarity or loss”. In the current case, we hypothesized some types of IMP-MC as well as pap-DCIS might co-behave as “disruption of cellular polarity” rather than “reverse polarity”, we think this point might be true depiction and correct definition by our observations of our immunohistochemical profiles including Cell Adhesion Molecules (CAMs). We would like to emphasize on the one-viewpoint theory of not “reverse cell polarity” but “cell polarity disruption” by the altered CAMs “Hence, our data might be suggestive of this “Low-grade MC” might not through EMT (epithelial mesenchymal transition) pathway but through “non-EMT pathway (clustered migration theory)” by concordant of previous reports. Furthermore, we would like to hypothesize “CAMs” might play a key role for maintaining “bilayer structure of luminal-myoepithelial cell communication”.

Based on these findings, we report the immunohistochemical characteristics of this “IMP-MC of TME” with a literature review emphasizing on the role of CAMs as well as “bilayer structure” of the pathogenesis with comparing “TCGA Classification”.

Thomas J. Webster

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Biography: Thomas J. Webster's (H index: 139) 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 formed over a dozen companies who have numerous FDA approved medical products currently improving human health in over 45,000 patients. He is currently helping those companies and serves as a professor at Brown University, Saveetha University, Hebei University of Technology, UFPI, University of the Basque Country, 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 55,000 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.

Returning mobility with no cancer to over 45,000 students using nanomedicine

Nanomedicine is the use of nanomaterials to improve disease prevention, detection, and treatment which has resulted in hundreds of FDA approved medical products. While nanomedicine has been around for several decades, new technological advances are pushing its boundaries. For example, this presentation will present an over 30 year journey of commercializing nanomaterials for orthopedic implants now in over 45,000 patients to date showing no signs of failure and no return of cancer. Current orthopedic implants face a failure rate of 5 – 10% and sometimes as high as 60% for bone cancer patients. Further, this talk will present future research directions into using Atomic Layer Deposition (ALD) to create such nanostructures on implants to reduce infection and improve bone growth. Sensors grown off of orthopedic implants using ALD will also be discussed in which cell presence on orthopedic implants can be detected and quantified. Such information can also be communicated to a handheld device to better inform surgeons on chances of implant success or failure. Such sensors can also release pharmaceutical agents and/or nanoparticles on-demand to ensure implant success. Lastly, this talk will cover how Artificial Intelligence (AI) can be combined into today's orthopedic implants to predict implant success or failure in the years that follow.



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Biography: Dr. Yan Leyfman is a physician-scientist in oncology recognized as a 40 Under 40 Emerging Leader in Cancer at the 2023 ASCO Annual Meeting. During the COVID-19 pandemic, he led the Immunology Division of the Global COVID-19 Taskforce and conducted early translational work on SARS-CoV-2 and cancer interactions, presented at ASCO and published in peer-reviewed journals. His research spans cancer immunology, CAR T-cell therapies, and clinical AI. Dr. Leyfman is co-founder and Executive Director of MedNews Week, advancing global oncology education and equity. He is committed to mentorship, clinical innovation, and responsible translation of emerging technologies in oncology care.

Real-world clinician adoption and disease-specific safety failures of large language models in oncology clinical decision support

Background: Large Language Models (LLMs) are increasingly used in oncology clinical workflows; however, real-world clinician adoption has outpaced formal institutional guidance and systematic safety validation. Existing evaluations often rely on aggregate performance metrics, which may obscure disease-specific safety risks. We sought to (1) characterize real-world AI use and verification behaviors among oncology clinicians and (2) assess disease-dependent safety failures of LLM-based clinical decision support systems.

Methods: We conducted a voluntary, anonymous cross-sectional survey of oncology clinicians evaluating AI access, patterns of use, verification behaviors, perceived

accountability, and responses to a standardized oncology clinical scenario. Separately, we developed 216 simulated tumor-board vignettes across five oncology domains: leukemia (n=30), breast (n=50), gastrointestinal (n=50), central nervous system metastases (n=50), and gynecologic malignancies (n=50). Each vignette was evaluated using three LLM configurations: (1) unconstrained LLM, (2) NCCN guideline-anchored Retrieval-Augmented Generation (RAG), and (3) literature-anchored RAG. Outputs were independently scored by two board-certified oncologists using a modified Generative Performance Score (mGPS; -1 to +1), incorporating guideline concordance and hallucination penalties. Safety disparity was conservatively defined as the highest severity across scoring axes.

Results: Thirty-one clinicians completed the survey, including fellows (45%) and attending oncologists (29%), representing academic and community practice settings. Despite limited or uncertain access to institution-approved AI tools, nearly all respondents reported independent AI use for professional tasks. Most clinicians reported routinely verifying AI outputs against guidelines or primary literature and maintaining clinician-centered accountability for AI-related errors, while formal institutional governance was frequently absent.

In vignette-based evaluation, NCCN-anchored RAG demonstrated improved guideline concordance and reduced hallucinations compared with unconstrained models; however, safety performance varied substantially by disease context. Leukemia demonstrated predominantly low-to-intermediate safety disparity (93%), whereas high disparity was observed in CNS metastases (80%) and gynecologic malignancies (70%), driven by concurrent hallucinations, staging errors, and inappropriate extrapolation. Readability scores did not correlate with safety, frequently obscuring clinically significant errors.

Conclusions: Oncology clinicians are already integrating AI into clinical practice with high levels of independent verification but limited institutional oversight. LLM safety is strongly disease-dependent and inadequately captured by aggregate accuracy metrics. Disease-stratified validation frameworks incorporating guideline concordance and hallucination detection are necessary to inform responsible clinical deployment. These findings support the need for clinician-led governance and disease-specific risk stratification prior to broad adoption of AI decision support in oncology.

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ORAL PRESENTATIONS





Ahora Chehri

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Exploring stem cell applications in cancer treatment: A systematic bibliometric evaluation

Purpose of the Study: This study aims to analyze global research trends and emerging themes in the application of stem cell biology for cancer therapy. The intent is to map the intellectual landscape and identify key areas of focus and collaboration from 2020 to 2024.

Methodology: This research employed a bibliometric analysis of 960 publications from the SCOPUS database. The analysis was conducted using the Bibliometrix R package and its Biblioshiny interface to examine publication trends, key contributors, and thematic clusters. Main Findings: Annual publication growth was 9.1%, with China and the USA as leading contributors. Key research themes identified include the tumor microenvironment, immunotherapy, and mesenchymal stem cell therapies. Emerging interest in exosomes and cancer stem cell communication was also noted.

Applications of this study: This study applies to the fields of oncology, molecular biology, and regenerative medicine. It can assist researchers, funding agencies, and policymakers in identifying trends, collaboration opportunities, and underexplored areas for future investigation in stem cell-based cancer treatments.

Novelty/Originality of this study: This analysis provides a synthesized, data-driven overview of the current research landscape. It offers a novel roadmap by systematically identifying evolving themes and critical knowledge gaps, such as the long-term efficacy and mechanisms of stem cell therapies within tumors.

Keywords: Stem Cells, Cancer, Tumor Microenvironment, Bibliometric Analysis, Cancer Stem Cells.

Biography

AhoraChehri completed his MBBS Bachelor of Medicine degree and Doctor of Medicine (MD) in Uppsala University, Sweden. He then completed his General Surgery Residency (PGY1–PGY5) and obtained board certification (Facharzt). Currently, he is pursuing a Breast Surgical Oncology (BSO) Fellowship at Institute of Oncology and Medico Cancer Center in Spain and Germany, focusing on advanced surgical care and research in breast oncology.



Amirhosein Maali

Qazvin University of Medical Sciences, Iran

Recent updates on application of modular universal CAR-T cell therapies in cancer

Chimeric antigen receptor T-cell therapy has shown significant clinical benefit, particularly in hematologic malignancies; however, conventional CAR-T platforms still face important limitations, including fixed antigen specificity, antigen escape, limited controllability, and safety-related toxicities. Modular universal CAR-T cell systems have emerged as a strategy to address some of these challenges by separating the signaling component of the CAR from the tumor-targeting module. In this presentation, recent updates in the development and application of modular universal CAR-T cell therapies in cancer will be discussed, with a focus on adaptor-based designs, switchable targeting systems, and approaches that enable more flexible control of CAR-T cell activity. Particular attention will be given to antibody fragment- and nanobody-based targeting modules, which can be engineered to redirect a universal CAR-T cell toward different tumor-associated antigens without redesigning the cellular product itself. The talk will also highlight recent progress in modular CAR-T platforms for hematologic malignancies, including our recent work on the development of universal modular CAR-T cells using target-specific nanobodies. These strategies may provide a more adaptable framework for cellular immunotherapy, although further optimization, preclinical validation, and clinical evaluation are still required to define their safety, efficacy, and translational potential.

Biography

Dr. Amirhosein Maali is a Ph.D. graduate of the Pasteur Institute of Iran and a faculty member in the Department of Biotechnology at Qazvin University of Medical Sciences. His academic work focuses on cancer immunotherapy, particularly the design and development of antibody-fragment based platforms and CAR-T cell technologies for hematologic malignancies. His

research interests include the engineering of targeted cellular immunotherapies, the use of antibody fragments and nanobodies for tumor antigen recognition, and the development of modular CAR-T cell strategies. More recently, his work has involved the development of universal modular CAR T-cell platforms using target-specific nanobodies, with the aim of improving flexibility and target adaptability in cellular immunotherapy. In addition to his academic role, he is the founder and CEO of DNAGen Biotechnology Company, which works in the field of biotechnology and the development of diagnostic and immunodiagnostic platforms.



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Integrated medical care for cancer under Siddha system of Indian medicine – A science based

In the Indian context, the Siddha system of medicine (one of the oldest traditional systems, primarily from South India) is increasingly utilized as a powerful Complementary and Alternative Medicine (CAM) for cancer. This is one of the approved medical systems under the Ministry of AYUSH, Government of India. This evidence based ancient system of medicine is very popular and practiced in southern part of India over several centuries. Although the conventional allopathic medical system is widely practiced all over the world for cancer treatment, its serious side-effects and higher failure rates in addition to huge treatment cost, made the people, especially economically weaker people in India, to seek for alternative remedy for treating Cancer. The primary reason for Siddha's popularity is its ability to improve Quality of Life (QoL) by reducing Side Effects by helping the patients to tolerate chemotherapy and radiation better. It is also effective in alleviating cancer-related fatigue, pain, and loss of appetite.

Although the success rates in cancer treatment in this system are based on some anecdotal cases, a recent study by a government hospital in Chennai, Tamil Nadu, India, brought out a statistics showing that nearly 50% of the cancer patient visited the government siddha hospital for their first line treatment. Recent research studies revealed that the ingredients of the medicines followed for cancer treatment have scientific support. The science behind this traditional system and some recent success stories of this system for cancer treatment are discussed and presented.

Biography

The author aged 76 years is a Ph. D degree holder served as a professor of Zoology and now practicing siddha system of Indian medicine including Yoga as an approved Indian medicinal system practitioner for more than a decade in his hospital located in Chennai, India. He is popularizing Siddha system of medicine by practicing direct consultation and indirect counselling through TV channels and online electronic media. He is specializing in introducing science based Indian medical system by integrating siddha medical therapy with present conventional therapy for treating cancer patients. He is modernizing the current Siddha system by preparing and popularizing science-based Siddha proprietary medicines for many ailments including cancer.



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In situ imaging of glycosylated RNA enables bladder cancer diagnosis

Bladder cancer is one of the most common malignancies worldwide, and early diagnosis and regular follow-up are crucial for improving patient prognosis. Cystoscopy and tissue biopsy, the gold standards for diagnosing bladder cancer, are invasive and may result in complications. Urine, as a clinical sample, offers the advantage of non-invasiveness, enabling continuous disease monitoring. Urinary components have been shown to have broad clinical value, and urinary exosomes, in particular, hold great potential for precise bladder cancer diagnosis.

Glycosylated RNA is a newly reported class of RNA modification molecules located on the surface of mammalian membranes. These RNAs are primarily small non-coding RNAs modified by N-glycans containing sialic acid or fucose, forming glycosylated RNA structures that can be recognized by lectins or immune receptors. Previous studies have reported that glycosylated RNA is closely associated with cancer progression and immune responses, influencing the activity of cancer cells and the function of immune cells. Recent evidence also suggests that glycosylated RNA can be found on extracellular vesicles and holds potential as a biomarker for liquid biopsy diagnostics.

In this study, bladder cancer was used as a model to explore the potential connection between urological cancers and glycosylated RNA. Using rolling circle amplification and proximity ligation detection strategies, the study successfully visualized glycosylated RNA and validated the method in SV-HUC-1, T24, and J82 cell lines, as well as urinary exosome samples. The results revealed that in the cell models, the higher the malignancy of the cell lines, the lower the glycosylation level. In urinary exosomes, the glycosylation levels in cancer-derived urinary exosomes were lower than those in exosomes from healthy individuals. Moreover, the

glycosylated RNA signal in urinary exosomes could distinguish bladder cancer patients from healthy individuals. This study highlights the potential association between bladder cancer and glycosylated RNA.

Biography

Professor Bing Shen is currently a professor at Tongji University and serves as the President of the Tenth People's Hospital Affiliated with Tongji University. He is also the Honorary Director of the Urological Oncology Research Institute at the Tongji University School of Medicine. Between 2007 and 2008, he visited University Medical Center Hamburg-Eppendorf as a visiting scholar. As an academic leader in urology, he established a precision diagnosis and treatment system focused on bladder preservation techniques. Professor Shen has published more than 40 papers in internationally renowned journals, including Chem, Nature Communications, and Science Advances.



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Ultra-deep targeted sequencing of plasma cell neoplasms: Toward non-invasive genomic profiling

Multiple Myeloma (MM) is a relatively frequent type of hematological malignancy that consists of proliferation of abnormal plasma cells in the bone marrow. MGUS and SMM are asymptomatic precursor conditions that can potentially transition to multiple myeloma.

Previous reports indicated that initiating events, such as hyperdiploidy and high-risk translocations including t(4;14), as well as progression drivers—including MAPK pathway

mutations (KRAS, NRAS, or BRAF), the inactivation of TP53 or ATM, and the APOBEC mutational signature—are associated with the transformation of precursor lesions to aggressive multiple myeloma. There are few studies investigating diagnosis or prognosis associated mutations in a longitudinal manner for identification of non-invasive biomarkers. In this study, 76 MGUS and 61 SMM cases were prospectively enrolled, and followed up for 8 years. During this time period, one MGUS (1.3%) and 5 SMM (8.2%) cases transformed to overt MM. Peripheral blood samples were collected to isolate plasma cfDNA and granulocyte gDNA samples, as well as Bone Marrow (BM) samples to obtain tumor tissue DNA. cfDNA samples were obtained by separating plasma through centrifugation of peripheral blood samples, followed by purification of cfDNA with a cfDNA isolation kit.

Plasma cells were enriched with FACS by sorting CD138⁺/CD38⁺ BM cells from SMM and MM cases, and CD138⁺/CD38⁺/CD56⁺/CD19⁻ populations from MGUS cases. A targeted ultra-deep Next Generation Sequencing (NGS) platform including 261 genes known to be recurrently mutated in PCNs was employed to identify somatic mutations in bone marrow tumor tissue DNA and plasma cfDNA samples of MGUS, SMM during diagnosis as well as after transformation to MM. A strict computational analytical pipeline including MuTect2 was used to identify somatic variants, which included variants in BM tumor DNA or cfDNA with % of VAFs more than 4 fold of that of patient-matched granulocyte gDNA. Importantly, 8 of 21 (38%) MGUS cases, 18 of 23 (78.3%) SMM cases, and 5 of 6 (83.3%) MM cases harbored at least one somatic mutation in plasma cfDNA samples. Among cases that transformed to MM, one of one (100%) MGUS and 4 of 5 (80%) SMM cases harbored somatic mutation(s) in cfDNA whereas non-transformed cases had mutations in 7 of 20 (35%) MGUS and 14 of 18 (77.8%) SMM cases. In general, the numbers of point mutations and indels were higher in bone marrow tumor DNA samples compared with those of plasma cfDNA samples. Importantly, most of the somatic mutations identified in plasma cfDNA samples of MGUS (86.5%), SMM (100%) or MM (87.5%) were also present in patient-matched BM tumor DNAs. Some of these were already known, potentially oncogenic mutations such as those of BRAF or MAX genes. Certain COSMIC annotated mutations in genes like KMT2C were present in patient-matched pre- and post-transformation cfDNA and BM tDNA samples. Our observations were generally in accordance with a previous study by Bustorus et al. JCO 2020 suggesting the presence of driver mutations at the SMM stage.

Different than the findings of a recent report by Samur et al. JCO 2026, we did not observe difference in somatic mutation numbers between transformed and non-transformed cases. In conclusion, targeted ultra-deep sequencing may enable the non-invasive identification of somatic mutations in MGUS or SMM cases with the potential to progress to MM. Furthermore, the identification of oncogenic mutations may help guide patient-specific targeted therapies.

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. He authored important publications on the pathobiology of lymphoid malignancies, some of which changed WHO diagnostic classifications. He earned prestigious international awards from the American Society of Hematology and the National Natural Science Foundation of China. He is in the editorial board of BMC Medicine. 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.



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Mechanistic study on the activation of Primary Motor Cortex (M1) in inhibiting ovarian cancer through iGluR-mediated reversal of CD8⁺ T cell exhaustion

Objective: Ovarian Cancer (OC) immunosuppression severely limits therapeutic efficacy. While peripheral neural tumor regulation is recognized, the Central Nervous System's (CNS) role in modulating the Tumor Immune Microenvironment (TIME) remains unclear. We aimed to map the Primary Motor Cortex (M1)-ovary neural connection and elucidate how M1 activation regulates OC progression and CD8⁺ T cell function.

Methods: PRV retrograde tracing mapped the brain-ovary circuit, and chemogenetics modulated M1 excitability in an orthotopic ID8-luc mouse OC model. Tumor-infiltrating CD8⁺ T cells were analyzed via scRNA-seq and flow cytometry. TME neurotransmitters were assessed using LC-MS targeted metabolomics. The Glutamate-iGluR-Ca²⁺ axis was investigated via real-time calcium imaging and CNQX pharmacological rescue.

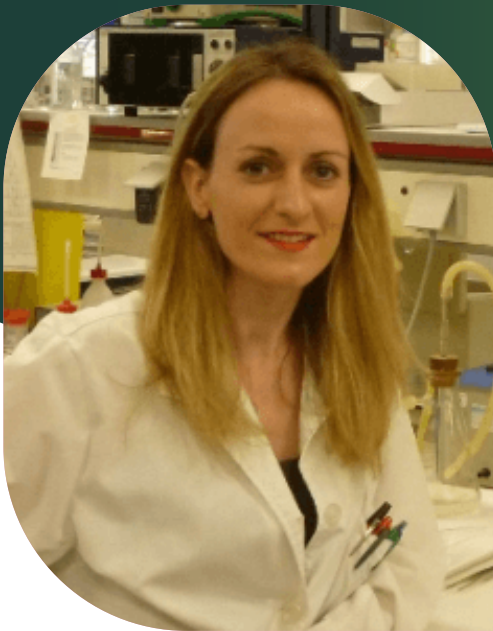
Results: PRV tracing revealed a direct, contralateral neural projection from M1 to the ovary. Unilateral M1 activation significantly suppressed contralateral OC progression and extended survival, an effect completely abolished by CD8⁺ T cell depletion. M1 activation reinvigorated immunity by reducing CD8⁺ T cell exhaustion (downregulating PD-1/TIM-3) and enhancing effector molecules (GZMB, TNF- α). Metabolomics showed M1 activation significantly decreased TME L-glutamate levels, which correlated with tumor burden. Mechanistically, high TME glutamate drove pathological TCR-mediated calcium overload via ionotropic glutamate receptors (iGluRs, specifically GRIK5) on T cells. Pharmacological iGluR blockade completely rescued this glutamate-induced T cell dysfunction.

Conclusion: We reveal a previously unrecognized descending axis by which higher brain centers regulate peripheral tumor progression: M1 activation remodels the TME metabolic landscape by reducing glutamate concentration, thereby blocking iGluR-mediated CD8⁺ T cell exhaustion and reinvigorating anti-tumor immunity. These findings provide a novel theoretical framework and CNS-targeted therapeutic strategy for OC.

Keywords: Ovarian Cancer, Primary Motor Cortex, CD8⁺ T Cell Exhaustion, Ionotropic Glutamate Receptors, Cancer Neuroscience.

Biography

Dongyao Zhang is a researcher in Obstetrics and Gynecology at Shanghai Jiao Tong University School of Medicine. His research focuses on gynecologic oncology, tumor metabolism, reproductive metabolism, and the tumor immune microenvironment. He has published multiple first-author studies in JCR Q1/Q2 journals, with a cumulative impact factor exceeding 26 based on his listed publications. His current work investigates metabolic and neuroimmune mechanisms in ovarian cancer, with particular interest in amino acid metabolism, CD8⁺ T-cell dysfunction, and novel therapeutic targets.



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George Zachos, Eleni Petsalaki***

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

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. 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 nuclear tension promotes accumulation of Sun1/2-Nesprin-2 proteins at the base of chromatin bridges and local enrichment of the RhoA-activator PDZ RhoGEF through PDZ-binding to cytoplasmic Nesprin-2 spectrin repeats. In turn, PDZ RhoGEF activates the small GTPase RhoA and downstream ROCK-LIMK-Cofilin and mDia1 signaling to generate actin patches and prevent chromatin bridge breakage in cytokinesis. 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.

Biography

Dr Eleni Petsalaki is a Post Doctoral 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.



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Modeling a novel SMARTer design using an optimizing diagnostic: Quantitative evaluation of improved patient outcome and sample size reduction, and implications for lower clinical trial costs and facilitating registration

Modern oncology commonly requires sequential treatment; however, trials for approval typically do not include direct testing of sequences. Adaptive trials and Sequential Multiple Assignment Randomized Trial (SMART) trials are often of approved drugs and are large, slow, complex, expensive and may have high dimensionality making analysis complex. Herein we model SMART trials with streamlined designs, fewer patients and paths, to enhance registration (SMARTer). In the experimental arm an early during-treatment, Optimizing Diagnostic (ODx), such as ctDNA, is used to optimize each patient's therapy, increasing the chance of benefit. We modeled six scenarios in which an ODx identified likely nonresponders early in the New Therapy (NewRx) first arm and, within that arm, changed their treatment to Standard of Care (SOC) or, in a second design, re-randomized to SOC or SOC plus NewRx. Scenarios varied ODx performance and relative treatment effectiveness. When NewRx-alone response was modeled at 40%, versus 30% for SOC, and ODx had high sensitivity and specificity (95%), therapy change increased the NewRx-first arm response rate to 55.7% (40% increase) and reduced required sample size from 355 to 57 per arm (84% decrease). A 70% sensitive and specific test reduced size by 50%. Across scenarios, even when NewRx alone was no better than SOC, the SMARTer design yielded clinical benefits while reducing sample size. SMARTer is a streamlined, registration-oriented framework for evaluating new treatment paths. Modeling shows it would improve patient outcome, be more ethical, and reduce costs and time, while potentially providing data to speed regulatory approval.

Biography

In 1984 Floyd Taub started the company (Digene) that pioneered HPV testing for cancer using DNA from cervical specimens. It is believed to still be the most widely used DNA test for early detection/prevention of cancer. In 1998 Taub performed one of the first IO Phase I/II trials; it closed meeting all endpoints and showing variable but sometimes striking cancer reduction without toxicity. Taub now focuses on early detection methods for other cancers and is developing the first system to enrich trans-renal DNA from urine to increase sensitivity and convenience of liquid biopsy testing to complement and/or replace methods using blood.



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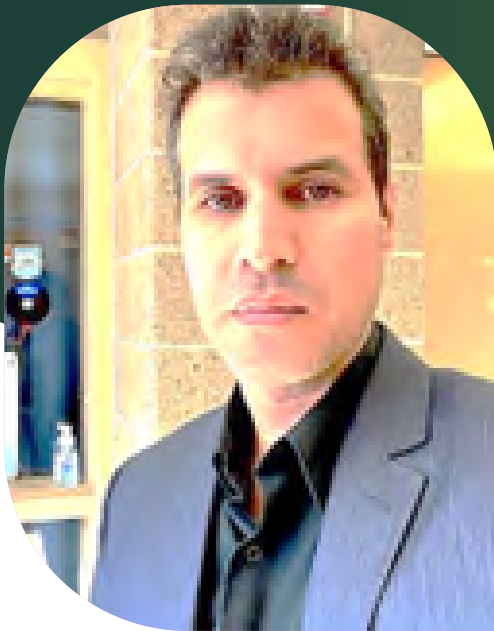
Evaluation of uProcess for detection of oncogene sequences in buffer and urine by qPCR following 3-minute capture and 5-minute purification procedure

Cell-Free DNA (cfDNA) and Circulating Tumor DNA (ctDNA), found in blood and urine, have firmly established themselves as key analytes for the diagnosis of various cancers and for defining therapy. Primary sequence and epigenetic markers within cfDNA are key in screening and monitoring for cancer. However, both screening and long-term monitoring have two major limitations – test sensitivity and individual participation. Even as NGS, ddPCR, and other methods continue to improve, they require large amounts of cfDNA to reliably detect rare ctDNA fragments. For example, a single BioRad ddPCR reaction can analyze 1 µg of short cfDNA, but a single tube of blood might yield on the order of 10ng, thus cutting potential sensitivity 100x. Additionally, participation is typically a severe impediment to screening and long-term monitoring. Historically, this has been a major obstacle, especially for screening. Travel to clinics, pain/difficulty of phlebotomy, and patient aversion to it limit participation. Urine offers a far more accessible alternative, but ctDNA concentrations are lower and current urine-based cfDNA/ctDNA collection methods have yet to achieve yields adequate for highly sensitive testing. A µg of cfDNA is required for detection at the 0.001% level. Herein, we test and optimize a system (uProcess) designed for at-home urine filtration; it previously demonstrated capture over 2 µg of cfDNA from 200 mL of urine on a mail-in filter cartridge. Compared to previous versions, we have reduced the elution volume 5-fold from 2.5 to 0.5 mLs, allowing concentrated samples for downstream processing. We demonstrated that the improved device can efficiently concentrate oncogene sequences, in buffer or urine, into a small elution volume in under ten minutes vs. typical procedures taking 90-120 minutes. We then detected KRAS and TP53 oncogenes by qPCR, underscoring that the method produces ctDNA suitable for downstream usage. Together, these findings support the potential of uProcess to significantly

expand access to cfDNA/ctDNA testing, improve sensitivity, shorten cfDNA purification time, and overcome longstanding barriers to cancer screening or monitoring.

Biography

In 1984 Floyd Taub started the company (Digene) that pioneered HPV testing for cancer using DNA from cervical specimens. It is believed to still be the most widely used DNA test for early detection/prevention of cancer. In 1998 Taub performed one of the first IO Phase I/II trials; it closed meeting all endpoints and showing variable but sometimes striking cancer reduction without toxicity. Taub now focuses on early detection methods for other cancers and is developing the first system to enrich trans-renal DNA from urine to increase sensitivity and convenience of liquid biopsy testing to complement and/or replace methods using blood.



Hamza Saad

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Global lung cancer survival prediction using advanced machine learning: A multiregional patient-level analysis

The challenges posed by lung cancer are immense. It is one of the most serious diseases, health-wise, due to various factors affecting patient outcomes, such as demographic, environmental, behavioral, treatment-related, and clinical factors. With the increasing availability of multidimensional patient data, advanced machine learning technologies can be used to predict prognostic factors and identify determinants of survival. The primary goal of this study was to analyze the existing lung cancer dataset, evaluate several machine learning algorithms for predicting patient outcomes, and identify the most significant predictors. In this study, “Survived” served as the main outcome variable, while “Survival_months” was excluded from the training and testing of models to avoid data leakage. Models including Logistic regression, Random Forest, ExtraTrees, Gradient Boosting, and XGBoost were developed on the basis of a stratified data split with the ratio of 80/20. The performance evaluation of the models was conducted before calculating accuracy, precision, recall, F1-score, as well as the area under the ROC curve. Permutation importance enabled finding out the most significant predictors. The study covered 2,000 patient records and 41 factors. No missing data was found. Overall, the survival rate was 37.8%. Survival was not the same across stages. In Stage I, it was 69.8%. In Stage IV, it dropped to 5.5%. The Gradient Boosting model performed best. It reached about 70% accuracy. Its ROC-AUC was 0.786. The cancer stage was confirmed as the most significant predictor, with the highest importance value compared with other variables. The dataset demonstrates that machine learning methods can be applied to lung cancer survival predictions and that cancer stage is the most prominent variable.

Keywords: Lung Cancer, Machine Learning, Survival Prediction, Global Health, Prognostic Modeling.

Biography

Dr. Hamza Saad is an assistant professor at the School of Technology Graduate Programs at the University of Central Missouri, where he leads graduate studies in Industrial Management and Technology. With exceptional professional knowledge and experience, Dr. Saad has mastered the art of integrating theory with practical knowledge and skills in manufacturing, healthcare, Lean Six Sigma, and project management.



Jagmohan Lal Meena

ACTREC - Tata Memorial Centre, India

Occupational therapy in oncology: From prehabilitation to palliation—Optimizing function, quality of life and lymphedema management

Cancer and its treatments frequently result in physical, cognitive, psychosocial, and functional impairments that adversely affect participation, independence, and quality of life. Occupational Therapy (OT) plays a pivotal role across the continuum of cancer care, extending from prehabilitation and active treatment through rehabilitation, survivorship, palliative care, and end-of-life care. This presentation will provide a comprehensive overview of evidence-based occupational therapy interventions aimed at optimizing function, enhancing participation in meaningful activities, and improving patient-centred outcomes.

The session will highlight the role of prehabilitation in preparing patients physically, functionally, and psychologically for surgery, chemotherapy, radiotherapy, transplantation, and other cancer treatments, with the goal of minimizing treatment-related complications and facilitating recovery. The contribution of OT during active treatment and survivorship will also be discussed, including interventions for cancer-related fatigue, energy conservation, vaginal stenosis/stricture, trismus, cognitive impairment, upper-limb dysfunction, assistive technology, adaptive strategies, and return-to-work and community reintegration.

A special focus will be placed on Cancer-Related Lymphedema (CRL), an often underrecognized yet significant complication affecting individuals with breast, head and neck, gynaecological, genitourinary, and other cancers. Current approaches to early detection and assessment, including bioimpedance spectroscopy, as well as complete decongestive therapy, manual lymphatic drainage, compression therapy, therapeutic exercise, self-management, and emerging rehabilitation strategies will be presented. The role of OT in palliative and end-of-

life care will also be explored, with emphasis on symptom management, comfort, dignity, meaningful occupation, caregiver support, and patient-centred quality of life.

By integrating rehabilitation throughout the cancer journey, occupational therapy can contribute substantially to functional independence, participation, symptom management, and holistic cancer care. This presentation aims to strengthen awareness of the expanding role of oncology occupational therapy and cancer-related lymphedema management while promoting multidisciplinary collaboration to improve outcomes for individuals living with and beyond cancer.

Keywords: Occupational Therapy, Oncology Rehabilitation, Cancer Prehabilitation, Cancer Survivorship, Palliative Care, Cancer-Related Lymphedema, Lymphedema Management, Quality of Life, Functional Independence.

Biography

Dr. Jagmohan Lal Meena is an Associate Professor and In Charge of the Department of Occupational Therapy at ACTREC–Tata Memorial Centre, Navi Mumbai. He has over 24 years of experience in multispecialty rehabilitation, including more than 15 years of dedicated experience in cancer rehabilitation and lymphedema management. His clinical and research interests include cancer-related lymphedema, head and neck rehabilitation, trismus management, bone and soft-tissue rehabilitation, neuro-oncology rehabilitation, palliative care, and occupational therapy across the cancer care continuum. He holds a Master of Occupational Therapy (MOT) from Seth GSMC & KEMH, Mumbai, and is a Certified Lymphedema Therapist (CLT) from the UK and USA. He has contributed extensively to clinical research, academic teaching, clinical training, and professional development in oncology rehabilitation.



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Thin-section CT prediction of visceral pleural invasion in part-solid lung adenocarcinomas ≤ 3 cm: Relationship-specific imaging features of pleural-attached and pleural-tag nodules

Purpose: To determine whether CT predictors of Visceral Pleural Invasion (VPI) differ by tumor-pleural relationship in part-solid lung adenocarcinoma and to develop interpretable models for pleural-attached and pleural-tag nodules.

Methods: This retrospective study included 785 patients with surgically resected clinical stage IA part-solid lung adenocarcinoma (208 VPI-positive; 577 VPI-negative). Nodules were classified as pleural-attached (n=417) or pleural-tag (n=368). Common CT predictors were selected by LASSO for an overall clinical-CT model. Relationship-specific features were then incorporated into separate attached and tag models. Model performance and associations with adverse pathologic features and Recurrence-Free Survival (RFS) were assessed.

Results: Maximum solid component diameter, tumor disappearance ratio, and pleural attachment were common predictors; the overall model achieved AUCs of 0.77 and 0.80 in training and testing cohorts, respectively. In attached nodules, pleural thickening, Pleural Contact Depth (PCD), solid component-pleural abutment, and concomitant pleural tags independently predicted VPI (AUCs, 0.83 and 0.82). In tag nodules, Pleural Traction Depth Ratio (PTDR), triangular soft-tissue tags, and pleural traction alignment were independent predictors (AUCs, 0.86 and 0.85). Model-defined high-risk groups had more adverse pathologic features. The attached-specific score significantly stratified RFS, whereas the tag-specific score did not. Training-derived cutoffs of PCD>9.5 mm and PTDR>0.25 retained discriminatory value in the testing cohort (AUCs, 0.80 and 0.74, respectively).

Conclusion: VPI-associated CT features differ between pleural-attached and pleural-tag part-solid lung adenocarcinomas. Relationship-specific assessment of the solid component–pleural interface and pleural traction features may refine preoperative VPI risk stratification and provide complementary prognostic information, particularly for pleural-attached nodules.

Keywords: Visceral Pleural Invasion, Lung Adenocarcinoma, Part-Solid Nodule, Computed Tomography, Pleural Attachment, Pleural Tag, Risk Stratification.

Biography

Jing Sheng is a doctoral candidate in Medicine at Tongji University, with a primary research focus on oncologic imaging and interdisciplinary medical research. As a first or co-first author, he has published or accepted 7 papers, including 6 SCI-indexed articles and 1 Chinese core journal article, with a cumulative impact factor of approximately 29.4. His publications include 2 JCR Q1 and 3 JCR Q2 papers, with a highest impact factor of 6.58. His research interests mainly involve imaging-based differentiation of tumors, multi-omics analysis of tumors, and translational oncology, reflecting a solid background in clinical research and multidisciplinary investigation.



Jinhua Wang*, Pengbo Huo, Duanbin Han, Nan Fang

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Nanjing, China

A case report of recurrent adult-type ovarian granulosa cell tumor in a 22-year-old female: Long-term efficacy of fuzulopari combined with apatinib

Adult-Type Ovarian Granulosa Cell Tumor (AGCT) is a rare low-grade malignant sex cord-stromal tumor, accounting for 2–5% of all ovarian malignancies, with 95% of cases occurring in middle-aged women aged 45–55 years. Cases in young patients ≤ 25 years old are extremely uncommon, accounting for only 5–8% of AGCT cases, but typically exhibit more aggressive biological behavior—characterized by higher recurrence rates, earlier distant metastases, and poorer response to conventional chemotherapy—posing significant challenges to clinical management. We report a 22-year-old nulliparous female who was admitted to Peking University International Hospital in January 2015 due to persistent abdominal distension and intermittent nausea for 10 days. Laparoscopic exploration revealed a large pelvic-abdominal cyst, and pathological examination confirmed right ovarian AGCT with adnexal involvement. She initially received six cycles of BEP adjuvant chemotherapy (etoposide, nedaplatin, bleomycin) after surgery, but suffered the first recurrence in August 2016. Abdominal ultrasound and PET-CT detected lesions in the left adnexa, liver, and splenic capsule, followed by tumor resection at Fudan University Shanghai Cancer Center and six cycles of paclitaxel plus carboplatin chemotherapy. The disease recurred again in April 2019, with pelvic MRI and PET-CT suggesting pancreatic tail metastasis; she underwent radical surgery (total hysterectomy, left adnexectomy, etc.) at Tianjin Medical University Cancer Institute and Hospital, followed by three cycles of doxorubicin liposome plus oxaliplatin chemotherapy. In July 2022, CT confirmed recurrent liver and splenic capsule metastases. Genetic testing identified a CHEK2 p.K373E variant (a key gene in the DNA damage repair pathway) indicating potential sensitivity to PARP inhibitors, while PD-L1 expression was negative (tumor cell positivity 0%, immune

cell positivity<1%), suggesting limited efficacy of immunotherapy. Subsequently, the patient was administered oral fuzulopari (150 mg twice daily) combined with apatinib (250 mg once daily). As of August 2025, after 36 months of continuous targeted therapy and regular follow-up, all tumor markers (AFP, CEA, CA-199, HE4, CA-724, CA-153, CA-125) remained within normal ranges, imaging examinations showed stable metastatic lesions, and the patient maintained an ECOG performance status of 0 with no obvious discomfort. This case highlights that for young patients with recurrent AGCT refractory to multiple chemotherapy regimens, genetic testing and PD-L1 assessment are critical to guiding individualized targeted therapy. The combination of fuzulopari (a PARP inhibitor blocking DNA repair) and apatinib (an anti-angiogenic agent inhibiting tumor vascular growth) exerts synergistic anti-tumor effects, serving as a promising treatment strategy to achieve long-term disease control. Given the high risk of late recurrence (5–20 years post-initial treatment) in AGCT, long-term regular follow-up is essential for optimal patient management.

Biography

Jinhua Wang, MD, Professor, Chief Physician (Grade 2), and Doctoral Supervisor, is the academic leader of Gynecologic Oncology Surgery at The Affiliated Cancer Hospital of Nanjing Medical University. He holds core positions in national and provincial gynecologic oncology associations, presides over 11 scientific research projects including national-level ones, and has won 8 academic awards. With over 80 published papers (30+ in SCI journals), his research focuses on precision and targeted therapy for gynecologic tumors, boasting rich clinical practice and academic achievements in rare tumor diagnosis and treatment.



Jose Luis Braga de Aquino

Professor, Hospital and Maternity Celso Pierro, Medical School, Pontifical Catholic University of Campinas, Brazil

Late evaluation of palliative surgical treatment of advanced esophageal cancer

Although malignant neoplasms of the esophagus remain a very common disease, their diagnosis might often come late. This issue combined with excessive weight loss due to dysphagia and the association with cardiopulmonary diseases resulting from excessive tobacco use, makes patients with this neoplasm difficult to manage clinically, which explains why 50% of patients require palliative treatment. The ideal scenario would be the performance of procedures that provided an adequate quality of life and satisfactorily restored swallowing, without the need for further hospitalizations and with lower rates of complications. Thus the aims to describe indications and results of palliative methods and especially diversion surgeries, discussed with emphasis on the technique of the Isoperistaltic Greater Curvature Gastric Tube (IGCGT), which was performed at the Surgery Department of Medical School, Pontifical Catholic University of Campinas, Brazil. 143 patients with unresectable squamous cell carcinoma of the esophagus (stage T4b) were evaluated at this facility, but they all had clinical conditions to undergo IGCGT. In the early postoperative evaluation, 64 patients (44,7%) presented systemic complications, with pulmonary infection being the most frequent; 51 patients (35,6%) presented local complications, with cervical esophagogastric anastomotic leak being the most frequent. Thirteen patients (9,1%) died as a result of post operative complications. Out of 112 patients who were adequately followed up, 91 (81,2%) achieved good palliation with this procedure, as they had adequate restoration of swallowing function. Chemorradiation was performed after the IGCGT transposition in 82 patients, with a median survival of 3 years in 63 patients (76,8%). With the results, it is possible to conclude that despite showing non-negligible morbidity, IGCGT can be performed quickly and safely, especially after the advent of mechanical suturing, offering adequate palliation and survival rate. In addition, it has the advantage of simultaneously providing good drainage of the esophagus and stomach, thus avoiding potential esophageal mucocele.

Biography

Jose L. B. de Aquino was born in Campinas, Brazil, graduated in Medicine in 1978 from the Faculty of Medicine of Sao Jose do Rio Preto, SP. He completed his training in General Surgery for 4 years at the Faculty of Medicine of the Pontifical Catholic University of Campinas, having obtained a Master's degree in Surgery in 1990 and a Doctorate in Surgery in 1996, both from the State University of Campinas (UNICAMP). He is Professor of Surgical Clinic at the Faculty of Medicine of PUC, working with Head and Neck Surgery, Thoracic Surgery, Digestive and Esophageal Diseases. Leader of one of the PUC Research Groups "DIAGNOSTIC AND CLINICAL SURGERY TREATMENT" with a multidisciplinary focus with the clinical, surgical and nutritional areas. He is a Professor of the Postgraduate Course in Health Sciences at PUC, Editor-in-Chief of the Revista de Ciências Médicas at PUC; Associate editor of the Revista do Colégio Brasileiro de Cirurgiões. Author and co-author of 216 articles published in national and international magazines and winner of several awards for works presented in Congresses.



Jose Luis Braga de Aquino

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Late evaluation of salvage esophagectomy after intentional exclusive chemorradiation in advanced esophageal cancer

Even though the esophageal cancer has innumerable treatment options, its prognosis is still unsettled. Because esophagectomy is rarely curative, other therapies, such as chemorradiation emerging in advanced disease followed or not surgery. The salvage esophagectomy is an alternative for those patients with recurrent disease. Thus the intend is show the results of the salvage esophagectomy in patients with esophageal cancer who had previously undergone chemorradiation and discussion about the morbidity of this surgical tecnic. Too,,its show the our experience in 72 patients with unresectabeled esophageal carcinoma were treated with chemorradiation followed by salvage esophagectomy. Patients was evaluated with regard pos-operative complications and disease free survival. The major complications was leak at the level of the anastomotic esophagogastric cervical, presents in 16 patients (22,2%) and pulmonary infection in 23 patients (31,9%). In 53 patients that were available for a five years follow-up a rate of 43,3% (23 patients) of disease free survival. Thus with the results its conclude that the salvage esophagectomy seems to be valuable in cases without any other therapeutic options.

Biography

Jose L. B. de Aquino was born in Campinas, Brazil, graduated in Medicine in 1978 from the Faculty of Medicine of Sao Jose do Rio Preto, SP. He completed his training in General Surgery for 4 years at the Faculty of Medicine of the Pontifical Catholic University of Campinas, having obtained a Master's degree in Surgery in 1990 and a Doctorate in Surgery in 1996, both from the State University of Campinas (UNICAMP). He is Professor of Surgical Clinic at the Faculty

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Dr. Kajal Rajpurohit

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Occupational therapy management of giant bilateral lower limb and scrotal lymphedema in recurrent penile cancer: A case report

Introduction: Penile carcinoma is a rare malignancy with significant physical, psychosocial, sexual, and emotional consequences. Recurrent disease often requires repeated surgeries and lymph node dissections, leading to complications such as chronic lymphedema, pain, fatigue, and reduced mobility, impairing quality of life and engagement in daily activities.

Case Description: A 42-year-old male, formerly employed as an electrician, with penile carcinoma diagnosed in 2019, underwent wide local excision with modified inguinal lymph node dissection, followed by glansectomy. Disease recurrence in 2022 required bilateral inguinal and pelvic lymph node dissection with adjuvant chemotherapy and radiotherapy. The patient subsequently developed bilateral lower limb (right>left) and scrotal lymphedema, complicated by non-compliance and multiple right leg wounds. He reported pain, limb heaviness, fatigue, reduced strength and range of motion, and marked difficulty with activities of daily living. Occupational therapy assessment included limb volume measurement using circumferential tape and the truncated cone formula, scrotal girth assessment, Lymphedema Life Impact Scale, Functional Independence Measure, and EORTC QLQ-C30.

Discussion: The patient received a structured occupational therapy programme comprising Complete Decongestive Therapy with multi-layer lymphatic bandaging for bilateral lower limb and genital lymphedema. Additional interventions included scrotal bandaging, skin care education, ADL retraining and modification, psychosocial rehabilitation, energy conservation techniques, caregiver education with home-based self-bandaging training, and vocational counselling. After four weeks, left lower limb volume reduced from 16.64 L to 10.70 L and right

lower limb volume from 29.07 L to 14.52 L. Improvements were noted in mobility, comfort, ADL participation, and self-image.

Conclusion: This case demonstrates the vital role of occupational therapy in managing complex oncological lymphedema. Complete decongestive therapy, functional training, psychosocial support, and caregiver education led to meaningful improvements in function, independence, quality of life, and body image.

Biography

Dr. Kajal Rajpurohit is an Occupational Therapist at Seth G.S. Medical College and KEM Hospital, Mumbai, and a PhD Scholar at Lokmanya Tilak Municipal Medical College, Mumbai. She is specialized in oncology rehabilitation. She completed her Bachelor's in Occupational Therapy from D.Y. Patil University in 2021 and Master's in Occupational Therapy in Oncology from Tata Memorial Hospital in 2023. She contributed to establishing Occupational Therapy services at Humsafar Palliative Rehabilitation and Day Care Centre, an initiative by Littlemore NGO in collaboration with Tata Memorial Hospital. She is an ACOLS-Certified Lymphedema Therapist from USA and has over three years of experience in lymphedema management. She has presented research at national and international conferences and has done various certification courses and has publications to her credit.



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Addressing socioeconomic inequalities in breast cancer care: A national clinical pathway proposal for Mexico

Breast cancer is a major public health issue since it is the most common cause of death from malignant neoplasms in women over 25 around the world, especially in low-income countries where death rates are higher. In Mexico, preventative efforts are made harder by the fact that screening programs are not working together, the healthcare system is falling apart, and there are no good ways to refer people. The situation gets worse because there are differences in society that make health outcomes worse. In breast cancer, disparities manifest in prevention and early diagnosis, linked to low educational attainment, inadequate income, substandard housing circumstances, and limited access to healthcare services. Our research team conducted a study employing a survey of 10,000 Mexican women aged 40 and older, which validated these constraints. Seventy-six percent said it had been more than two years since their last mammogram, and just 24% said they had the test done when they should have. This shows that people aren't following the rules for being screened on time. The socioeconomic study that used information from the Economic Commission for Latin America and the Caribbean found that majority of the women who are late for their mammograms are very poor. There are only a few ladies who are not poor. Most of the women who got their mammograms on time weren't poor or at risk. Our research shows that social and economic factors play a large role in how easy it is for people to acquire an early diagnosis of breast cancer. Our experience also demonstrates that just offering free services isn't enough to get consumers to follow screening standards. Because of this, hospitals need to improve their infrastructure. But it's much more important to improve breast cancer management systems so they can handle social obstacles and the effects of extreme poverty on accessing medical care. As a result, it is suggested that a national public policy framework create an oncological clinical pathway for breast cancer, starting at the primary care level by providing clear information about warning

signs, symptoms, and care pathways, in line with the Mexican Official Standard NOM-041-SSA2-2011 and the current Clinical Practice Guidelines. In cases with significant clinical or imaging suspicion, this pathway should promptly escalate to the tertiary level of care. The best way to deal with social health inequalities at this level of care is to put the right resources into a priority oncology pathway that includes quick access to specialized diagnostic studies, histopathological confirmation, multidisciplinary discussion, and the start of definitive treatment. No matter how much money they have, all patients can get quick, complete, and timely care at this level. This is because the infrastructure, specialized staff, and management processes are all in place. A national public strategy to make cancer care fairer includes the proposed clinical plan as a crucial part. This is because breast cancer deaths will keep going up in Mexico until changes are made to the structure of the health care system to fix the current health inequalities.

Biography

María Isabel Sollozo Dupont, PhD, is a health systems specialist and senior researcher with extensive experience in the design, implementation, and evaluation of breast cancer screening, early diagnosis, and care programs in Mexico. She has led national initiatives at the National Cancer Institute focused on mammography quality, early diagnosis models, and equity-oriented breast cancer pathways, including programs aligned with WHO recommendations for middle-income countries. She has trained hundreds of radiologists in breast imaging and quality standards and has authored multiple peer-reviewed publications on breast cancer inequalities, screening coverage, and health system performance. Her work integrates public health, clinical pathways, and policy design to reduce disparities in breast cancer outcomes.



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Diagnostic performance of artificial intelligence in ultrasound imaging for predicting Pathological Complete Response (pCR) in breast cancer: A systematic review and meta-analysis

Background: Predicting Pathological Complete Response (pCR) to Neoadjuvant Chemotherapy (NAC) in breast cancer is essential for personalizing treatment. AI-assisted ultrasound has emerged as a promising non invasive approach, yet a systematic review specifically evaluating the diagnostic accuracy of AI-assisted ultrasound for pCR prediction remains limited.

Methods: We conducted a systematic review and meta-analysis of studies evaluating AI based models including Deep Learning (DL), Machine Learning (ML), and radiomics—applied to ultrasound imaging for pCR prediction in breast cancer patients undergoing NAC. Four databases (PubMed, Scopus, Web of Science, Cochrane) were searched from inception to May 2025. Study quality was assessed using QUADAS-2. A bivariate random-effects model was used to pool sensitivity, specificity, Diagnostic Odds Ratio (DOR), and the area under the Summary Receiver Operating Characteristic (SROC) curve.

Results: Twenty studies were included in the qualitative synthesis, of which nine were included in meta-analysis (n=2,271 patients). The pooled sensitivity was 0.82 (95% CI: 0.73–0.88) and specificity 0.85 (95% CI: 0.80–0.89), with an SROC AUC of 0.90 (95% CI: 0.87–0.93) and DOR of 26 (95% CI: 13–54). The deep learning subgroup yielded an AUC of 0.86. A negative test result reduced post-test probability of pCR to approximately 11%, underscoring strong performance. Significant heterogeneity was observed ($I^2=86\%$), partly due to threshold effects. No publication bias was detected (Deeks' test $p=0.88$).

Conclusion: AI-assisted ultrasound demonstrates high diagnostic accuracy for predicting pCR in breast cancer, offering a practical, radiation-free complement to conventional imaging. Prospective multicenter validation and standardization of protocols are needed before routine clinical implementation.

Keywords: Artificial Intelligence, Ultrasound, Breast Cancer, Pathological Complete Response, Neoadjuvant Chemotherapy, Deep Learning, Machine Learning, Radiomics, Meta-Analysis.

Biography

Dr Mohammad Faroug Al-awadh, general Surgery Specialist (MBBS, MRCS). University of Bahri, Khartoum, Sudan, awarded the Prize of Surgery during undergraduate studies. Research focuses on the application of artificial intelligence in surgery.



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Quercetin and low-dose gamma irradiation modulate oxidative stress, inflammation, autophagy, and apoptosis in DEN-induced hepatocarcinogenesis

Background: Diethylnitrosamine (DEN) induces hepatic injury and can promote hepatocarcinogenesis. Quercetin (QR) and Low-Dose Gamma Irradiation (LDR) have been explored as hepatoprotective and anticancer-modulating agents, but their combined effects in DEN-induced liver cancer have not been previously examined. Aim: To, for the first time, evaluate the novel combination of QR with LDR and compare its efficacy to QR or LDR alone in modulating DEN-induced liver cancer.

Methods: Hepatic injury was induced in ninety male rats by intraperitoneal DEN administration (75 mg/kg weekly for 3 weeks, then 100 mg/kg weekly for 3 weeks). After 6 weeks, hepatic injury establishment was confirmed histopathologically in a subset of rats. Animals were then randomized into five groups for an 8-week treatment period: (C) normal control; (DEN) no further treatment; (DEN+QR) quercetin (50 mg/kg/day, oral); (DEN+IR) fractionated low-dose γ -irradiation (0.25 Gy once weekly for 4 weeks, total 1 Gy); (DEN+QR+IR) combined QR+IR. The total experimental duration was 14 weeks.

Results: DEN induced severe hepatotoxicity, with significantly elevated serum ALT and AST compared to controls ($p < 0.001$). Markers of oxidative stress were markedly increased, while antioxidant enzymes and GSH were significantly reduced ($p < 0.001$). DEN also led to substantial activation of inflammatory and growth signaling pathways, including NF- κ B, STAT-3, mTOR, and p38 MAPK ($p < 0.001$). Autophagy markers ULK-1, LC3-II, and ATG5 were significantly suppressed, and a pro-survival shift was evident with reduced caspase-3 activity and increased BCL-2 expression ($p < 0.001$). Treatment with quercetin (DEN+QR)

or low-dose γ -irradiation (DEN+IR) alone significantly mitigated these alterations versus DEN, restoring liver enzymes, reducing oxidative stress and inflammation, and promoting apoptotic signaling ($p<0.001$). The combination therapy (DEN+QR+IR) produced the most pronounced effects, with greater normalization of all biochemical and molecular parameters compared to DEN and to either monotherapy ($p<0.001$). These changes were statistically superior to those observed with quercetin or irradiation alone ($p<0.01$). Flow cytometry confirmed enhanced apoptosis and altered cell cycle dynamics in the combination group. Histopathological analysis showed markedly improved hepatic architecture and the lowest pathology scores with combination therapy ($p<0.001$ vs DEN).

Conclusion: This study reveals, for the first time, a combined hepatoprotective effect of quercetin with low-dose gamma irradiation in DEN-induced liver pathology, suggesting new mechanistic insights and promising translational potential for combined therapy in DEN-associated liver injury and hepatocarcinogenesis.

Keywords: Hepatocellular Carcinoma, Diethylnitrosamine Rat Model, NF- κ B p65, P38 MAPK, Caspase-3, ATG5, LC3II, Nutrigenomics, Gene Expression.

Biography

Nermeen Mohamed Elbakary worked as Associate professor of Biochemistry at National Center for Radiation Research & Technology, Atomic Energy Authority, Cairo, Egypt. She earned her PhD degree in Biochemistry from the Faculty of Science at Ain Shams University in Cairo, Egypt. Her research work is focusing on cancer biology and the effect of radiation on the human body with these responsibilities, Planning and conducting experiments. She managed to author and co-author several articles in high profile journals such as discover oncology, life science, integrative Cancer Therapies, Technology of Cancer Research & Treatment, etc.; She supervised on many master and PhD scientific thesis in different universities in Egypt.



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Cancer care in conflict-affected regions: A scoping review of service delivery challenges, healthcare system adaptations, and policy implications

Background: Armed conflicts severely disrupt cancer care delivery, destroying infrastructure and limiting access to essential diagnostics and treatments. Evidence on service challenges, adaptations, and policy implications remains fragmented.

Methods: This scoping review of four databases (Scopus, PubMed, ScienceDirect, and CINAHL) was conducted for original peer-reviewed studies published between January 2020 and August 2025. The search focused on the effect of wars on cancer service delivery in conflict zones, and its impact on cancer care.

Results: Wars in conflict-affected countries like Palestine, Sudan, Syria, Iraq, Ukraine, and Afghanistan caused widespread destruction of cancer infrastructure, unsafe hospitals, and interruptions in chemotherapy, radiotherapy, and surgery. Countries faced shortages of specialized centers, technicians/radiologists, and medical records, alongside high costs and supply chain disruptions. Despite these challenges, healthcare systems demonstrated resilience through adaptations including Ukraine's MedEvac program for EU treatment evacuation, cross-border referrals (Iraq→Lebanon, Afghanistan→Pakistan), telemedicine, mobile diagnostic units, and community-based care models. Policy responses emphasized international aid coordination, conflict-sensitive health planning, and supply chain restoration.

Conclusion: Conflicts cause infrastructure destruction, workforce depletion/migration, treatment barriers/delays, drug supply disruptions, and psychosocial/economic impacts, which in turn create urgent policy/governance challenges. Although humanitarian aid may

provide temporary relief, sustainable solutions require peace and global commitment, grounded in equity and the fundamental right to health.

Keywords: War, Conflict, Oncology, Cancer, Conflict-Affected Settings, Humanitarian Health, Healthcare.

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.



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Nursing roles in early integration of palliative and supportive care for adults with advanced cancer: A scoping review

As the global cancer burden rises, adults with advanced cancer face significant physical and psychosocial symptoms requiring early integration of palliative and supportive care. Nurses in oncology, emergency, and community settings are central to symptom assessment, care coordination, communication, and advance care planning, yet their roles in early integration remain underexplored. This scoping review mapped nursing contributions to early palliative and supportive care for adults with advanced cancer and described related patient, caregiver, and system outcomes. A search of PubMed, CINAHL, Scopus, and ScienceDirect was conducted for English-language studies published between January 2016 and November 2025 involving nursing-relevant interventions in early palliative or supportive care. Fourteen studies were included: trials, observational studies, qualitative research, reviews, and a meta-analysis. Six domains emerged. Early integration consistently improved quality of life and reduced symptom burden. Nurse-led interventions increased end-of-life discussions and advanced directive completion. Telehealth and telephone follow-up proved feasible for symptom management. Studies noted moderate palliative competence but gaps in communication and structural support. Caregiver-focused interventions enhanced caregiver quality of life and self-efficacy. Conclusions: Nurses are pivotal in early palliative care. Expanding structured nurse-led models, strengthening communication training, and addressing organizational barriers are essential to deliver timely, person-centered care.

Keywords: Early Palliative Care, Oncology Nursing, Advance Directive, Supportive Care, Nurse-Led Interventions, Scoping Review.

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.



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Targeting Hypoxia Inducible Factor (HIF) through synergetic actions of active molecules found in some functional foods, an effective cancer therapy

The origin, growth and spread of various cancers follow some common regulatory paths. Although hundreds of genes are involved in this process, most of these paths are initiated and controlled by one dominant and central factor, the Hypoxia Inducible Factor 1 α (HIF-1 α). Therefore, instead of targeting individually several hallmark characters of cancer, scientists now attempt to seek a multifaceted approach by targeting this dominant factor, HIF-1 α .

Cancer cells have developed multiple paths in order to escape when a particular path is targeted as a survival mechanism. This is true while targeting HIF-1 α also as it involves multiple paths. This necessitates finding some multiple inhibitors from various sources to plug its multiple molecular paths. As most of the conventional therapies targeting this factor failed to yield desirable results, seeking solutions from non-conventional therapies has become imperative. In this connection, it is reported that many functional foods having good amount of anti-cancer compounds are recommended and consumed for combating against cancer. Among them some are said to be very effective in controlling HIF-1 α by acting on different molecular pathways. By this means, a possible synergistic mechanism is proposed in inhibiting the various molecular pathways of HIF-1 α more effectively through varied molecular mechanisms of the active compounds found in the selected functional foods.

Biography

The author Dr. S. Paulraj has got his degree in Ph.D. in Zoology. He was affected by colon Cancer stage 3a and underwent, surgery, Chemotherapy followed by alternative therapy using some herbal products. He is benefitted by this treatment protocol and now he is free from Cancer after 13 years of Cancer free normal life. He started doing research on the efficacy of some herbal products in treating Cancer based on his research & experience and published a book in a regional language on this subject for the benefit of local people. He has written several review articles on the use of alternative treatments for Cancer which are published in some international Journals. One of his latest paper findings was presented in one recent international conference on Cancer held in Dubai. The present paper is his latest review paper on alternative cancer therapy.



Phillip Bretz

Visionary Breast Center, United States

What in breast cancer is so beautiful it has to be right?

Breast cancer is one of the last things that bring to mind the word beautiful. But what if there was something beautiful about breast cancer missing from the equation of diagnosis and treatment for all this time? What if there was a way to diagnose nascent tumors before they attained the capacity to metastasize, kill it in-office in 20 minutes (no huge cancer center needed) with the patient fully awake with her significant other by her side, and normal activity is resumed immediately? It was all accomplished for \$2,500.00.

The United States Preventive Services Task Force (USPSTF) saw fit years ago to decree that women in the US need not start mammography until age 50, and only recently lowered it to 40 but still biennial. Medicare and insurance companies take these pronouncements as gospel so obtaining a mammogram outside these parameters is very difficult. How dare they make these decrees implying a correct blanket statement for all women.

A case in point is the prestigious group, The American College of Surgeons Oncology Group, published a paper in 2009 which at the time was the largest study of outcomes in breast cancer for African American women. One of the main conclusions was that these women get breast cancer much earlier (in their 30s) and it's much more aggressive (triple negative). Does anyone care?

To think for one second that blanket statements can be made in such a complex disease as breast cancer and apply those statements to all women is ludicrous, shameful and as it turns out extremely harmful. An individual surveillance plan is needed.

So, what's beautiful about breast cancer? Here, diagnosing nascent tumors, killing it in-office with the patient awake, the breast looking untouched with normal activity resumed

immediately, no surgery. no chemotherapy no radiation. Lavender is being actively suppressed.

Biography

Upon completion of his surgical residency at Loyola University in Chicago, he spent 30 years on the active surgical staff at Eisenhower Medical Center in Rancho Mirage, CA. While he spent 9 years on the open-heart surgical team where at that time the team had the privilege of performing First Lady Betty Ford's open-heart surgery. Since then, he was the founder of the first comprehensive breast center in the Coachella Valley in 1988. He was the author of his country's first large-scale breast cancer prevention clinical trial using Tamoxifen (FDA IND 34,223). Since then, he has pioneered The Lavender Way/Lavender Procedure a method to treat breast without surgery, no chemotherapy, no radiation, and no hospital.



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Stress induced cancer and cancer induced stress outcomes on patient psychological personality

This study aims to investigate the profound interplay between lifestyle, environmental factors, and the psychological burden of a cancer diagnosis. While medical advancements have improved survival rates, the diagnosis frequently triggers a severe "fear psychosis," characterized by neurotic anxiety and hypochondriacal delusions, often rooted in the persistent misconception that the disease is incurable.

The research study involves: (a). Assessment of Psychological Impact: To evaluate how the transition from a "healthy individual" to a "cancer patient" disrupts adaptive capacity and induces differential levels of physical and psychological stress. (b). Analyzing Stress Variability: To examine why emotional responses and psychiatric symptoms vary among individuals, despite facing similar diagnostic or treatment protocols. (c). Identification of Barriers to Early Detection: To explore how ignorance, "cancer phobia," and the asymptomatic nature of early-stage phenotypes contribute to late-stage (Stage III and IV) clinical presentations. (d). Evaluation of Treatment-Related Trauma: To document the emotional consequences of undergoing intrinsically unpleasant conventional modalities, including surgery, cytotoxic chemotherapy, radiation etc., and their impact on blood & tissue level changes. Ultimately, this study seeks to highlight the necessity of integrating psychological support with clinical oncology to mitigate the harsh emotional impacts that currently hinder patient recovery and quality of life.

Biography

Dr. K. Ramalingam obtained his Ph.D., and D.Sc., in Zoology from the University of Madras, Chennai, India. He is having a teaching experience of 35 years and research experience

of 50 years in Applied Toxicology, Immuno-technology and Cancer Biology. He has to his credit around 300 publications in National and International Journals. He has published 7 books on Human health and cancer. Promoted 23 Ph.Ds. under his supervision. He has worked as Research Associate in Indian Council of Medical Research and Zoological Survey of India. He worked as Co-Ordinator and Senior Scientist in Mediclone Biotech company. He has also worked as Senior Project Scientist at Chennai Snake Park, Chennai, India. He has handled classes for Environmental toxicology, Immuno-technology and Immunology for M.Sc., and M.Phil. courses.



Ratan Kumar Sarkar

Independent Researcher, India

Cardiotoxicity in cancer treatment

The cancer drugs (SBDD) generally blocks cell signaling but it also blocks disintegration of lunar gravity (705) and electronic time (27 or $27 \times 0.0019 = 0.0513$ or 513) that would not co-exists driving to protein synthesis until neutralization of 27 e.g. $609(\text{AFP}) + 291 = 900$ where $609 - 291 = 318 = 291 + 27$ and $705(\text{lunar gravity}) + 513(\text{electronic time}) = 1218$ or 318. While $777 - 705 = 72$ (or 468, $72 \times 0.0019 = 0.1368$ or 468) and conversely $777(\text{Earth's or Lunar Time}) + 705 = 1482$ or $582 = 900 - 318$ causes cardiotoxicity.

Proliferation Mechanism: The two components 539 (or 955 or 164) and 329 (or $32 \times 23 = 736$) makes $736 + 164 = 900$ while $539 + 329 = 868 = 900 - 32$. If 32 transferred beyond 900 proliferation initiates making a difference of $100 = 967(193) - 868 = 99$ with a directional difference of 1 i.e. 100 where $67 + 55$ (i.e. $955 = 122 = 222(\text{CC}) - 100$ and $55 + 32 = 87 = 222 - 135(\text{A})$ that linked to t-RNA. Again, $193 + 100 = 293$ (differential form of 329) and $109 + 32 = 141$ (or 679) causing influx of electro-gravitational impulses (107) where $141 + 107 = 248$ that compatible to histidine (155.1552) structure.

Ponatinib (532.560 g/mol): The drug is associated with T315I mutation where the core values of Threonine ($119.1197 = 119 \times 0.0019 - 0.1197 = 0.1064$ or $1064 = 532 \times 2$) and that of Isoleucine ($131.1736 = 753 = 533 + 220$ (i.e. 560×2) and $532 + 560 = 1092 = 777 + 315$ and conversely, $705 - 513$ (reverse of 315) $= 192 = 195 - 3$ where $705 + 195 = 900$. In downstream pathways of TKI $= 281 + 106$ (influx) $= 387$ that neutralizes by $387 + 3 = 390$ (tyr neutral point) $= 777 - 387$ and $705 - 390 = 315$. The values 192 is reverse blocking of 291 and $315 + 3 = 318$ in the structure causing cardiotoxicity.

BRAF V600E metastatic melanoma: The mutational values=754(val core values)–594(glu core values under suppression)=160=159+1 and conversely 754+594=1348 or 448=449–1 where $15 \times 51 = 765 = 900 - 135$ and $44 \times 44 = 1936$ or 136 shows positive and negative meeting at a point causing cancer where 29 (i.e. $734 - 705$) + 106 (influx) = 135 (A, a t-RNA factor).

The drug Vemurafenib(489.920) shows $705 + 215$ (i.e. $109 + 106$) = 920 and $777 + 512$ (reverse of 215) = 1289 or $389 = 489 - 100$ (blocking) and $318 + 171$ (directional change) = 489 causing cardiotoxicity.

Ventoclox(868.440): It is seen $868 + 440 = 1308$ (or 408) = $736 + 572$ (intrinsically) where $868 = 539 + 329$ and $440 = 539 - 99$.

Doxorubicin(543.520): A natural product used in chemotherapy where $543 + 520 = 1063$ or 163 where $571 - 163 = 408$ and $1308 - 765$ (i.e. 159) = 543 and correspondingly $582 \times 2 = 1164 = 1063 + 101$ shows cardiotoxicity.

Ivabradine(468.585) and Dexrazoxane(268.269): The two drugs shows analogy in a way $468(72) + 585 = 1053$ or $153 = 513 - 360$ (i.e. $359 + 1$) and $585 - 468 = 117$ where $26 \times 62 = 1612$ or 712 (reverse of 117) and $712 - 513 = 199 = 468 - 268$ with a directional difference of 1. Mathematically, $153 + 117 = 270 = 540/2$ or $36 \times 2 = 72$ where $540 = 468 + 72 = 734 + 705$, breaking the fusions in treatment.

Biography

Ratan Kumar Sarkar graduated with a B.Sc. from the University of Calcutta and has published over twenty research papers in Scientific and Academic Publishing journals.



Saumya Pandey

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Impact of matrix metalloproteinase [MMP]-2 (2735C>T) and Tissue Inhibitor of Metalloproteinase [TIMP]-2 (2418G>C) gene polymorphisms with human papillomavirus-mediated cervical cancer: Emerging trends in gynecologic oncology

Objectives: Inflammation is a hallmark of HPV-mediated cervical cancer; Matrix Metalloproteinase [MMP]-2 and Tissue Inhibitor of Metalloproteinase [TIMP]-2 are emerging as pivotal players in inflammation and carcinogenesis. My study aimed to evaluate the role of MMP-2 (-735C>T) [rs2285053] and TIMP-2 (-418G>C) [rs8179090] gene polymorphisms in HPV-mediated cervical cancer susceptibility in North Indian women.

Methods: Hospital-based case-control epidemiology study in Lucknow, Uttar Pradesh, India; power-analysis sample size was calculated by Quanto-software (version1.0) with input of variables: significance-level (α)<0.05 (2-sided), model-of-inheritance:log additive, allele frequency lowest in controls, genetic effect for Odds Ratio (OR) $\geq$ 1.65 yielding >80% statistical power: N=400 study subjects viz. 200 histopathologically confirmed cervical cancer cases and 200 healthy controls: age-matched and similar ethnicity i.e. North Indian. Genomic DNA extraction from peripheral blood samples collected from study-subjects was carried out using salting-out method. MMP-2 and TIMP-2 genotyping was performed using polymerase chain reaction-based restriction fragment length polymorphism. χ^2 goodness-of-fit test was used for any deviation from Hardy-Weinberg equilibrium in controls; chi-square analysis was utilized to determine differences in genotype and allele frequencies. Binary logistic regression was applied to estimate age-adjusted Odds Ratio (OR) with Bonferroni's correction for multiple comparisons.

Results and Conclusions: My findings demonstrated no significant association between MMP-2(-735C>T) and TIMP-2 (-418G>C) gene polymorphisms and risk of developing cervical cancer in the study-population. Interestingly, stratified-analysis using a case-only approach revealed no effect of MMP-2/TIMP-2 polymorphisms on early (FIGO I, II) and advanced stages (FIGO III, IV) of cervical cancer; MMP-2 and TIMP-2 polymorphisms did not modulate risk in cervical cancer patients who smoked tobacco/cigarettes. Overall, my innovative study demonstrated lack of association between MMP-2 and TIMP-2 gene polymorphisms and cervical cancer susceptibility in women of North Indian ethnicity; HPV-genotyping suggested that higher the viral load in terms of test cut-off value, higher was susceptibility to develop cervical cancer. Therefore, understanding the ecological diversity of HPV prevalence and genotype distribution among genetically susceptible populations in different geographical regions worldwide is essential for optimizing HPV screening, vaccination and maximizing cost-effective public health-oriented strategic efforts for pragmatic evidence-based cervical cancer prevention. Further, bio-specimens viz. HPV-mediated cervical cancer patients' blood, tissue, DNA, and oocytes may be collected and frozen/stored for long-term usage in individualized pregnancy/family-planning post-cancer chemo-radiotherapy treatment and/or conducting multi-centric public health-gynecologic oncology causal association prevention-epidemiology studies in fertility preservation amongst cervical cancer patients/susceptible women of varying genetic landscapes and socio-cultural exposures.

Biography

Dr. Saumya Pandey, possesses brilliant academic credentials with Post-Doctorate: Biochemistry-Molecular Biology, Graduate-School-of-Biomedical-Sciences, University of Texas Medical Branch (UTMB), Galveston, TX, USA/Visiting Scientist: Urology (Robotic-Prostatectomy), James Buchanan Brady-Foundation,-Lefrak Center of Robotic-Prostatectomy, Department of Urology, New York Presbyterian-Weill Cornell Medical College, New York, NY, USA/Doctorate: Ph.D. Life Sciences, Sanjay Gandhi Post-Graduate Institute of Medical Sciences, Lucknow, UP, India-ChhatrapatiShahujiMaharaj University, Kanpur, UP, India/Doctoral Research Fellowship: Biomedical Sciences, Creighton University, Omaha, Nebraska, USA/M.Sc. Biochemistry, University of Lucknow, Lucknow, India, and recently worked as Faculty-Research, Amity University, Lucknow, India and Head-Clinical Research, IndiraIVF-Hospital, Udaipur-Lucknow, India with 61 senior-lead authorship publications in international journals.



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Personalized and precision oncology as a unique avenue to have the healthcare model renewed to secure the national biosafety: To get cancer treated or cured?

To achieve the implementation of Personalized & Precision Oncology (PPO), it is necessary to create a fundamentally new strategy based upon the recognition of biomarkers long before the disease clinically manifests itself. And personalized tumor molecular profiles (uniting genomic and phenotypic ones), tumor disease site and other patient characteristics are then potentially used for determining optimum individualized (preventive, prophylactic, canonical and rehabilitative) therapy options to be tailored and applied for.

Each decision-maker values the impact of their decision to use PPM/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 compile and integrate available scientific knowledge on cancer-associated abnormal genes and gene products and their implications for cancer therapy. And thus data harvesting from different databanks for applications such as prediction and personalization of further treatment to thus provide more tailored measures for the patients resulting in improved patient outcomes, reduced adverse events, and more cost effective use of the latest health care resources including diagnostic (companion ones), preventive and therapeutic (targeted molecular and cellular) etc. The latter requires the incorporation of information from multiple data sources, linking the functional effects of altered genes to potential therapy options into a central repository that can be easily accessed and utilized by physicians and patients.

This complex and unique process provides a thorough and fairly exhaustive resource for physicians and patients to use as a PPM-based cancer therapy option that is designed to be highly clinically applicable.

PPM/PPO are most likely to play a great role in cancer management and treatment. And 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 genetic and molecular information regarding a patient's cancer is being used for PPM/PPO-based treatments.

Meanwhile, a lack of the 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 PPO! So coordination of all health care stakeholders has become more important than ever to unite oncologists, pathologists, and payers to work with Big Pharma and Biotech to develop products, services, and coverage policies that would improve patient outcomes and lower overall health care costs for institutions that put personalized regimens in place. This is the reason for developing global scientific, clinical, social, and educational projects in the area of PPM/PPO to elicit the content of the new branch and to stress the impact and benefits of the latter.

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 the I.M. Sechenov Moscow Medical Academy and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia. From 1989 through 1995, Dr Suchkov was being 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, Dr Suchkov was a Secretary-in-Chief of the Editorial Board, Biomedical Science, an international journal published jointly

by the USSR Academy of Sciences and the Royal Society of Chemistry, UK.

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

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Patient-derived organoids as integrative models of tumor heterogeneity, cancer evolution, and therapeutic response

Patient-Derived Organoids (PDOs) provide a unique opportunity to study cancer as an evolving, heterogeneous disease while retaining clinically relevant features of individual tumors. We are developing integrated organoid platforms spanning Barrett's Esophagus (BE), Esophageal Adenocarcinoma (EAC), and gastroesophageal malignancies to investigate how genetic susceptibility, acquired genomic alterations, epigenetic dysregulation, and structural genome evolution shape tumor initiation, progression, and therapeutic response.

These models enable long-term study of epithelial states that are hard to analyze in standard cell lines or bulk tumors. Combining PDOs of premalignant, primary, and advanced disease with genomic and epigenomic profiling allows us to see how early genetic risks and chromatin changes drive cancer- promoting transcriptional programs and therapy-resistant cell states. Functional and drug-response studies test whether these states create actionable dependencies.

Tumor heterogeneity is addressed by integrating organoid findings with single-cell, spatial transcriptomic, and epigenomic datasets from patient tissues. This maps organoid programs to native tissues, revealing epithelial states, stromal interactions, and signaling networks linked to malignant progression and metastasis. In advanced tumors, we investigate ecDNA as a source of oncogene amplification, copy- number plasticity, and intratumoral diversity. ecDNA-positive PDOs serve as systems to study their evolution under therapy and resistance.

Long-read sequencing adds an important complementary layer by resolving structural variants, complex amplicons, ecDNA architecture, haplotypes, and transcript isoforms that

short-read approaches may incompletely capture. Integrating long-read genomics with spatial profiling, epigenetic mapping, and functional organoid assays enables molecular architecture to be connected directly with phenotype and therapeutic vulnerability.

This framework sees PDOs as patient-specific systems for reconstructing cancer evolution at multiple scales, aiding biomarker discovery, understanding tumor heterogeneity and resistance, and guiding personalized therapies to improve precision oncology. It connects mechanistic research, biomarker development, therapeutic testing, and disease modeling.

Biography

Dr. Shilpa S. Dhar is an Assistant Professor in GI Medical Oncology at MD Anderson Cancer Center and a faculty member at UTHealth Graduate School of Biomedical Sciences. Her research focuses on epigenetic regulation in gastrointestinal cancers, Gastric Adenocarcinoma (GAC), and esophageal adenocarcinoma, with key discoveries on histone modifiers. Driven personally by her family's experience with GAC, she integrates molecular biology and translational research, utilizing mouse models, spatial transcriptomics, and epigenomics. Dr. Dhar has authored several high-impact publications and is a dedicated mentor to trainees at all levels.



Stephan Bodis

University Zurich; IT IS Foundation Zurich, Zurich Ethics Committee, Switzerland

Communication challenges in oncology

Introduction: Patient information during therapies and follow-up needs to be constantly adapted for a flawless integration of complex oncologic therapy concepts into clinical routine. This is a key step for an optimal, individualized patient information and guidance and, ultimately, also for patient outcome. Training in communication skills for medical staff is well established during medical school and residency training. But the fine-tuned communication in stressful situations to patients should also continuously be trained with all oncology staff (e.g. multimodal therapies, in emergency rooms, for end-of-life decisions, for novel therapies in clinical studies).

Method: Narrative Medicine in oncology might be a useful tool to further improve patient conversations in oncology. It respects the patient's intimacy and privacy due to the anonymous text and can be used widely as a teaching tool. Narrative medicine can also be used to transfer critical medical information from health care staff to patients and their families. With the anonymous story telling this critical information comes from a certain distance but is still perfectly adapted to the personal needs of patient and families. The potential benefit for the introduction of story-telling in selected patient discussions and for staff teaching will be discussed.

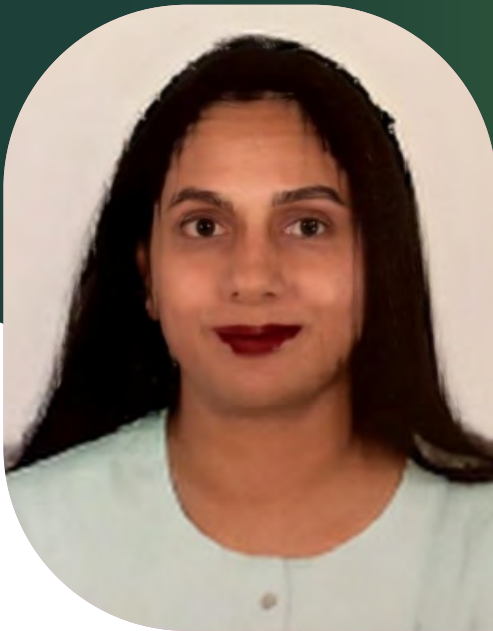
First Results: A few, carefully selected examples of critical moments in a oncology patient-staff communication using narrative medicine will be presented.

Discussion and Outlook: Carefully designed cohort studies with/without added narrative medicine into patient information and guidance during oncologic therapies might be needed as a proof of concept in the near future. Only with a documented benefit in a clinical study setting, story-telling could be integrated as "evidence based" in the systemic patient information in interested oncology departments.

If and how AI could further support or even replace human story-telling with a better tailored, more concise individualized patient microstory information booklet for carefully chosen specific patient's situation during a radiation oncology therapy is an attractive thought, but highly speculative today.

Biography

Stephan Bodis began his medical studies in 1978 at the University of Fribourg in Switzerland and completed them in 1984 at the University of Basel. He then worked in the Department of Internal Medicine at the Cantonal Hospital of Baden until 1987 and at the University Hospital of Zurich until 1989. From 1989 to 1991, he was a Fellow of the European Society for Medical Oncology (ESMO) and also a Research Fellow in the Department of Hematology/Oncology and Molecular Pharmacology at the Gustave Roussy Institute in Villejuif near Paris. This was followed by a clinical and research residency and fellowship in radiation oncology at the Joint Centre for Radiotherapy at Harvard Medical School in Boston and at the Massachusetts Institute of Technology, Department of Biology, Cambridge, until 1995. From 1995 to 2003, Bodis was a senior physician and head of the Laboratory of Molecular Radiobiology at the University Hospital of Zurich. In March 1998 he was appointed Privatdozent at the University of Zurich, and in 2004 he was appointed Titular professor. From 2003 to 2021, Stephan Bodis was Director of the Institute of Radiation Oncology at the Aarau Cantonal Hospital, and from 2015 to 2021, he was Head of the Radiation Oncology Centres at the Aarau and Baden Cantonal Hospitals. In September 2012, he became a member of the Faculty of Medicine at the University of Zurich (Associate Professor).



Dr. Swetha Manjappa

Movius, India

The patient at the centre: Balancing AI automation, human oversight and patient-centered cancer care

Artificial intelligence is increasingly being introduced into healthcare to address the growing burden of repetitive clinical and operational activities. However, the key question is not whether artificial intelligence can replace clinical work, but which activities can be responsibly automated, where human oversight must remain essential, and how the patient remains at the centre of care.

This presentation explores a clinician- and patient-centric approach to applying artificial intelligence in oncology, with a particular focus on head and neck cancer care. In longitudinal cancer care, healthcare teams repeatedly collect patient information, conduct follow-up conversations, capture symptoms and patient-reported outcomes, assess quality of life, document clinical interactions and identify patients who require further attention. These activities are essential, but many are structured and repetitive.

Artificial intelligence and conversational systems can potentially support these activities by engaging patients through structured conversations, capturing responses, organizing information and generating longitudinal summaries. Voice-based AI can provide an additional layer of patient engagement, particularly for routine follow-up and structured data collection. However, AI should not independently replace clinical judgment or make treatment decisions. The proposed model is based on a human-in-the-loop approach. AI performs high-volume, repetitive tasks; clinicians review and interpret the information, determine the significance of findings and make clinical decisions; and patients remain active participants rather than simply becoming sources of data.

The presentation will discuss practical applications across follow-up, patient-reported outcomes, quality-of-life assessments, symptom monitoring, clinical documentation and longitudinal patient engagement in head and neck cancer. It will also address implementation challenges including conversational accuracy, inappropriate AI inference, data quality, escalation pathways, patient safety, transparency, traceability and clinician trust.

The objective is to demonstrate that responsible healthcare AI should not be designed around the question, “What can AI replace?” Instead, the focus should be on “What repetitive work can AI take away from clinicians while preserving human judgment, accountability and meaningful patient interaction?”

The proposed balance is simple: automate the repetitive, augment the complex, keep the clinician accountable, and keep the patient at the centre.

Biography

Dr. Swetha Manjappa is a dentist and healthcare professional with more than 19 years of experience spanning clinical research, oncology and artificial intelligence in healthcare. Her experience includes clinical data management, pharmacovigilance, project management, drug supply management, Interactive Response Technology (IRT) and oncology clinical site management, followed by work in AI-enabled healthcare product development. She is an inventor on the published U.S. patent application “Clinician Responsible AI Companion” (US20260051412A1) and has published on ethical AI integration in clinical settings. Her work focuses on applying AI to reduce repetitive clinical workload while maintaining human oversight, clinical accountability and patient-centred care.



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An artificial intelligence road map to unlocking future technologies and transforming radiology practice

Today, Artificial Intelligence (AI) is one of the hottest buzzwords in technology. It is at the center of the global technological revolution, envisaged to replace or enhance human capabilities in the coming times. With AI projected to be one of the major disrupting forces in the future, this article engages with several scientific sources to highlight the step-by-step progress made since the inception of AI from the Turing test to the much-celebrated ChatGPT's (generative pre-trained transformer) launch, evolution in medical imaging (from early X-ray techniques to sophisticated AI-driven systems), and current research landscape, examining how AI gain can revolutionize radiology practice, while also pointing out pitfalls and future research directions. AI was found to be very useful across every aspect of the radiology work chain (diagnostic and therapeutic components all encompassing), such as scheduling and worklist management, image segmentation and classification, diagnosis, image measurement and assessment, image acquisition and reconstruction, and prediction. However, ongoing concerns were seen around cost, hardware limitations, data quality and quantity, bias, data privacy, training of users, transparency, and regulatory oversight. Several recommendations were then made to include extensive model training on large, diverse datasets/validation, creative research to address the black box phenomenon, AI integration with both virtual and augmented reality to improve models' robustness, regular user trainings and interdisciplinary collaborations, and developing regulatory frameworks (on data governance, transparency, cybersecurity, ethical issues, and post-market surveillance).

It is foreseen that concerned authorities, now thoroughly furnished with knowledge on the historical antecedents upon review of this article, will take the necessary action to address these concerns, putting into consideration AI strategy, AI engineering, stakeholders' engagement, and regulatory/ethical concerns.

Biography

Award-winning scholar, Author, Editor, Educator, Mentor, Senior lecturer and Programme lead in Diagnostic Radiography at Health Sciences University, UK; with several publications and numerous national/international awards and accolades, including scholarships for both MSc (UK) and PhD (Malaysia) studies in 2020 and 2022 respectively, proficiency in ICT (AfriHub scholarship, 2010), distinction in undergraduate research (Nigeria, 2016), distinction in global health research (UK, 2022), outstanding author award (JMAI, 2024), outstanding oral presenter (Thailand, 2024), scholar council (Australia, 2025), expert- medical imaging and therapeutics conference (USA, 2026), technical programme committee- international conferences on AI, signal processing and applications (China, 2026, Vienna, 2026, Spain 2026), to mention but a few. Research areas include AI, medical imaging, radiography education, public health and radiology.



Vladan Radosavljevic

Institute of epidemiology, Military Medical Academy, Belgrade, Serbia

Radosavljevic urinary screening biomarkers of the key chemical carcinogens (in general and some applications)

Background or Introduction: Chemical carcinogens classified by the International Agency for Research on Cancer (IARC) as Group 1 very probably contribute to cancer occurrence in over 13.5 million people and death from cancer in over seven million people. In percent, chemical elements and chemical compounds very probably contribute to cancer occurrence in about 68% of all cancer cases and very probably significantly contribute to cancer death in about 72% of all cancer deaths (yearly and globally). There are two main reasons for increasing cancer cases in the next decades: first, growing of the world population and, second, un-proportional growing of the elderly population. Consequently, by 2050, the number of cancer cases predicts to reach 35 million. The mentioned chemical carcinogens were used for decades without proper evaluation of their health effects.

Aims: Early detection is crucial as most carcinogens have cumulative effects. Identifying urinary markers of exposure can help detect, eliminate, or reduce sources of carcinogens, advancing preventive oncology. While complete eliminating carcinogens is impossible, improving detection and monitoring-especially through specialized urine analysis-can help define preventive measures to lower carcinogen levels in the body.

Methods: Described screening protocol is applicable in any location with HPLC (High Performance Liquid Chromatography) and ICP (Inductively Coupled Plasma) devices. They are non-invasive, quick, effective, affordable, and inexpensive requiring only urine samples. Findings: This screening protocol aims to develop, improve, and implement screening protocol for many malignant diseases and many non-communicable diseases like cardiovascular, endocrine, neurological, hematological, dermatological, and infertility.

Implications: It supports medical professionals in interpreting HPLC and ICP urinary analyses and providing guidance on reducing or avoiding carcinogen exposure. In some cases, doctors may identify sources of exposure and inform authorities to address and eliminate these hazards.

Applications: Bladder Cancer

Background or Introduction: There is no generally accepted, routine screening for Bladder Cancer (BC), which is among the ten most common malignancy in men and the most expensive cancer to treat.

Aims: The aim of the study was to examine the possibility of using the urinary concentration of 1-hydroxypyrene for screening high-risk male individuals for bladder cancer.

Methods: Radosavljević urinary screening used for the key chemical carcinogens.

Findings: Numerical data were arithmetic mean with standard deviation or median with interquartile range, while categorical data shown as percentages. Two independent samples compared by Student t-test or Mann-Whitney U test, depending on the data distribution. Normality evaluated by Shapiro-Wilk test and box plots. The analysis performed in statistical software IBMSPSS ver. 29. This case-control study comprised 117 urinary bladder male cancer patients and 110 healthy male controls. The average age of patients was 67.86 ± 9.94 years, while for controls was an average of 82.95 ± 7.62 years. The mean urinary values of 1-hydroxypyrene at 1st measurement – in patients 205.0 pg/ml (IQR=116.5-456.5) and in controls 136.5 pg/ml (IQR=76-374.5) with statistically higher values in urinary bladder male cancer patients than in controls ($p=0.020$). At 2nd measurement – in patients 183.0 pg/ml (IQR=141.8-407.3) and 137.0 pg/ml (IQR=73-353.0) with statistically higher values in urinary bladder male cancer patients than in controls ($p=0.013$). 1-Hydroxypyrene results were higher in bladder cancer patients group, but determination of 1-hydroxypyrene alone in urine is not sufficient for urinary screening of bladder cancer in men.

Implications: We suggest that HPLC and ICP analysis urinary biomarkers from other chemical carcinogens incriminated as causes of bladder cancer, from Group 1 carcinogens according to IARC.

Application: infertility

Aims: The aim of the study was to show the possibility of using the urinary screening biomarkers of the key chemical carcinogens responsible for fighting against infertility.

Methods: Radosavljevic urinary screening of key chemical carcinogens used.

Findings: The chemical carcinogens discussed used for decades without proper evaluation of their health effects, costing millions of lives. Considering the long-term health impacts of current products is critical. Early detection is crucial as most carcinogens have cumulative

effects. Identifying urinary biomarkers of exposure can help detect, eliminate, or reduce sources of carcinogens, advancing fighting against infertility. Here is the focus on Group 1 chemical carcinogens classified by the IARC.

Keywords: Urinary Screening, Chemical Carcinogens, Malignant Diseases, Non-Communicable Diseases.

Biography

Vladan Radosavljevic invented, formulated, and published: 1) Radosavljevic's urinary screening of biomarkers of chemical carcinogens; 2) Radosavljevic – Belojevic method of epidemic differentiation. He graduated (1991), specialized (1995), and received his doctorate (1999) in epidemiology at the Medical Faculty of the University of Belgrade, Serbia. He was the head of the Department of Epidemiology and deputy director of the Military Institute for Preventive Medicine in Belgrade from 2003 to 2010, and head of military preventive medicine from 2010 to 2020 in the Ministry of Defense of Serbia. In 2020 he moved to the Institute of Epidemiology of the Military Medical Academy, Belgrade, where he works as an expert epidemiologist. He was a professor at the Biological Weapons course at the Military Academy of the University of Defence in Belgrade and a research associate at the Epidemiology course. Since 2015, Dr. Radosavljevic is a United Nations expert on biological weapons within the mechanism of the United Nations Secretary General. Current focus in his research is implementing “Radosavljevic's urinary screening of biomarkers of chemical carcinogens” in medical prevention malignant and other noncommunicable diseases as well as epidemiology.

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Camilla Leite, Giovana Paro,
Luna Rossi, Maria Carvalho,
Manuela Panaggio

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Lung cancer mortality in the Brazilian adult population according to sociodemographic and regional characteristics: An ecological time-series study, 2013–2023

Background: Lung cancer remains a major cause of cancer-related mortality worldwide. In Brazil, despite advances in tobacco-control policies, mortality patterns may vary according to sociodemographic and regional characteristics, highlighting important inequalities in the burden of the disease.

Objective: To analyse lung cancer mortality in the Brazilian adult population according to sociodemographic and regional characteristics from 2013 to 2023.

Methods: This ecological, descriptive, observational study used secondary data from the Brazilian Mortality Information System (SIM), available through the TABNET/DATASUS platform. Deaths due to malignant neoplasms of the bronchi and lungs (ICD-10 code C34) among individuals aged ≥ 40 years between 2013 and 2023 were included. Variables analysed were sex, age group, region of residence, race/skin color, and educational level. Data were analysed using descriptive statistics, including absolute and relative frequencies and mortality rates per 100,000 inhabitants.

Results: A total of 307,040 lung cancer deaths were recorded during the study period. Most deaths occurred among males (56.89%), although mortality rates progressively increased among females over the years. Individuals aged 60–69 years accounted for the largest proportion of deaths (30.85%), followed by those aged 70–79 years (29.50%), while the highest mortality rate was observed among individuals aged ≥ 80 years. The White population accounted for 60.51% of deaths, followed by the Brown population (29.28%).

Regarding educational level, deaths were more frequent among individuals with 1–3 years (23.40%) and 4–7 years (22.37%) of schooling; however, 16.17% of records had unknown educational information. Regionally, the Southeast accounted for the largest proportion of deaths (45.47%), followed by the South (23.79%) and Northeast (19.39%). The South presented the highest mortality rates throughout the analysed period, whereas the North had the lowest. A slight increase in mortality rates was observed across all regions from 2022 onward.

Conclusion: Lung cancer mortality in Brazil from 2013 to 2023 showed important sociodemographic and regional differences, with a greater burden among males, older individuals, and populations living in the Southeast and South regions. The findings reinforce the need for continued surveillance and public policies aimed at reducing risk factors and inequalities in access to healthcare.

Biography

Catarina Chati is a medical student at Faculdade São Leopoldo Mandic in Campinas, Brazil. She is actively involved in scientific research, with experience in epidemiology, clinical research, and data analysis. Her academic interests include oncology, public health, and clinical medicine. She has participated in research projects investigating population-based health outcomes and is currently engaged in the Principles and Practice of Clinical Research (PPCR) program at Harvard T.H. Chan School of Public Health. She is committed to developing her skills in evidence-based medicine and contributing to clinically relevant research.



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Ferroptosis-independent lysosomal membrane permeabilization and autophagic dysfunction induced by curcumin in H1299 lung cancer cells

Ferroptosis is an iron-dependent form of regulated cell death characterized by excessive lipid peroxidation and oxidative damage to cellular and organelle membranes. Because lysosomes are membrane-bound organelles that are particularly susceptible to oxidative injury, ferroptosis-associated membrane damage may compromise lysosomal integrity and promote Lysosomal Membrane Permeabilization (LMP). As lysosomes are essential for autophagic degradation, such membrane destabilization may further disrupt autophagic homeostasis. However, whether ferroptosis contributes to curcumin-induced LMP and autophagic dysfunction remains unclear. In this study, we investigated the relationship among ferroptosis, LMP, and autophagic dysfunction in human H1299 lung cancer cells exposed to curcumin. Curcumin markedly increased intracellular Reactive Oxygen Species (ROS), particularly superoxide ($O_2^{\bullet-}$), and induced mitochondrial membrane depolarization. These effects were substantially attenuated by the superoxide scavenger MnTBAP and antioxidants, including N-Acetylcysteine (NAC), Glutathione (GSH), and Dithiothreitol (DTT), indicating a critical role for oxidative stress. Curcumin also increased LC3-I/II expression and GFP-LC3 puncta formation, whereas the expression of the autophagy-related proteins ATG5, ATG7, and Beclin-1 was decreased, suggesting disruption of autophagic processing. In parallel, curcumin induced progressive LMP, which was markedly attenuated by MnTMPyP and NAC, demonstrating that lysosomal membrane destabilization was ROS dependent. Because ferroptosis is closely associated with oxidative membrane injury and lysosomal regulation, we further

examined whether ferroptotic signaling mediated curcumin-induced lysosomal damage. However, pharmacological inhibition of ferroptosis failed to prevent curcumin-induced LMP or substantially rescue cell viability. These findings indicate that, although curcumin induces oxidative stress and membrane-associated alterations potentially compatible with ferroptotic signaling, ferroptosis is not a major mediator of its lysosomal effects. Collectively, curcumin induces ROS-dependent LMP and disrupts autophagic homeostasis in H1299 lung cancer cells through a mechanism largely independent of ferroptosis. These findings distinguish curcumin-induced lysosomal and autophagic dysfunction from canonical ferroptotic cell death and identify a ROS–lysosome–autophagy axis underlying curcumin-induced cellular stress.

Biography

Jian-Hong Lin is a Research Assistant in the Division of Experimental Surgery, Department of Surgery, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan. His research focuses on cardiac and cellular physiology and stem cell biology, with particular interests in ischemia-reperfusion injury, regulated cell death, cell differentiation, natural products, Chinese herbal medicine, and drug repurposing. He has a strong background in biomedical research and has contributed to peer-reviewed publications and research projects in cardiovascular and cellular biology.



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Fatty acid oxidation drives acetyl-CoA-dependent H3K9ac reprogramming to promote adaptive resistance to BRAFV600E inhibition in thyroid cancer

Background: BRAF-targeted therapy has provided an important therapeutic option for patients with BRAFV600E-mutant thyroid cancer; however, adaptive resistance limits its therapeutic efficacy. The metabolic mechanisms underlying adaptive resistance to BRAF inhibition remain incompletely understood. Here, we investigated the role of Fatty Acid Oxidation (FAO) and its metabolic-epigenetic consequences in thyroid cancer cells exposed to BRAF inhibition.

Methods: Integrated transcriptomic and metabolomic analyses were performed to characterize metabolic alterations induced by BRAF inhibition. The functional role of FAO was evaluated using pharmacological inhibition and complementary in vitro and in vivo models. Intracellular acetyl-CoA levels and Histone H3 Lysine 9 Acetylation (H3K9ac) were examined to investigate the connection between metabolic remodeling and epigenetic regulation. The downstream role of RUNX1 was further evaluated using molecular and functional assays. The

therapeutic relevance of FAO inhibition combined with BRAF inhibition was assessed in tumor models and a patient-derived organoid model.

Results: BRAF inhibition with vemurafenib significantly enhanced FAO in thyroid cancer cells. This metabolic adaptation was associated with increased PGC1 α expression and elevated intracellular acetyl-CoA. Pharmacological inhibition of FAO with thioridazine enhanced the antitumor activity of BRAF inhibition and suppressed tumor growth in vitro and in vivo, with consistent effects observed in a patient-derived organoid model. Mechanistically, increased FAO-derived acetyl-CoA altered the H3K9ac landscape and promoted epigenetic activation of pro-survival genes, including RUNX1. RUNX1 expression was associated with poorer prognosis in thyroid cancer, while functional depletion of RUNX1 reduced thyroid cancer cell proliferation, migration, and invasion.

Conclusion: Our findings identify a FAO–acetyl-CoA–H3K9ac metabolic-epigenetic axis that contributes to adaptive resistance to BRAF inhibition in BRAFV600E-mutant thyroid cancer. Targeting FAO may provide a potential strategy to enhance the therapeutic efficacy of BRAF-targeted therapy.

Biography

Jing Zhang is a PhD student majoring in Oncology at Zhejiang University School of Medicine. Her research focuses on BRAF-mutant thyroid cancer and the molecular mechanisms of resistance to BRAF inhibitors. She is particularly interested in understanding therapeutic resistance and identifying potential strategies to improve targeted treatment efficacy in thyroid cancer.



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Epidemiological profile of oral cancers in Senegal and in silico characterization of the TP53 gene

Background: The cancers of the upper aerodigestive tract and oral cancers in particular represent a major global public health problem, with particularly high mortality rates in low- and middle-income countries. These cancers rank 16th among malignant tumors and are the 15th leading cause of death worldwide. They have become very common globally, particularly in Senegal, where their poor prognosis is largely due to late diagnosis, limited access to specialized care, and the lack of local molecular data to enable biological and clinical stratification of patients. Furthermore, most of the current knowledge on the epidemiology and molecular biology of this disease comes from Western populations, limiting its applicability to African contexts.

Objective: In this context, this study aimed to improve epidemiological and molecular understanding of oral cavity cancers in Senegal.

Methodology: Samples of cancerous tissue, suspected healthy tissue, and blood were collected from patients, and blood samples were collected from control subjects. A total of 40 cancerous tissue samples, 20 healthy tissue samples, and 52 blood samples were collected. Descriptive and association analyses of the epidemiological data were performed using the R software package. Given the polymorphism of tumor suppressor genes described as a prerequisite for carcinogenesis, following PCR-sequencing, in silico analyses of the TP53 gene were performed using the bioinformatics tools Mutation Surveyor, Mutation Taster, SIFT, Polyphen 2, and Missense 3D.

Results: The epidemiological analysis showed a female predominance with a sex ratio of 0.86. In total, 57.7% of patients were between the ages of 50 and 70, with a mean age of 57.11 ± 13.73 years. The gums and cheeks were the most common sites, accounting for 40.74% and 27.77%, respectively. Furthermore, 80% of patients were at stage T3-T4, 96% had lymphadenopathy, and 55% were grade 3. Squamous cell carcinoma was the most common histological type (88.90%), and 22.44% had a family history of cancer. According to the results of gene-epidemiological factor associations, age between 50 and 70 years, poor oral hygiene, and the consumption of tobacco and cola are risk factors for oral cavity cancers. It should be noted that Senegalese patients have a different epidemiological profile from patients in other countries around the world. Genetic analyses identified 105 mutations in the TP53 gene, and 71.42% of patients carried at least one mutation, including 36 pathogenic ones. Structural analysis performed using Missense3D showed that alterations at codons 175 and 196 result in significant structural damage to the p53 protein. Furthermore, the CGA codon at position 196 is subject to positive selection. Furthermore, nine (9) amino acids showed a significant difference in frequency between controls and patients. However, no significant difference was noted between cancerous tissues and presumed healthy tissues. These results suggest a genetic similarity between these two types of tissues; consequently, these data could contribute to the widening of tumor margins. Taken together, the results of this study could provide useful epidemiological and molecular foundations for the early detection and development of therapeutic strategies for oral cavity cancers in Senegal.

Keywords: Cancer, Oral Cavity, Epidemiology, TP53, Senegal.

Biography

Mame Diarra Samb is a young researcher in epidemiology and cancer genetics, with training in population genetics, whose work focuses on biomarkers and the molecular determinants of head and neck cancers. Samb's academic background spans the life and earth sciences, population genetics, and molecular cancer epidemiology, providing Samb with a solid interdisciplinary foundation for conducting cancer research. In addition, Samb is involved in training and mentoring master's and doctoral students in the field of cancer research. Samb's scientific interests focus directly on cancer disparities, particularly in low- and middle-income countries, where access to early diagnosis and molecular characterization of cancers remains limited.



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Cancer burden in central India: Unveiling geographic clustering and epidemiological trends – A seven-year retrospective study (2019–2025)

Background: India is witnessing a sharp rise in cancer cases (from 1.46 million in 2022 to 1.57 million in 2025), affecting millions of lives across the country. It poses a significant public health challenge and makes it crucial to predict its future trends for effective healthcare planning. The burden of cancer varies widely across regions in India, and understanding the patterns is essential for designing targeted cancer control interventions. Chhattisgarh is one of the poorest states in India, has limited evidence cancer trends and patterns. This study aimed to assess the geographical distribution and the trend and pattern of different types of cancer registered at a tertiary care cancer hospital.

Methods: A retrospective data analysis was carried out from 2019 to August 2026 at Vedanta Medical Research Foundation, Chhattisgarh, India. Medical records of cancer patients were reviewed, including information on diagnosis, primary site, and demographic characteristics. Geographic distribution was then analyzed using QGIS v2.10, and the descriptive data was analyzed using IBM SPSS v26.0 software.

Results: A total of 29,280 cancer cases were registered during the study period. Of these, 14,480 (49.5%) were females and 14,800 (50.5%) were males, with a median age of 52 years (IQR: 41–62 years). The most common cancers were head and neck (6,890; 23.5%), gastrointestinal (5,485; 18.73%), breast (3,924; 13.4%), gynecology related cancer (3,942; 13.46%) and other cancers (4,299; 14.7%) (Which includes bone and articular cartilage, eye, brain and other parts of the CNS, male genital organs, soft tissue, endocrine, urinary tract, and skin). Among females, the leading cancers were gynecological (3,920; 27%) and breast cancer (3,869; 26.7%), whereas in males, head and neck cancers (5,525; 37.3%) and gastrointestinal cancers (3,319; 22.4%)

were predominant. With respect to geographical distribution, the majority of cases were from Chhattisgarh (85%), followed by Odisha (5.7%) and Madhya Pradesh (3.9%).

Conclusion: An increasing trend was observed annually in head and neck as well as gastrointestinal cancers. The use of geographic mapping provides valuable insights into regional hotspots, enabling policymakers and healthcare providers to design targeted cancer control strategies, optimize resource allocation, and strengthen early detection and prevention programs in high-risk areas.)

Biography

Dr. Yashwant Kashyap is Senior Consultant in Medical Oncology at BALCO Medical Centre. He holds an MD in Internal Medicine from IMS-BHU, Varanasi, and a DM in Medical Oncology from Tata Memorial Hospital, Mumbai. He previously headed the Department of Medical Oncology at AIIMS, Raipur, and has held academic and clinical roles across leading institutions including NHMMI Hospital, Raipur, and Tata Memorial Hospital, Mumbai.



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METTL3-mediated m6A RNA methylation enhances tumor progression in upper tract urothelial carcinoma

Background: Upper Tract Urothelial Carcinoma (UTUC) is a distinct malignancy arising from the renal pelvis or ureter. Globally, UTUC represents 5–10% of urothelial carcinomas, but in Taiwan its incidence reaches up to 30%, the highest reported worldwide. This epidemiological uniqueness highlights the need to define UTUC-specific molecular mechanisms that can guide improved diagnostics and therapeutic strategies. N6-Methyladenosine (m6A) is the most common and abundant post-transcriptional modification found in eukaryotic RNAs and is known to regulate RNA splicing, processing, degradation, storage, stability, transport, localization, and translation. m6A modification of RNA has been implicated in various diseases, including cancer, and has been shown to influence critical cancer cell functions, such as proliferation, invasion, metastasis, and drug resistance. Although METTL3, a major m6A writer with methyltransferase activity, has been extensively studied in bladder cancer, its role in UTUC remains largely unknown. This study aims to investigate the role of METTL3-mediated m6A modification in UTUC.

Methods: Paired UTUC tumor and adjacent normal tissues were analyzed using RNA-seq and m6A-Methylated RNA Immunoprecipitation (MeRIP) microarray. Differentially expressed and differentially methylated mRNAs were identified and compared with the public dataset GSE159824 from the GEO database to filter m6A-regulated candidates. Functional studies were conducted to confirm the direct involvement of candidate mRNAs and their encoded proteins in UTUC progression.

Results: A total of 3579 differentially expressed mRNAs and 366 differentially methylated mRNAs were detected. Cross-comparison with GSE159824 identified 73 m6A-regulated

mRNAs, including multiple drivers of tumor growth and the cell cycle, such as CCND1, CCNB1, CDK1, and CDC25C. Functional studies in urothelial carcinoma cell lines showed that METTL3 overexpression enhances proliferation, colony formation, migration, and invasion, whereas METTL3 knockdown reverses these oncogenic behaviors. Several tumor growth-related mRNAs regulated by the METTL3/m6A axis were also identified.

Conclusions: This study provides new insights into UTUC-specific epitranscriptomic regulation and highlights METTL3 as a potential therapeutic target for advancing precision medicine in UTUC.

Biography

Yi-Chih Liang received his master's degree from National Taiwan University and is currently a Ph.D. candidate at the Institute of Biomedical Sciences, National Sun Yat-sen University, Taiwan. His doctoral research focuses on the role of N6-Methyladenosine (m6A) modification in oncogenic RNA. Clinically, he is a genetic counselor at Kaohsiung Chang Gung Memorial Hospital, where he interprets genetic reports generated by Next-Generation Sequencing (NGS) and provides counseling for both hereditary diseases and cancer-related conditions. He also serves as a co-principal investigator for the Rare Disease Care Program supported by the Ministry of Health and Welfare, Taiwan.

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