

4<sup>th</sup> International Conference on

# Cancer and Oncology Research

October 20-21, 2025 | **Dubai, UAE**



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## **ACCURACY PLUS MEDICAL LABORATORY**

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# Speaker Representations



# Conference Programme

## Wifi Details

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*Username: CSS\_Banquet*  
*Password not Required*

# Day 1

20<sup>th</sup> October

## Session Chairs

**Eiman Aleem**, London South Bank University, United Kingdom

**Carme Plasencia**, Applied Research using Omic Sciences s.l., Spain

**Arvind Jain**, Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE

# Conference Programme

## Day 1 October 20, 2025

Meeting Hall: El Dhiyafa 1&2

**08:00 - 08:15**    **Registration**

**08:15 - 08:30**    **Introduction**

### Plenary Lecture

**08:30- 09:10**    **Mohamed El-Far, Mansoura University, Egypt**

**Title:** Photodynamic Therapy of Tumors by Lasers from Our Chemistry Bench Discovery to Clinical Application: Our Forty Five Years Experience

### Keynote Presentations

**09:10 - 09:50**    **Eiman Aleem, London South Bank University, United Kingdom**

**Title:** OMICS and High-throughput Drug Screening for Improved Prediction of Drug Response in Acute Myeloid Leukemia

**09:50 - 10:30**    **Arvind Jain, Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE**

**Title:** Enigma of Myeloid Proliferations Associated with Down Syndrome

**Network & Refreshments 10:30 - 10:45 @ Pre Function Area**

**10:45 - 11:25**    **Savitri Singh, Post Graduate Institute of Child Health, India**

**Title:** Diagnostic Challenges in A Case of Rare Bleeding Disorder

**11:25 - 12:05**    **Carme Plasencia, Applied Research using Omic Sciences s.l., Spain**

**Title:** Non-Canonical RNA Structures as Translational Switches: Unlocking New Frontiers for Oncology Drug Discovery

### Exhibitor Presentation

**12:05 - 12:30**    **Mohammad Sanowar, CeGaT, Germany**

**Title:** The Importance of Comprehensive Genomic Profiling (CGP) by Accuracy Plus Medical Lab - Abu Dhabi

<b>Oral Presentations</b>	
<b>Session Chair</b>	<b>Eiman Aleem</b> , London South Bank University, United Kingdom
<b>Session Chair</b>	<b>Carme Plasencia</b> , Applied Research using Omic Sciences s.l., Spain
<b>Session Chair</b>	<b>Arvind Jain</b> , Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE
<b>Sessions</b>	Leukemia and Haematological Malignancies   Cancer Biology   Cancer Treatments and Therapies   Oncology   Cancer Epidemiology   Covid-19 And Its Impact on Cancer   Skin Cancer   Oncology Nursing and Allied Health Roles   Clinical Hematology   Science of Blood Transfusion   Hematology and Blood Disorders
<b>12:30 - 12:55</b>	<b>Seham khalaf Alsharrah</b> , Kuwait University, Kuwait
<b>Title:</b> The Effect of Storage Temperatures and Time on Complete Blood Count (CBC) Parameters	
<b>Group Photo 12:55 - 13:05</b>	
<b>Lunch 13:05 - 14:00 @ New Season Restaurant</b>	
<b>14:00 - 14: 25</b>	<b>Khaidarov Saken</b> , Kazakh National Medical University Named After S.D. Asfendiyarov, Kazakhstan
<b>Title:</b> CC, CE and CI-optimal Drug against SARS-CoV-2	
<b>14:25 - 14:50</b>	<b>Xiya Jia</b> , Zhejiang University, China
<b>Title:</b> Exploration of Immune-based Neoadjuvant Strategies in Proficient Mismatch Repair/ Microsatellite Stable Locally Advanced Rectal Cancer	
<b>14:50 - 15:15</b>	<b>Ahmed Alharbi</b> , King Abdulaziz Medcial City -National Guard, Saudi Arabia
<b>Title:</b> “Pre-transfusion Testing”, which Encompasses The Preanalytic, Analytic, and Blood Administration Processes	
<b>15:15 - 15:40</b>	<b>Nuha Mohamed</b> , Wirral University Teaching Hospital, United Kingdom
<b>Title:</b> Skin Deep? Spontaneous Regression of Merkel Cell Carcinoma with Underlying Nodal Spread and Synchronous Lymphoma	

<b>15:40 - 16:05</b>	<b>Akhil Tomy, Betsi Cadwaladr University Health Board, United Kingdom</b>
<b>Title:</b> Lymphoproliferative Disorders and Renal Dysfunction: A Case of CLL-related AKI	
<b>Network &amp; Refreshments 16:05 - 16:30 @ Pre Function Area</b>	
<b>16:30 - 16:55</b>	<b>Savitri Singh, Post Graduate Institute of Child Health, India</b>
<b>Title:</b> Inhibitor Testing in Hemophilia our Experience at Pediatric Institute from North India	
<b>16:55 - 17:20</b>	<b>Sruthi Pradeep, Aster Medcity, India</b>
<b>Title:</b> From The Brink of Liver Failure to B-ALL Remission-An Incredible Recovery	
<b>17:20 - 17:45</b>	<b>Mithun Shah, Mayo Clinic, USA</b>
<b>Title:</b> Updates on TP53-Mutated Myeloid Neoplasms	
<b>Day 1 Concludes with Certificate Distribution</b>	

# Day 2

21<sup>st</sup> October

## Session Chairs

**Deepthi Thottungal Rajan**, Oncure Integrated Health Screening Center, India

**Arvind Jain**, Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE

**Ramesh Ganju**, Ohio State University, USA

# Conference Programme

**Day 2 October 21, 2025**

**Meeting Hall: El Dhiyafa 1&2**

## **Keynote Presentations**

**09:00 - 09:40 Ramesh Ganju, Ohio State University, USA**

**Title:** Novel Tumor Microenvironment-mediated Signaling that Regulate Breast Cancer Progression and Metastasis

**09:40 - 10:20 Deepthi Thottungal Rajan, Oncure Integrated Health Screening Center, India**

**Title:** Briding The Gap: HPV Vaccination Challenges and Success

**10:20 - 11:00 Arvind Jain, Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE**

**Title:** Deciphering Hemoglobinopathies: A Journey through Laboratory Diagnostics and Case Discussions

**Network & Refreshments 11:00 - 11:20 @ Pre Function Area**

**11:20 - 12:00 Mithun Shah, Mayo Clinic, USA**

**Title:** Evidence-based Risk Stratification of Myeloid Neoplasms Harboring TP53 Mutations

## **Poster Presentations**

**Poster Judge Deepthi Thottungal Rajan, Oncure Integrated Health Screening Center, India**

**PP- 01 Naila Waheed Khan, King Faisal Specialist Hospital & Research Center, Saudi Arabia**

**Title:** Patient-Centered Cancer Care: An investigation of Healthcare Factors affecting Patient Experience at King Faisal Specialist Hospital & Research Center, Saudi Arabia

**PP- 02 Fizah Hasan and Ashwini Arulrajah, Anglia Ruskin University, United Kingdom**

**Title:** Prehabilitation in Cancer

<b>PP- 03</b>	<b>Laith Abualloush, Jordan University of Science and Technology, Jordan</b>
<b>Title:</b> Epidemiology and Outcomes of Hematologic Complications in Critically Ill Children: A Retrospective Analysis from The PIC Database	
<b>PP- 04</b>	<b>Adriana Mendes, Sao Leopoldo Mandic, Brazil</b>
<b>Title:</b> Effect of Vanadium and Silicon-enriched Water on Oral Mucositis in Oncology Patients: A Preliminary Clinical Approach	
<b>PP- 05</b>	<b>Reya Sharma, Bristol Myers Squibb, United Kingdom</b>
<b>Title:</b> Clinical and Economic Challenges of Blood Transfusions and The Strain on The Blood Supply System	
<b>PP- 06</b>	<b>Tomohiro Yamakawa, Obihiro Kosei Hospital, Japan</b>
<b>Title:</b> Triglyceridemia and Visceral Obesity are Risk Factors in Acute Promyelocytic Leukemia	
<b>PP- 07</b>	<b>Khaidarov Saken, Kazakh National Medical University named after S.D. Asfendiyarov, Kazakhstan</b>
<b>Title:</b> Epidemiological Study of HPV-Positive Cancer among Females in Kazakhstan and Diagnostical Confirmation of Ovarian Cancer – A Clinical Case in A Context of Sustainable Development	
<b>PP- 08</b>	<b>Laith Abualloush, Jordan University of Science and Technology, Jordan</b>
<b>Title:</b> Co-Expression of FLT3 and DNMT3A and Their Prognostic Significance in Acute Myeloid Leukemia	
<b>PP- 09</b>	<b>Ashikha Shirin Usman PP, Saveetha Institute of Medical and Technical Science, India</b>
<b>Title:</b> Graphene Oxide-based Paper Biosensor for Multiplex miRNA Detection in Early Oral Squamous Cell Carcinoma Diagnosis	
<b>PP- 10</b>	<b>Huda Masoud Kashaob, Sultan Qaboos Comprehensive Cancer Care and Research Center, University Medical City, Oman</b>
<b>Title:</b> Cervical Cancer and Lupus: A Case of Fertility-preserving Radical Trachelectomy with Persistent Inflammatory Lymphadenopathy Mimicking Recurrence	
<b>PP- 11</b>	<b>Nuha Mohamed, Wirral University Teaching Hospital, United Kingdom</b>
<b>Title:</b> Skin Deep? Spontaneous Regression of Merkel Cell Carcinoma with Underlying Nodal Spread and Synchronous lymphoma	

**Lunch 13:00-14:00 @ New Season Restaurant**

**Oral Presentations**

<b>Session Chair</b>	<b>Deepthi Thottungal Rajan</b> , Oncure Integrated Health Screening Center, India
<b>Session Chair</b>	<b>Arvind Jain</b> , Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE
<b>Session Chair</b>	<b>Ramesh Ganju</b> , Ohio state University, USA
<b>Sessions</b>	Leukemia and Haematological Malignancies   Advanced Treatment and Research in Hematology   Thrombosis and Hemostasis   Oncology   Cancer Epidemiology  Cancer Treatments and Therapies  Breast Cancer   Cancer Biomarkers   Gynecologic Cancer   Hematology and Blood Disorders
<b>14:00 - 14:25</b>	<b>Khaidarov Saken</b> , Kazakh National Medical University named after S.D. Asfendiyarov, Kazakhstan
<b>Title:</b> Analysis of Epidemiological, Cultural and Clinical Aspects of Ovarian Cancer Diagnosis and Treatment in Kazakhstan: Results of Every Woman Study	
<b>14:25 - 14:50</b>	<b>Azah Alghamdi</b> , King Fahad Specialist Hospital, Saudi Arabia
<b>Title:</b> Lupus Antibody Diagnosis: Clinical Relevance and Diagnostic Advances	
<b>14:50 - 15:15</b>	<b>Cristoss Gregory</b> , Betsi Cadwaladr University Health Board, United Kingdom
<b>Title:</b> Pembrolizumab-induced Myasthenia Gravis with Respiratory Involvement and Favourable Clinical Outcome	
<b>15:15 - 16:10</b>	<b>Angotu Jayakrishnasai</b> , TATA Medical Center, India
<b>Title:</b> Evaluating The Role of Structured Education on Cancer Pain in Community Health Care Workers in Restricted Resource Settings	
<b>Network &amp; Refreshments 16:10 - 16:30 @ Pre Function Area</b>	
<b>16:30 - 16:55</b>	<b>Farasat Veisi</b> , Payame Noor University of Tehran, Iran
<b>Title:</b> Hybrid Deep Learning Model for Breast Cancer Classification using The Breast Cancer Wisconsin (Diagnostic) Dataset	
<b>16:55 - 17:20</b>	<b>Maryam Khaleghian</b> , Payame Noor University of Tehran, Iran
<b>Title:</b> Predicting Cervical Cancer Risk using A Hybrid Deep Learning Approach on The Cervical Cancer Risk Factors Dataset	

## Video Presentations

**VP- 001**

**Sakhipova Gulnara, M.Ospanov West Kazakhstan Medical University, Kazakhstan**

**Title:** Treatment Method for Cervical Dysplasia using Immunomodulators

**VP- 002**

**Yahia El-tanani, Royal Cornwall Hospital Trust, United Kingdom**

**Title: Advancements in Non-Invasive Biomarkers for Detection and Monitoring of Breast Cancer Recurrence**

**VP- 003**

**Mariano Votta, Cittadinanzattiva - Active Citizenship Network, Italy**

**Title:** Reframing Access to Advanced Therapy Medicinal Products (ATMPs) in Europe: A Patient-Centered Call to Action for Policy and Systemic Reform

**Day 2 Concludes with Certificate Distribution and Vote of Thanks**

# Day 2 Virtual

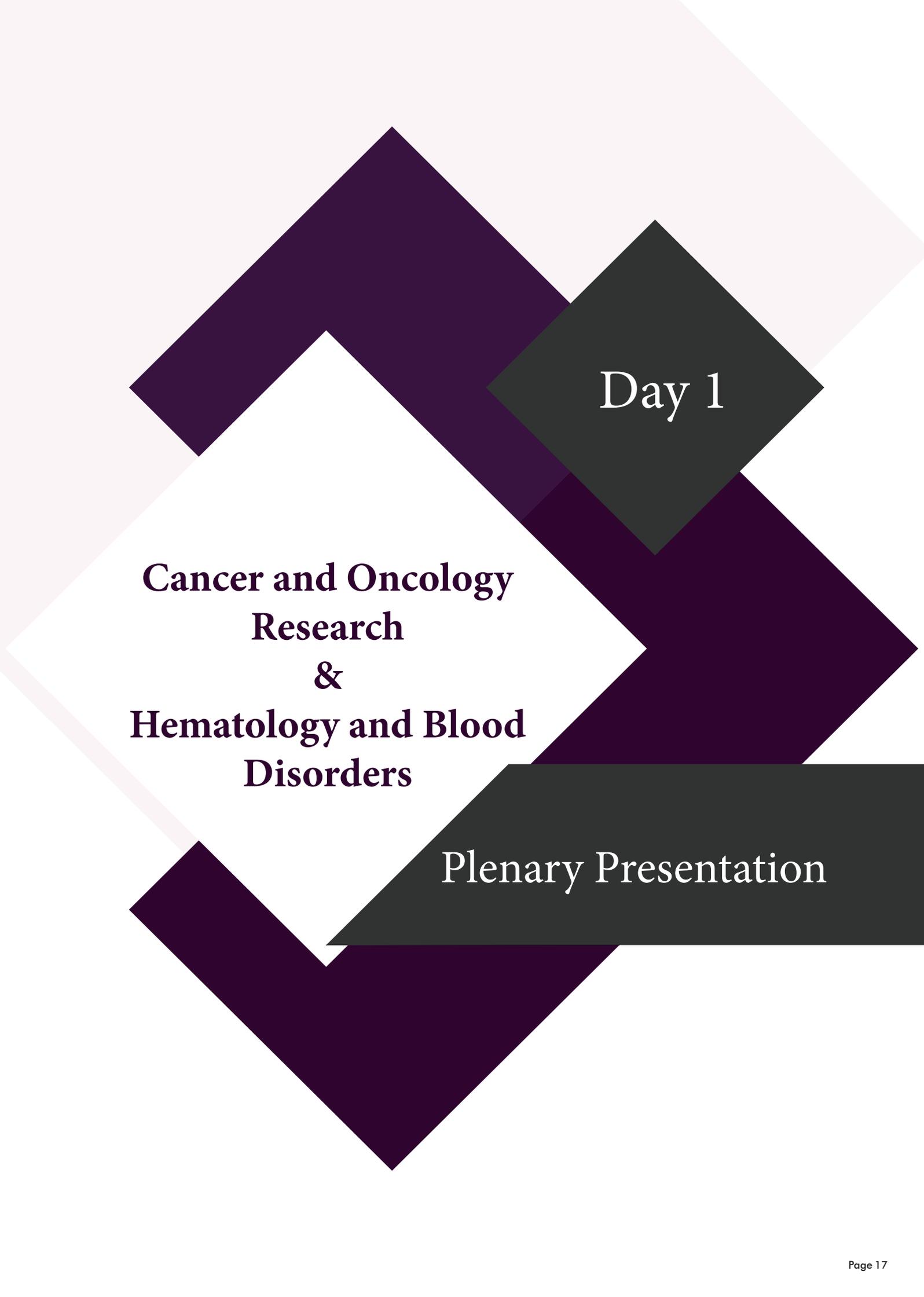
21<sup>st</sup> October

# Virtual Programme

## Day 2 October 20, 2025 (BST)

09:45 - 10:00	<b>Introduction</b>
<b>Oral Presentations</b>	
10:00 - 10:30	<b>Kaitong Liang, Guangdong Country Garden School, China</b>
<b>Title:</b> IQ (2-Amino-3-methyl-3H-imidazo[4,5-f]quinoline) Acts as A Potent Teratogen in <i>Drosophila melanogaster</i>	
10:30 - 11:00	<b>Fatima Khan, Bukhara Medical Institute State, Uzbekistan</b>
<b>Title:</b> HPV Vaccine Awareness, Beliefs, and Barriers: A Study on Cervical Cancer Prevention Among Health Science Students in Bukhara, Uzbekistan	
11:00 - 11:30	<b>Khawaja Muhammad Ammar Ali Javed, University of Birmingham, United Kingdom</b>
<b>Title:</b> Barriers to Early Detection and Treatment Outcomes in Group D Retinoblastoma: Insights from a Tertiary Hospital in Pakistan	
11:30 - 12:00	<b>Priyanshu Kumar Singh, Davadost Pharma Private Limited, India</b>
<b>Title:</b> Cancer Precision Medicine: An Enhanced Scientific Overview and Review	
12:00 - 12:30	<b>Preethika Anbalagan, Prime Hospital, UAE</b>
<b>Title:</b> Intracerebral Hemorrhage in Leukemia in the Absence of Severe Thrombocytopenia	
12:30 - 13:00	<b>Eskina Tatiana, Republican Clinnical Hospital, Moldova</b>
<b>Title:</b> Multiple Myeloma	
13:00 - 13:30	<b>Firuza Nabieva, Bukhara Medical Institute State, Uzbekistan</b>
<b>Title:</b> Biomarkers for Monitoring Ovarian Cancer Recurrence	
13:30 - 14:00	<b>Marjona Shonazarova, Avicenna Tajik State Medical University, Republic of Tajikistan</b>
<b>Title:</b> Lipid Profile and Coagulation Hemostasis Before and After Polychemotherapy in Patients with Acute Lymphoblastic Leukemia	

<b>14:00 - 14:30</b>	<b>Haaris Hamaad Muin Ahmad, Frimley Park Foundation NHS Trust, United Kingdom</b>
<b>Title:</b> Audit of Breast Positioning in MRI imaging for Breast Cancer: Prioritising Image Quality for Accurate Diagnosis	
<b>14:30 - 15:00</b>	<b>Zobia Arshad, University of Turin, Italy</b>
<b>Title:</b> TENM4: A Key Driver of Colorectal Cancer Progression and A Novel Therapeutic Target	
<b>15:00 - 15:30</b>	<b>Claudia Regina Bianco Bastos, Holy Family College and State University of Ponta Grossa PR, Brazil</b>
<b>Title:</b> Social Support Theory and its Application in Cancer Patients	
<b>Poster Presentations</b>	
<b>P- 01</b>	<b>Irena Avlokhshvili, Russian Medical Academy of Continuing Professional Education (RMANPO), Russia</b>
<b>Title:</b> HLA-DR Expression on Monocyte Subpopulations in Healthy Donors, CMML, and Reactive Monocytosis	
<b>P- 02</b>	<b>Evgenia Brovkina, National Medical Research Center for Children's Hematology, Oncology, and Immunology named after Dmitry Rogachev, Moscow, Russia</b>
<b>Title:</b> Hb Karelia [p287(F8) His-Asp (CAC>GAC); HBA2: c.262C>G]: Detection of A Novel Variant of Abnormal Hemoglobin in A Patient From Russia	
<b>P- 03</b>	<b>Robert Ulinski, Medical University of Warsaw, Poland</b>
<b>Title:</b> How much do Different Risk Factors Decrease Survival Time in Patients with Coexistence of Lung Cancer and Chronic Obstructive Pulmonary Disease?	
<b>PP- 04</b>	<b>Robert Ulinski, Medical University of Warsaw, Poland</b>
<b>Title:</b> Influence of Emphysema on Tregs, Lymphocytes, Molecules CTLA-4 and PD-1 in Patients with Lung Cancer and Co-existence of COPD	



Day 1

**Cancer and Oncology  
Research  
&  
Hematology and Blood  
Disorders**

Plenary Presentation

## OMICS AND HIGH-THROUGHPUT DRUG SCREENING FOR IMPROVED PREDICTION OF DRUG RESPONSE IN ACUTE MYELOID LEUKEMIA



**Eiman A Aleem**

*London South Bank University, United Kingdom*

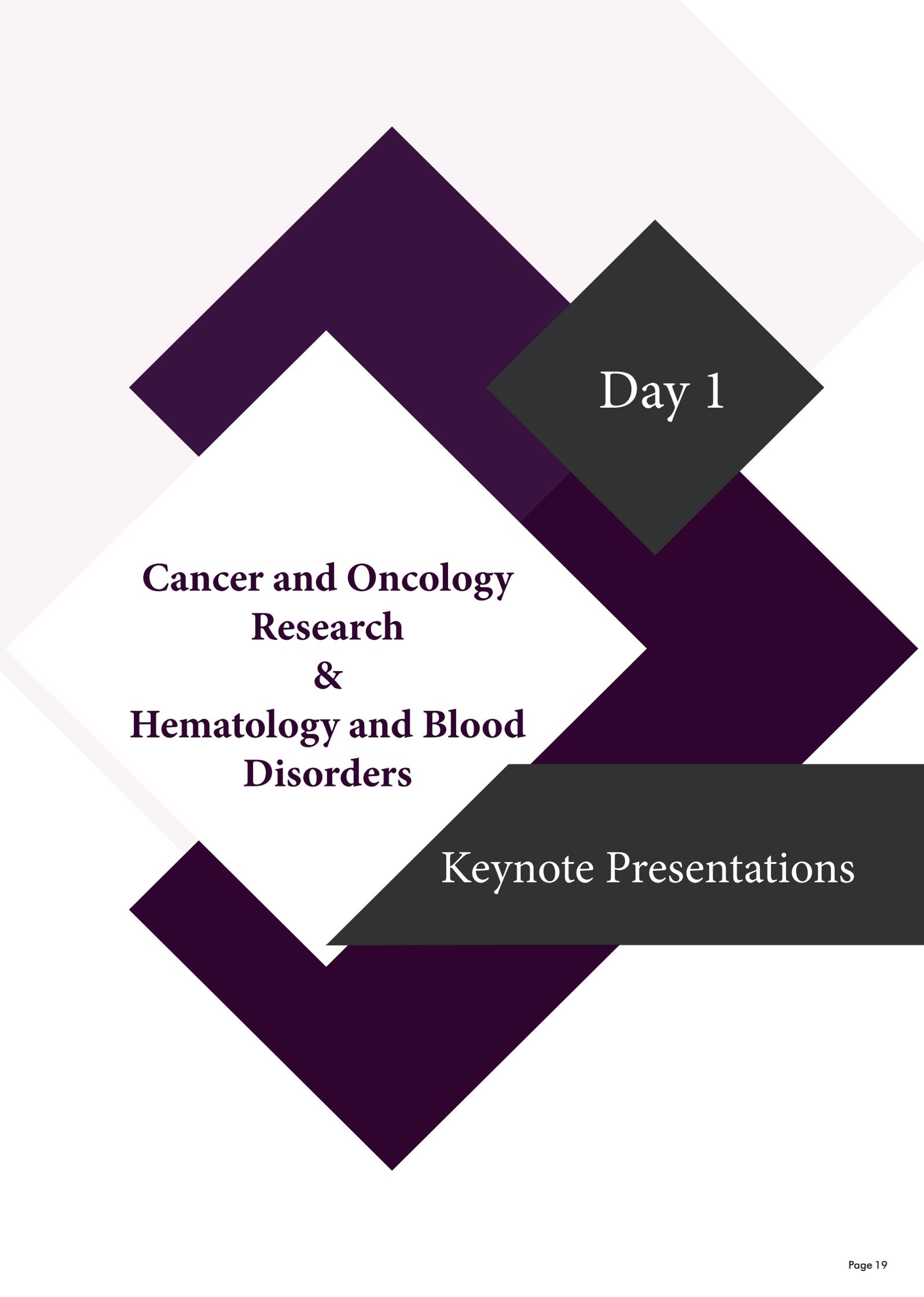
### Abstract:

The five-year-survival-rate for paediatric patients with Acute Myeloid Leukaemia (AML) is from 60-70%. The most common causes of death are disease relapse and chemo-resistance; thus, studying the mechanisms of resistance is paramount. Typically, drug dose response testing is performed at atmospheric oxygen (21%) in a 2-Dimensional (2-D) format; however, AML cells reside in the hypoxic (1% O<sub>2</sub>), 3-Dimensional (3-D) bone marrow structure along with other cells.

Hypoxia is an adverse prognostic indicator in cancer as it is associated with tumor progression and chemoresistance. The role of hypoxia and its clinical implications in childhood cancer remain largely unknown. Therefore, studying the drug response of cancer cells within a hypoxic environment is critical for the accurate prediction of patients' response to therapy. We have performed functional drug screening for 50 compounds using a panel of AML cell lines in normoxia and hypoxia and found that hypoxia induced universal resistance to few investigational and FDA approved compounds. The aim of the present study was to utilize a transcriptomic and highthroughput drug screening approach to determine the mechanisms of hypoxia-induced resistance. The IC<sub>50</sub> of selected compounds was found to be higher in hypoxia than normoxia by 10-100 fold. Hypoxia attenuated apoptotic cell death. Using RNA seq we identified a set of genes that were differentially expressed in hypoxia. We conclude that a molecular axis involving STAT3/PIM2 and stem cell genes may underlie resistance to survivin targeting compounds in AML cell lines. Hypoxia is likely a key factor in programming treatment resistance and, thus, relapse and poor outcomes.

### Biography

Eiman Aleem is an academic leader with extensive international experience. She is Professor in Biomedical Science, and Head of the Research Group Cancer, Infection and Therapeutics at London South Bank University, UK. She received her Ph.D. in Molecular Cancer Biology from the University of Heidelberg, Germany, where she investigated the insulin and insulin-like growth factor-1 receptor (IGF-1R) signalling in cancer. She completed her postdoctoral training at the National Cancer Institute-Frederick, USA, where she studied the in vivo regulation of cyclin-dependent kinases using genetically modified mice. She received a Marie-Curie grant for senior researchers to further study novel interactions of the IGF-1R in cancer at Karolinska Institutet, Sweden. She then moved to Phoenix Children's Hospital and the University of Arizona College of Medicine, Phoenix to work on understanding the mechanisms of drug resistance in pediatric acute myeloid leukemia using OMICS and functional drug screening. Her current research focuses on the identification of molecular targets, in cancer, and on the IGF-1R interactome. She utilizes computational and wet-lab approaches. Professor Aleem supervised tens of postgraduate students in UK, USA, Sweden, and Egypt. As an educator, she developed, led, and taught on several programmes in biomedical science, molecular cell biology and clinical translational sciences.



Day 1

**Cancer and Oncology  
Research  
&  
Hematology and Blood  
Disorders**

Keynote Presentations

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## PHOTODYNAMIC THERAPY OF TUMORS BY LASERS FROM OUR CHEMISTRY BENCH DISCOVERY TO CLINICAL APPLICATIONS: OUR FORTY FIVE YEARS EXPERIENCE



**Mohamed El-Far**  
*Mansoura University, Egypt*

### Abstract:

We will present an over view of our long-term team(s) experience during forty five years in the field of photodynamic therapy (PDT) of tumors using LASER, from our chemistry bench discovery to clinical applications. The lecture main topics include: I) our search for ideal photosensitizers and discovery of uroporphyrin ability to be selectively retained in tumors for PDT and mechanism of action. II) We will show our novel approach of biodistribution and selective in-vivo tumor localization of endogenous porphyrins induced and stimulated by 5-Aminoleuvulinic acid (ALA) as a newly developed technique which we adopted to treat certain types of cancers. III) Removal of skin photo-toxicity after PDT of tumors using our novel approach. IV) We will show PDT – clinical applications for treatment of certain types of cancers. V) Recent therapeutic application of our ALA technique in combination with high energy photons as Radiodynamic therapy (RDT) of deep-seated tumors in lungs and brain. VI) We will present our future vision for ways to increase PDT- efficacy and where do we go from here.

### Biography

Mohamed El-Far, worked in biochemistry field for 45 years, published over 100 peer-reviewed papers. He received Fulbright and British council fellowships several times as well as German DAAD grant to establish PDT program at Munich, also received US-AID grant to establish PDT unit in Egypt. He is serving on the editorial boards and Hon. Editor to four international journals. He acts as UNESCO expert in science and technology. Dr. El-Far served as visiting professor to University of California as well as Utah laser center also Mayo clinic for several years. He also served as a visiting professor to Cardiff and Swansea University, UK. He is a member of international photodynamic Association and Royal Society of Chemistry, UK. Selected and served as expert and consultant for biochemistry in the national committee of supreme council of University in Egypt, which is the highest nation honor. Recently selected as a member of higher Education and Research committee for Mansoura University. Selected by the International Biographical Center, Cambridge, England to be among top 100 scientists 2012. Received honorary doctorate of letters from International Biographical Centre, Cambridge, England. Selected on list of global speakers as a keynote speaker and honorable guest as well as chairman for several international conferences in cancer and diabetes as well as other recent biomedical applications as stem cells and nanotechnology. El-Far is an international expert in photodynamic therapy (PDT) of tumors by laser; he is first worldwide to use sildenafil as novel antiabortive agent in recurrent spontaneous abortion. El-Far was selected as person of the year/ 2018 by Mansoura University, also selected by Royal Swedish Academy of Sciences to nominate Nobel prize winners in chemistry for year 2021 which is most prestigious honor in the world.

## ENIGMA OF MYELOID PROLIFERATIONS ASSOCIATED WITH DOWN SYNDROME



**Arvind Jain**

*Biosytech Medical Reference Laboratory and A TO G Medical Reference Laboratory, UAE*

### Abstract:

Trisomy 21 (T21), the most common type of +21, is found in nearly all subtypes of hematological malignancies. T21, which results in the development of Down syndrome (DS), is the most frequent numerical chromosomal aberration. DS is associated with broad spectrum of hematological findings and almost all neonates with DS have quantitative and / or qualitative disorders of myeloid compartment. Of those hematological abnormalities, transient abnormal myelopoiesis (TAM) and acute myeloid leukemia (AML) have common genetic abnormalities, i.e., T21 and acquired mutation in the key hematopoietic transcription factor GATA1, and form a continuous spectrum, referred to as myeloid proliferations associated with DS.

Children with DS due to an extra copy of chromosome 21 have an ~ 150 fold increased risk of developing AML in first five years of life; most cases being that of acute megakaryoblastic leukemia (AMKL). The unique morphological, immunophenotypic, molecular genetic, and clinical characteristics that distinguish it from other forms of AMKL, including GATA1 mutations; serve as the rationale for the recognition of this form of leukemia as a distinct type in the WHO classification. ML-DS is usually preceded by a unique clonal pre-leukemic myeloproliferative disorder, TAM, in first few weeks of life; the circulating blasts of which are morphologically and phenotypically similar to the predominant form of AML in children with DS. This disorder resolves spontaneously in < 3 months, but ~ 20 – 30% progress to develop myeloid leukemia associated with Down syndrome (ML-DS) within 1 – 3 years.

Unravelling the mechanisms underlying leukemogenesis and identification of factors that predict progression to leukemia could assist in development of strategies to prevent progression to ML-DS. This presentation attempts to provide a comprehensive overview of available literature and recent advances with a focus on presenting the valuable body of knowledge available till date for better understanding of the complex molecular landscape of myeloid proliferations in DS with insights into the model of stepwise leukemogenesis.

### Biography

Arvind Jain has completed his 'M.D. (Pathology)' from Shivaji University, Maharashtra, India in 2002. In addition to his clinical degrees, he has obtained a 'Diploma in Hospital and Healthcare Management' and 'Diploma in Medicolegal Sciences' from India. Dr. Jain is also 'Certified Six Sigma Green Belt' and has earned his 'M.B.A. from Torrens University, Australia, with high distinction in all subjects and was awarded topper and best student award among all the students in UAE and Bahrain. He was awarded Doctor of Philosophy / Ph.D in 2023 by CMJ University, India. He is an excellent pathologist commanding in-depth subject knowledge and astute administrative skills with over 22 years of experience in various subspecialties of 'Laboratory Medicine and Pathology'. He has a wide experience of establishing world class laboratories across the subcontinent and in the UAE. He is an active member in various scientific societies and is 'Editorial and Reviewer Board Member' of some of the prestigious scientific journals in the field of Laboratory Medicine and is a College of America (CAP) Inspection Team leader. Jain worked in renowned private hospitals and multinational reference laboratory as 'Head of Department and Consultant Pathologist' in Mumbai, India, and Colombo, Sri Lanka; before

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moving to the UAE in 2008. Prior to joining Biosytech Medical (Reference) Laboratory in Dubai, he worked at prestigious Sheikh Khalifa Medical City, Abu Dhabi, as Hematopathologist and Histopathologist; and at Imperial College London Diabetes Centre under Mubadala Healthcare, as 'Laboratory Director, Anatomic and Clinical Pathologist' overseeing their diagnostic services both in Abu Dhabi and Al Ain.

## DIAGNOSTIC CHALLENGES IN A CASE OF RARE BLEEDING DISORDER



**Savitri Singh**

Post Graduate Institute of Child Health, India

### Abstract:

**Background:** Congenital fibrinogen disorder are rare pathologies of haemostasis comprising quantitative (*afibrinogenemia, hypofibrinogenemia*) and qualitative (*dysfibrinogenemia and hypo dysfibrinogenemia*). worldwide estimated prevalence of *afibrinogenemia* is approx. 1-2 per million general population (RBD). The clinical phenotype is variable being associated with bleeding, thrombosis or absence of symptoms. In addition to standard coagulation tests, genetic testing is key point in confirming the clinical diagnosis. Hence diagnosing and treating these disorders is of extreme importance. We present a case of 13-year male child who presented in PHO emergency dept. with bleeding and was a known case of *Hemophilia B* on treatment since 2012.

**Case Report:** A case of 13-year male child who presented in PHO emergency dept. with orbital hematoma, proptosis, subgaleal bleed and Keramalacia right eye(post traumatic). The Child was diagnosed in 2012 Hemophilia B and since then had received off and on factor therapy for joint bleed and bruises. Patient detailed clinical examination, history was taken he had a significant past history of umbilical stump bleed in neonatal period. Routine investigation CBC, PS for Platelet morphology, Coagulation profile PT, APTT was done. In CBC and PS were within normal limits. PT and APTT test done on citrated plasma (Fully automated coag. Analyzer Stago Max3) both were >120sec. Mixing studies were done, and correction was noted. TT was prolonged, Fibrinogen test (Clauss Method, Clot based test) was done with normal and pathological control in (Fully automated coag. Analyzer Stago Tago Max3). Close monitoring of fibrinogen was done.

**Results:** Serial samples studied showed low to absent fibrinogen levels. Hence a diagnosis of Afibrinogenemia was made.

**Conclusion:** Congenital afibrinogenemia may be delayed as much as by one decade as in our case and may present with life threatening bleed (subgalea hematoma, orbital hematoma). Incorrect diagnosis may be made due to late presentation e.g. haemophilia B and such cases may be missed diagnostically.

### Biography

Savitri Singh is working as professor in department of Pathology, Postgraduate Institute of Child Health Noida. She is a product of the prestigious King George Medical University, Lucknow from where she obtained her specialization degree(MD Pathology). She is an expert in the fields of cytopathology and Hematology and has obtained training from high end centres like CMC Vellore and AIIMS delhi for hematology diagnosis and is also an expert in the field PID, trained from NIH Mumbai. She is instrumental in establishing the hematology and specialized coagulation lab at her institute and is a keen teacher and researcher. She is an integral part of the BMT team at PGICH and instrumental in starting UK-NEQAS at PGICH, Noida.

## NON-CANONICAL RNA STRUCTURES AS TRANSLATIONAL SWITCHES: UNLOCKING NEW FRONTIERS FOR ONCOLOGY DRUG DISCOVERY



**Carmen Plasencia**  
*AROMICS S.L., Spain*

### Abstract:

RNA is no longer viewed as a passive messenger but as a dynamic biomolecule able to fold into non-canonical structural elements-hairpins, pseudoknots, triple helices, R-loops, and G-quadruplexes (G4s). These higher-order architectures act as molecular switches that regulate transcription, splicing, localization, and, critically, translation. Their selective enrichment in oncogenes provides an unprecedented opportunity to intervene at the level of RNA structure rather than protein or DNA.

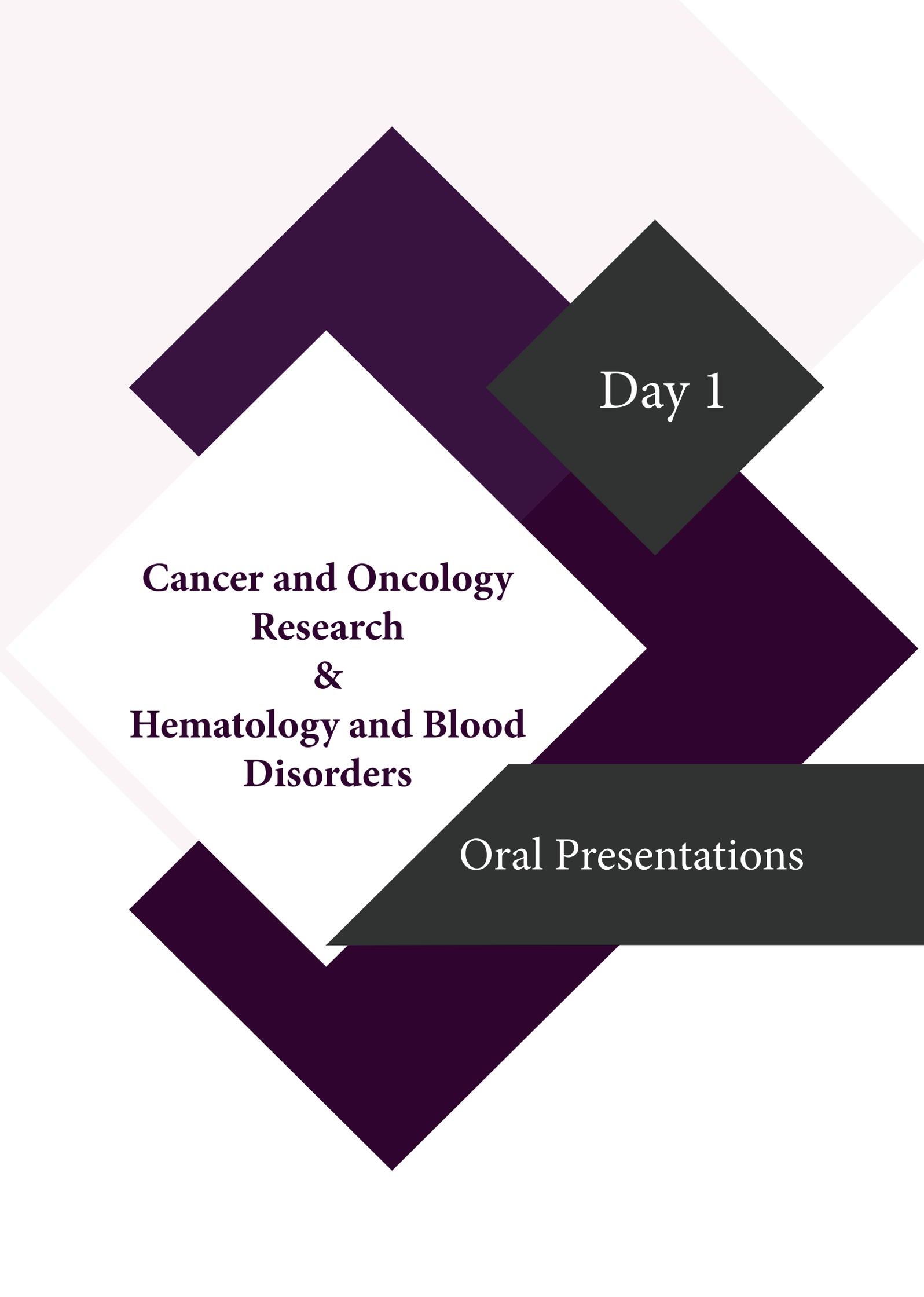
Among them, RNA G-quadruplexes have gained increasing attention for their exceptional thermodynamic stability and their frequent positioning in untranslated regions, where they can modulate ribosomal scanning and initiation. By controlling accessibility to start codons and regulatory motifs, RNA G4s function as cis-regulatory checkpoints of protein synthesis.

We and others have shown that these structures exist in several clinically relevant oncogenes, where they act as translational repressors and represent a previously unexploited druggable layer of regulation. Using rationally designed small molecules derived from natural scaffolds, we demonstrate that RNA G4s can be selectively stabilized, effectively rewiring the translational output of oncogenes. This approach silences protein production without altering transcript abundance, thus providing a mechanism distinct from classical enzyme inhibition, DNA-damaging agents, or antisense strategies.

This paradigm-RNA structure-guided translational repression-offers a new frontier in oncology therapeutics. By targeting the architecture of RNA rather than its sequence, small molecules can selectively disarm oncogenic drivers with high precision and potentially reduced toxicity. Our work illustrates how structural RNA elements, once considered biological curiosities, can be transformed into tractable and clinically relevant drug targets.

### Biography

Carme Plasencia, PhD, is co-founder and CEO of Aromics S.L., a biotech company based in Barcelona dedicated to developing small molecules that target non-canonical RNA structures in cancer. With a background in molecular oncology and more than 20 years of experience in translational research, over last seven years and under her leadership, Aromics has advanced a first-in-class RNA structural binder into clinical development for refractory solid tumors. She is also a strong advocate for innovation-driven oncology and for the role of women scientists in biotech leadership.



Day 1

**Cancer and Oncology  
Research  
&  
Hematology and Blood  
Disorders**

Oral Presentations

## THE EFFECT OF STORAGE TEMPERATURES AND TIME ON COMPLETE BLOOD COUNT (CBC)

**Seham khalaf Alsharrah**

*Kuwait University, Kuwait*

### Abstract:

**Background:** CBC is the most performed blood tests; Inconveniences may occur during the blood testing process which include a delay in the transport from the phlebotomy to the lab that may lead to a great difference in the lab results. Studies suggest that the best whole blood storage is at 4–8°C for up to 24 hours. If the blood were tested at an incorrect time or temperature that may lead to unreliable results.

The results of the complete blood count (CBC) are affected by several factors. The sample should be stored in optimum requirements to ensure the stability and reliability of the parameters. This project aims to evaluate the effects of temperature and sample storage time on the CBC test results and assess parameter stability throughout the course of five consecutive days.

**Methods:** Eighteen residual EDTA tube samples from male suspects of all ages were collected randomly from Mubarek hospital hematology lab. The samples were analyzed for a complete blood count using the Unicell DxH800 analyzer for five consecutive days.

**Results:** When compared to the bias max, parameters stored at Room Temperature:

-HBG and PLT showed complete stability making them reliable for up to five days.

-RBC and HCT were stable only up to the second day.

-WBC, MCV, MCH, MCHC and MPV showed an unacceptable bias because they showed to be only reliable on the day of collection.

While parameters stored at Fridge:

-WBC, RBC, HBG, MCH, PLT show complete stability and reliability throughout the five days of testing.

-HCT and RDW were reliable and stable up to the third day of testing.

-MCV and MCHC, show unacceptable bias.

The results of this study indicate that the MCV, MCHC, and RDW parameters are less stable after storage, whereas Hb, RBC, WBC, MCH, and PLT are more stable. Also, samples stored in the fridge are more reliable and could stay stable for testing for a longer duration of time.

**Conclusion:** Testing should be done on the blood samples as soon as possible and prolonged storage should be limited. If storage was needed for further testing, four degrees celcius has shown to be the optimum environment. For testing specific indices, the specific days of reliability are listed and may provide accurate and reliable results.

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## Biography

Seham Al-Sharrah : appointed in medical laboratory sciences Collage of Allied Health, Kuwait university in 2000, she recived her Bsc from the same department and her Msc degree from pathology department faculty of medicine kuwait. Teaching and reserch activities hematology, biochemistry and immunology.seconded in hospital hematology laboratories.

## CC, CE AND CI-OPTIMAL DRUG AGAINST SARS-COV-2

S Zh Khaidarov Saken, Askar Aidarov, A Zh Moldakaryzova, Izmailova Slu Habibievna and Yerbol Burahsev

*Kazakh National Medical University named after S.D. Asfendiyarov, Kazakhstan*

### Abstract:

The ongoing evolution of SARS-CoV-2 underscores the need for continuous development of effective and safe antiviral therapies. This research focuses on identifying and characterising compounds exhibiting the best antiviral profiles, defined by crucial pharmacological indices: Cytotoxic Concentration (CC), Cytostatic Effect (CE), and Combination Index (CI). A systematic screen of potential antivirals (including repurposed drugs and novel candidates) was conducted against SARS-CoV-2 *in vitro* using human cell lines. Plaque reduction assays quantified antiviral efficacy, while cytotoxicity assessments yielded  $CC_{50}$  values. Priority was given to compounds demonstrating high  $CC_{50}$  (signifying low cytotoxicity) coupled with potent inhibition (low  $IC_{50}$ ).

The cytostatic effect (CE), which reflects the capacity to halt viral replication without causing direct cell death, was evaluated by tracking cell viability and viral load over time after treatment. Key findings identified several lead compounds, notably Tenofovir (TDF or TAF). This nucleoside analogue displayed a significantly advantageous therapeutic window (high  $CC_{50}/IC_{50}$  ratio) and potent cytostatic activity (CE), effectively suppressing viral replication cycles and boosting antiviral potency, which could allow for lower, less toxic dosing.

In my research, *in vitro* and *in vivo*: the main differences between Tenofovir Disoproxil Fumarate (TDF) and Tenofovir Alafenamide (TAF), including their pros and cons: Delivery Mechanism & Dose:

**TDF:** Converts to active tenofovir in the bloodstream. Requires a high dose (300 mg) to ensure enough drug enters target cells (*lymphocytes, hepatocytes*).

**TAF:** Designed to enter target cells first before converting to active tenofovir. This targeted delivery allows for a much lower dose (25 mg) to achieve high intracellular concentrations while minimising drug levels in the blood.

**TDF Pros:** Lower cost (generic), well-established long-term safety/efficacy profile (especially in pregnancy), neutral lipid effects, fewer problematic drug interactions.

**TAF Pros:** Significantly better renal and bone safety profile. Lower dose. Equivalent efficacy.

### Biography

Khaidarov Saken has expertise in evaluation and a passion for improving health and wellbeing. His open and contextual evaluation model based on responsive constructivism creates new pathways for improving healthcare research. He has developed this model after years of experience in research, evaluation, teaching, and administration, both in hospitals and educational institutions

## SINGLE-CELL AND SPATIAL PROFILING OF IMMUNE AND TUMOR-INTRINSIC MECHANISMS IN RESPONSE TO NEOADJUVANT RADIOTHERAPY PLUS IMMUNOCHEMOTHERAPY IN MICROSATELLITE STABLE LOCALLY ADVANCED RECTAL CANCER

**Xiya Jia and Sheng Dai**

*Zhejiang University, China*

### Abstract:

**Background:** Microsatellite stable (MSS) locally advanced rectal cancer (LARC) is an aggressive malignancy with poor response to immune checkpoint inhibitors (ICIs). Recent studies suggest that combining chemoradiotherapy and ICIs in the neoadjuvant setting can benefit MSS LARC patients, though the mechanisms driving response remain unclear. Understanding the tumor microenvironment (TME) may guide better patient stratification and novel therapeutic strategies.

**Methods:** We performed a comprehensive analysis of longitudinal biopsies from 32 MSS LARC patients treated with short-course radiotherapy (SCRT) followed by CAPEOX and Envafolelimab at pre-RT, post-RT, and post-immunotherapy (post-ICT) time points using single-cell RNA sequencing, single-cell immune repertoire sequencing, and spatial RNA sequencing. Patients were categorized into two groups based on pathologic response: pathological complete response (pCR; n=20) and non-pCR (NpCR; n=12).

**Results:** We profiled 454,369 cells across 93 samples, identifying eight major cell types. In pCR tumors, radiotherapy upregulated MHC-I/II expression and activated type I/III interferon pathways, indicating enhanced immunogenicity. Conversely, NpCR tumors showed persistent proliferation and metabolic reprogramming via E2F, Myc, and OXPHOS pathways. Immunologically, higher baseline CXCL13<sup>+</sup> CD8<sup>+</sup> T cells and tertiary lymphoid structures (TLS) were associated with better response. RT strengthened CXCL13-CXCR5 signaling between CXCL13<sup>+</sup> CD8<sup>+</sup> T cells and Bfoc/Bgc cells, promoting TLS formation. CXCL13<sup>+</sup> CD4<sup>+</sup> T cells further supported TLS development during ICT. In NpCR tumors, RT induced a prominent upregulation of immunosuppressive molecules in myeloid cells, including LAMP3<sup>+</sup> dendritic cells (DCs), XCR1<sup>+</sup> DCs, CXCL11<sup>+</sup> monocytes, and IFIT1<sup>+</sup> neutrophils. Stromal analysis revealed that post-ICT, CXCL12<sup>+</sup> fibroblasts enhanced CD8<sup>+</sup> T cell recruitment via CXCL12-CXCR4 interactions, suggesting a potential role in reshaping the TME to favor anti-tumor responses.

**Conclusion:** Together, these findings elucidate key immune and tumor-intrinsic mechanisms underlying the response and resistance to the combination of SCRT and immunotherapy in MSS LARC, which may inform novel therapeutic strategies to optimize patient stratification and enhance treatment efficacy.

### Biography

Xiya Jia is a third-year PhD candidate in Oncology at Zhejiang University, specializing in the identification of prognostic and therapeutic biomarkers in colorectal cancer (CRC). Her research especially focuses on elucidating the molecular and cellular mechanisms that drive CRC progression and influence treatment response, with a particular emphasis on immunotherapy and neoadjuvant treatment strategies. She has contributed to several peer-reviewed publications in reputable journals, including *BBA – Molecular Basis of Disease* and the *International Journal of Surgery*, and has presented her findings at national and international academic conferences. With a strong commitment to advancing precision medicine, she hopes her work will contribute to improving outcomes for CRC patients and provide valuable insights for future research.

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## "PRE-TRANSFUSION TESTING" WHICH ENCOMPASSES THE PREANALYTIC, ANALYTIC, AND BLOOD ADMINISTRATION PROCESSES

**Ahmed Alharbi**

*King Abdulaziz Medical City -National Guard, Saudi Arabia*

### **Abstract:**

Pre-transfusion tests process, a description of the routine tests conducted by a transfusion service prior to administering a blood product. These tests include ABO and RhD typing of the patient's red blood cells and an antibody screen with the patient's plasma and employ a method to detect clinically significant non-ABO antibodies to red cell antigens then doing the latter Compatibility testing, which often referred to as the cross-match. The crossmatch may either be performed serologically or electronically. Moreover This process includes accurate and thorough completion of the requisition, accurate patient identification, proper collection and labelling of the blood sample from the patient, laboratory testing to determine the patient's blood group and to identify the presence of red blood cell alloantibodies Fully automation of ABO and D grouping procedures has significantly improved the accuracy and security of results and should be used wherever possible.

### **Biography**

Ahmed Al Harbi is a seasoned Transfusion Medicine Supervisor with over 20 years of experience in immunohematology, blood banking, and laboratory quality management. He leads the Transfusion Medicine Services at King Abdulaziz Medical City, accredited by AABB, CAP, JCI, and ISO15189. He holds an MSc in Clinical Laboratory Science (Hematology and Immunohematology) and a BSc in Medical Technology from King Saud University. His credentials include BB(ASCP), BB(NCA), CPHHA, and completion of the AABB Professional Engagement Program (2020, 2025). Ahmed established the KASCH Blood Bank (2015), implemented digital transfusion procedures (2018), and developed transfusion protocols for stem cell transplant and one-day surgeries. He has also contributed to accreditation inspections and coordinated technologist training programs.

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## SKIN DEEP? SPONTANEOUS REGRESSION OF MERKEL CELL CARCINOMA WITH UNDERLYING NODAL SPREAD AND SYNCHRONOUS LYMPHOMA

**Nuha Mohamed, SN Rogers and O Khattak**

*Wirral University Teaching Hospital NHS Foundation Trust, United Kingdom*

### **Abstract:**

Merkel cell carcinoma (MCC) is a rare but aggressive cutaneous neuroendocrine malignancy. We present a clinically striking case of a 65-year-old woman with biopsy-proven MCC of the right cheek, initially diagnosed following presentation with a presumed sebaceous cyst. Preoperative PET imaging revealed FDG avid nodes in the right parotid and level II neck regions. At the time of surgery, however, the primary cutaneous lesion had spontaneously regressed, leading to a more conservative surgical approach with local excision only. Histology of the excised site showed no residual carcinoma.

Despite regression of the primary tumour, subsequent imaging and FNA confirmed nodal metastases. The patient underwent a right superficial parotidectomy and selective neck dissection, which revealed a parotid node positive for metastatic MCC, and incidentally, a right level Ib node positive for follicular lymphoma. She completed adjuvant radiotherapy and remains under close follow-up.

This case highlights several clinically relevant phenomena: the potential for biopsy-induced spontaneous regression of skin cancers, the risk of misleading clinical presentation due to primary lesion regression, and the rare synchronous occurrence of haematological malignancy. Our findings emphasise the importance of thorough nodal staging, vigilance even in regressing lesions, and multidisciplinary care. The co-existence of two malignancies in the same lymphatic territory also raises questions about tumour microenvironment and immune modulation.

### **Biography**

Nuha Mohamed is a Dental Core Trainee in Oral and Maxillofacial Surgery at Arrowe Park Hospital. She holds a BDS (Hons) and MFDS RCS (Eng), with particular interests in oral surgery, oral and maxillofacial radiology, and academic writing. Her current role has sparked engagement with head and neck oncology through multidisciplinary case management.

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## LYMPHOPROLIFERATIVE DISORDERS AND RENAL DYSFUNCTION: A CASE OF CLL-RELATED AKI

**Akhil Tomy, Aswathi Balakrishnan, Siva Shrikanth, Maria John, Cristoss Gregory and Jacob Sebastain**

*Betsi Cadwaladr University Health Board, United Kingdom*

### **Abstract:**

Chronic lymphocytic leukaemia (CLL) is typically indolent but may result in organ-specific complications, including renal dysfunction. We report the case of an 81-year-old male who presented with acute kidney injury (AKI), following an initial admission for headache and diplopia. His creatinine had risen to 296  $\mu\text{mol/L}$ , with an estimated glomerular filtration rate (eGFR) of 18, down from 45 one year prior. His medical history included CLL diagnosed in 2019, which had evolved into low-grade B-cell non-Hodgkin's lymphoma in 2020. A scalp lesion excised in February 2024 confirmed CLL/small lymphocytic lymphoma (SLL) involvement.

Clinical evaluation revealed stable cardiovascular, respiratory, and neurological status. Lab investigations showed anaemia, leukocytosis, and abnormal renal function. A renal biopsy revealed small B-cell lymphocytic infiltration with lambda light chain restriction, indicating CLL/SLL-related renal involvement. No evidence of haemolysis or immune complex deposition was identified.

Imaging supported systemic disease progression, including splenomegaly and widespread lymphadenopathy. The All-Wales Lymphoma panel recommended initiating acalabrutinib, a Bruton's tyrosine kinase inhibitor, which was subsequently started. This therapeutic decision reflects the growing importance of targeted therapies in managing complex CLL presentations involving extramedullary organs such as the kidneys.

This case emphasizes the diagnostic complexity in elderly patients presenting with AKI and known lymphoproliferative disorders. It highlights the critical role of renal biopsy in identifying direct leukemic infiltration and guiding therapy. A multidisciplinary approach was key in achieving an accurate diagnosis and initiating appropriate treatment, underscoring the evolving role of precision medicine in haematology-oncology.

### **Biography**

Akhil Tomy is currently working in the Department of Medicine at Betsi Cadwaladr University Health Board in the United Kingdom. He completed his MBBS in 2021 from Madurai Medical College, affiliated with The Tamil Nadu Dr. M.G.R. Medical University, India. Since moving to the UK, he has been serving in the NHS for nearly two years, gaining extensive clinical experience across a range of medical specialties. Tomy has a strong passion for medical education, teaching, and clinical research. His interests lie particularly in internal medicine and renal medicine, with aspirations to pursue specialist training in nephrology. He is actively involved in case-based learning and evidence-based clinical practice, with a keen interest in complex diagnostic challenges and multidisciplinary approaches to patient care. In addition to his clinical duties, Tomy is committed to lifelong learning and contributing to medical literature through case studies and collaborative research. His goal is to integrate his interest in education with a future career in renal medicine, striving to improve both patient outcomes and trainee development in the healthcare system.

## INHIBITOR TESTING IN HEMOPHILIA OUR EXPERIENCE AT PEDIATRIC INSTITUTE FROM NORTH INDIA

**Savitri Singhand Jacob Sebastain**

*Post Graduate Institute of Child Health, Noida*

### Abstract:

Although inhibitor development is a challenge in hemophilia, the provision for testing is available only in select centers. Hence, detection of inhibitors in patients dependent on treatment from district hospitals is difficult. Often for such patients, inhibitor camps are held in periphery and samples shipped for testing. As preanalytical variables are many in inhibitor testing, this is fraught with errors.

**Aims:** The paper describes the experience of our institute conducting inhibitor testing in samples received from hemophilia camps from peripheral centers.

**Methods:** The samples received from 8 camps in Uttar Pradesh and NCR (Faridabad, Gurgaon) between April 2022 to August 2023 were analyzed. Samples taken by phlebotomist, collected in citrate vials were spun and packed in thermocol boxes with dry ice. The duration between collection and receipt in our lab was 3-4 hours based on the location of the camp. Details of prior diagnosis, reasons for testing and time of last infusion were filled by technician in a proforma. Samples were checked for labels, fill and adequacy of anticoagulation. As a policy, all positive samples were retested by calling the patient to the hospital.

**Results:** 247 samples from 8 camps in Western UP and NCR (Faridabad, Gurgaon) were received. Of these, 239 samples were processed further and rest 12 ( 4.5 %) were discarded. The reasons included clotted sample, absent requisition form and hemolyzed, only form no sample. No issue related to transport was noted. All samples were heated prior to inhibitor testing as previous infusion data was incomplete. Factor assay was repeated in all. Out of 239, 218 cases of hemophilia A and 21 hemophilia B were tested. out of 239, 55 (23%) samples were positive for inhibitors. 5 patients had a low titer inhibitor and rest 48 were high titer. And in 2 inhibitor positive patient BU testing could not be done (sample QNS). None of hemophilia B patient was found inhibitor positive. On retesting, only 50 were positive and 5 negative.

**Conclusion:** Despite a stringent process, preanalytical errors continue to exist. Reconfirmation of camp samples is always advisable before counseling for further treatment.

### Biography

Savitri Singh is working as professor in department of Pathology, Postgraduate Institute of Child Health Noida. She is a product of the prestigious King George Medical University, Lucknow from where she obtained her specialization degree(MD Pathology).She is an expert in the fields of cytopathology and Hematology and has obtained training from high end centres like CMC Vellore and AIIMS delhi for hematology diagnosis and is also an expert in the field PID, trained from NIH Mumbai.She is instrumental in establishing the hematology and specialized coagulation lab at her institute and is a keen teacher and researcher. She is an integral part of the BMT team at PGICH and instrumental in starting UK-NEQAS at PGICH, Noida.

## FROM THE BRINK OF LIVER FAILURE TO B-ALL REMISSION : AN INCREDIBLE RECOVERING

**Sruthi Pradeep and Deepak Charles**

*Aster Medcity, India*

### Abstract:

**Introduction:** Among paediatric population, acute liver failure is a common complication of infections, drug induced, vascular and autoimmune diseases. Acute lymphoblastic leukaemia is the most common haematological malignancy in children. It usually presents with fatigue, pallor, easy bruising, frequent infections and swollen lymph-nodes. Here we present an unusual case of an 11-year-old girl child who presented with hepatic encephalopathy which was eventually diagnosed with B cell Acute lymphocytic leukaemia.

**Case Report:** A 11-year-old girl who was apparently normal, presented with fever, vomiting and jaundice at another centre. Later she developed altered sensorium along with worsening of liver functions, and she was diagnosed with hyper-acute liver failure with hepatic encephalopathy grade 2, she was referred to our centre for liver transplantation. During her course in the hospital, blood investigations showed features of pancytopenia, High ferritin, coagulopathy and deranged liver function tests. She was started on hepato-protective measures. However, in view of hyperammonaemia and worsening of sensorium, she was mechanically ventilated, underwent plasmapheresis and CRRT. All infective parameters were negative. She had features of pancytopenia, splenomegaly, high ferritin and history of fever hence a possibility of Hemophagocytic lymphohistiocytosis was considered. She underwent bone marrow aspiration and biopsy which revealed B cell Acute lymphocytic leukaemia. She was started on intravenous steroids. CSF study was negative for brain metastasis. Prophylactic IT methotrexate was administered and eventually she was started on chemotherapy with BFM 2009 protocol. She showed significant improvement following which she underwent maintenance chemotherapy with IT methotrexate. She is currently in MRD negative remission.

**Conclusion:** A child presenting with acute liver failure must undergo blood investigations and radiological imaging to rule out all the most common possible causes of acute liver failure. Here bone marrow biopsy helped us in clinching the diagnosis of B-ALL. Early and prompt diagnosis and treatment in such complicated cases carry good prognosis.

### Biography

Sruthi Pradeep completed her schooling in Mumbai, India. She did her undergraduate medical studies at Mahatma Gandhi Mission Medical College, Aurangabad, in Maharashtra. She then worked for 2 years as a medical officer. She is currently pursuing her third year of Internal Medicine training – JRCPTB UK at Aster Med city, Kochi, Kerala.

# Cancer and Oncology Research

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## UPDATES ON TP53-MUTATED MYELOID NEOPLASMS

**Mithun Shah**

*Mayo Clinic, USA*

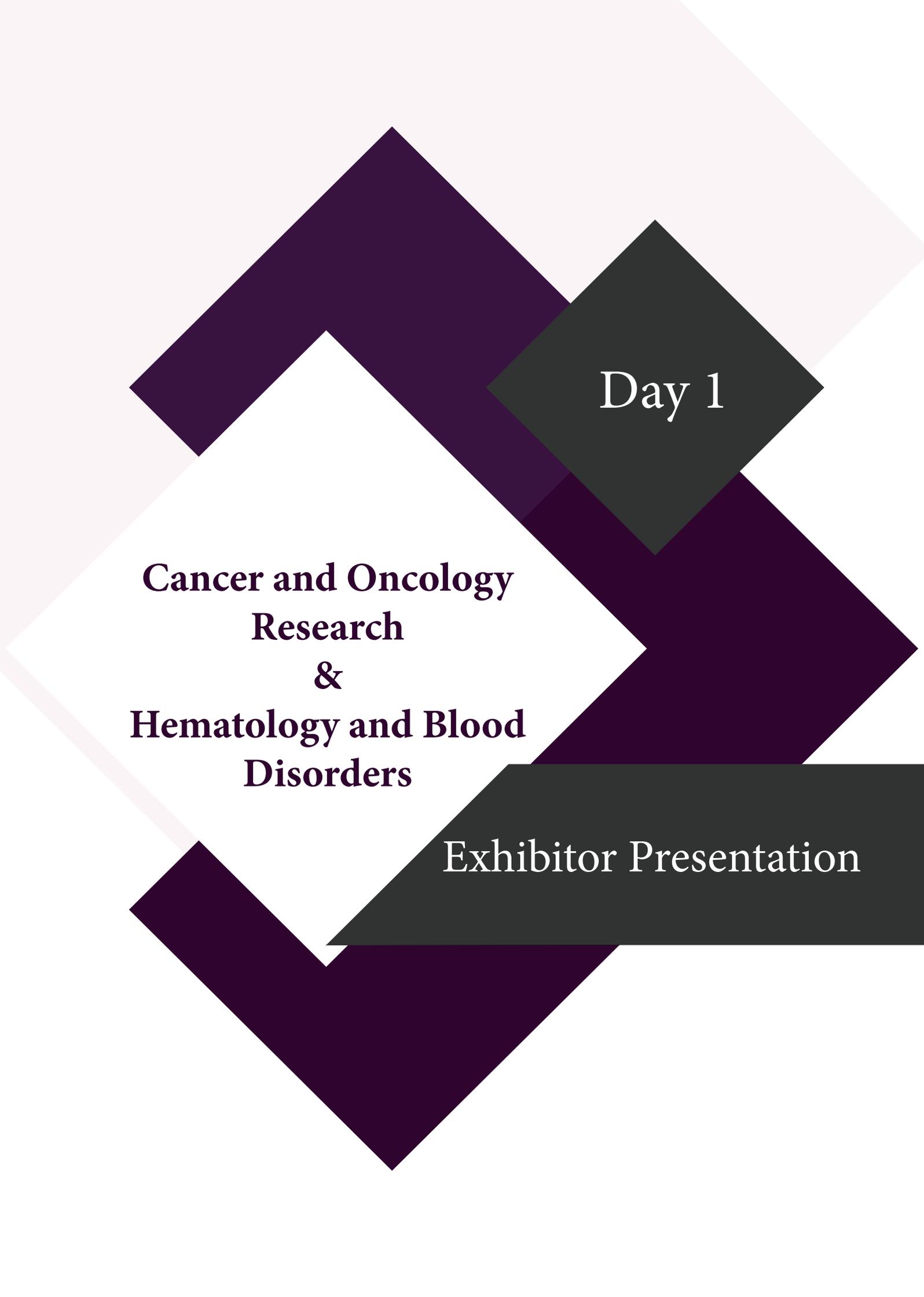
### **Abstract:**

Alterations in the tumor suppressor gene TP53 are common in human cancers and are associated with aggressive nature. Approximately 8-12% of myelodysplastic syndrome (MDS) and acute myeloid leukemia (AML) harbor TP53-mutations (TP53mut) and present immense challenge due to inherent chemoresistance and poor outcomes. As TP53mut are more common in older individuals and those with secondary/therapy-related myeloid neoplasms (MN), its incidence is expected to increase with an aging population and rising proportion of cancer survivors. Treatments used for other MN-intensive chemotherapy, hypomethylating agents, and BCL-2 inhibitor venetoclax do not improve survival of TP53mut MN patients meaningfully. Additionally, further development of many promising agents has been discontinued, highlighting the challenges. Widespread acknowledgement of these problems led to the recognition of TP53mut MN as a distinct entity in the 5th edition of the World Health Organization and International Consensus Classifications. However, critical discrepancies between the two classifications may lead to under- or overestimation of the prognostic risk.

In this presentation, we review recent advances in biology, diagnosis, and treatment of TP53mut MN. The development of TP53mut MN is positioned at the intersection of age, hereditary predisposition, and anti-cancer therapies. Precursor TP53mut clones can be detected years prior to the eventual leukemic transformation-raising the possibility of early intervention. We discuss the two classification systems and bearing of the discrepancies between the two on timely and effective management. We provide novel evidence in the areas of discrepancies. Finally, we review the current therapeutic landscape and the obvious limitations of the currently used therapies.

### **Biography**

Mithun Shah, M.D., Ph.D., is an assistant professor of medicine and oncology, and consultant in the Division of Hematology. He has received several honors and awards for his research and clinical work, including the 2014 Merit Award from the Conquer Cancer Foundation of ASCO, the Paul Calabresi Program in Clinical-Translational Research at Mayo Clinic Cancer Center K12 Career Development Award, and the New Investigator Award from the Leukemia Research Foundation. He has published more than 80 peer-reviewed articles in prestigious journals, such as *Blood*, *JCO*, and *Haematologica*, and has served as a reviewer for several journals and funding agencies. His research interests include therapy-related myeloid neoplasms, histiocytic disorders, and molecular and genomic predictors of outcomes in acute myeloid leukemia and stem cell transplantation.



Day 1

**Cancer and Oncology  
Research  
&  
Hematology and Blood  
Disorders**

Exhibitor Presentation

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## THE IMPORTANCE OF COMPREHENSIVE GENOMIC PROFILING (CGP) BY ACCURACY PLUS MEDICAL LAB – ABUDHABI

**Mohammad Sanowar**

*CeGaT, Germany*

### **Abstract:**

#### **What Is Genetic Tumor Diagnostics?**

Cancer arises from changes in genes that deregulate cell growth and cause cells to grow out of control. Genetic tumor diagnostics hence is a powerful tool as it detects predispositions for cancer, identifies existing diseases and gives insights into the disease mechanism for optimal treatment decisions.

A valid diagnosis improves the patient's quality of life drastically. It provides clarity and guidelines for action to lower the risk of developing cancer or to detect the disease early.

Based on the information gained, physicians who treat patients with cancer can determine the most effective therapy to increase the chances of recovery.

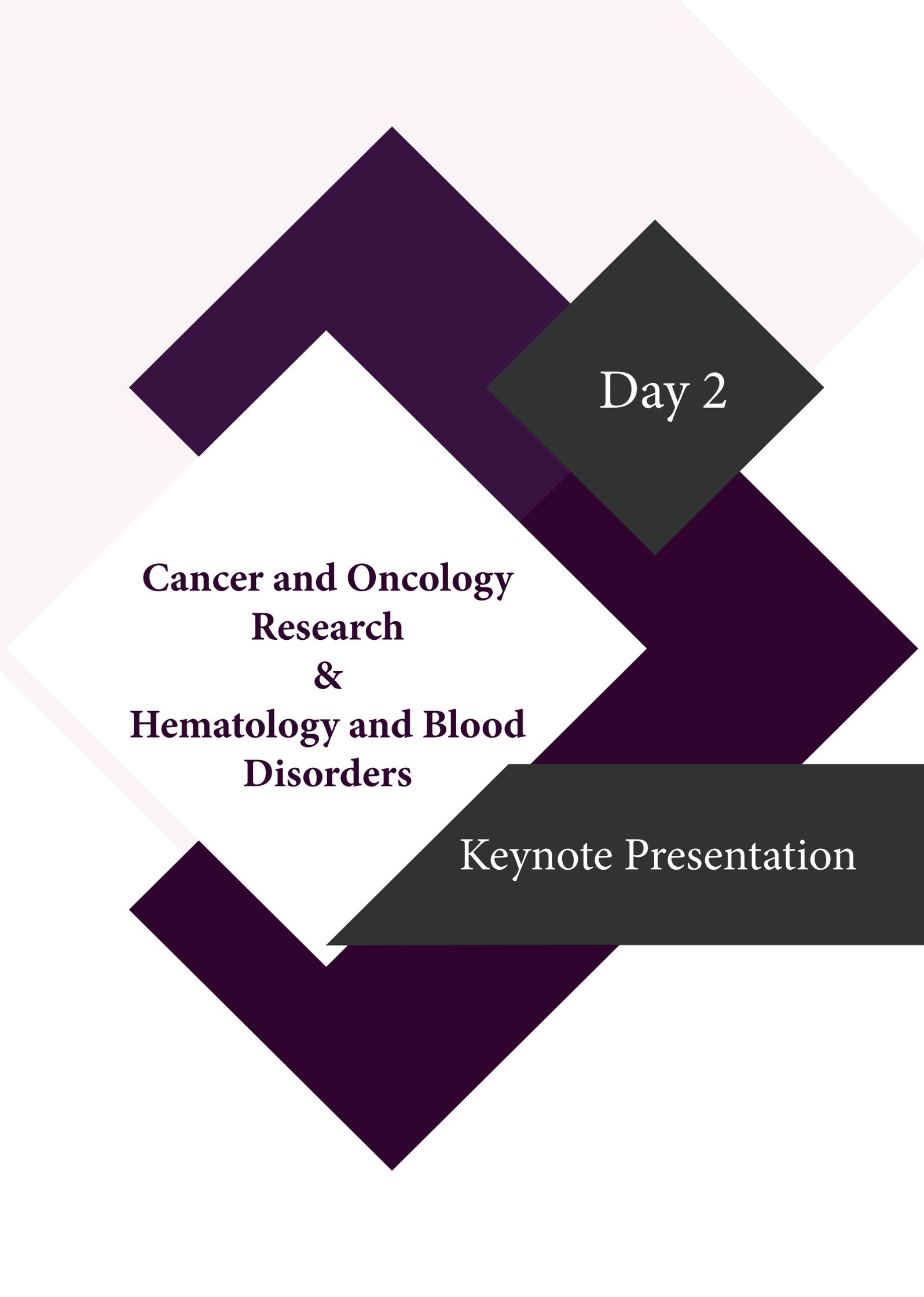
Genetic diagnostics should be integrated early into the diagnostic plan – because the right diagnosis is the basis for optimal management of cancer.

#### **NGS-Guided Oncogenetics - A New Era of Cancer Management**

The individual set of tumour-specific mutations helps the tumour to survive and develop resistance against therapeutic agents. To choose a promising treatment strategy, a deep and accurate look into the molecular underpinnings of individual tumours is required. The use of next-generation sequencing (NGS) has initiated a new era in cancer therapy and is a driving force to change the future in personalized precision medicine. Through NGS analysis of genetic mutations, we can tailor the oncological treatments to each patient's features and each cancer genomic alterations to maximize the curative effect, minimize damage to healthy tissues, and optimize resources.

### **Biography**

Hossain is the Business Manager for MEA region at CeGaT, a pioneering provider of genetic diagnostics and NGS solutions. From rare disease identification to prenatal and oncology testing for targeted treatment, we empower healthcare professionals with cutting-edge insights. Accredited to international standards (CAP, CLIA, ISO 15189, ISO 17025), we are your trusted partner in genetic testing.



Day 2

**Cancer and Oncology  
Research  
&  
Hematology and Blood  
Disorders**

Keynote Presentation

## NOVEL TUMOR MICROENVIRONMENT -MEDIATED SIGNALING THAT REGULATES BREAST CANCER PROGRESSION AND METASTASIS



**Ramesh Ganju**

*The Ohio State University, USA*

### Abstract:

Here, we show that the expression of the slit guidance ligand 2 (SLIT2) tumor suppressor gene is reduced in breast cancer. Further analysis of patient samples revealed high Slit2 expression strongly associated with better patient survival and inversely correlated with the abundance of tumor-associated macrophages (TAMs). Using genetically engineered breast cancer cells, adenovirus gene therapy, and preclinical xenograft models, we show that SLIT2 overexpression or slit 2 treatment inhibits breast tumor growth and metastasis in vitro and in vivo. Mechanistic studies revealed significant inhibition of M2-like tumor-associated macrophages (TAMs) in breast tumors. TAMs are heterogeneous and comprise antitumor M1-like (M1-TAM) or pro-tumor M2-like (M2-TAM) TAMs. M2-TAMs are a significant component of the stroma in breast tumors, enhancing metastasis by reducing their phagocytic ability and increasing tumor fibrosis. Slit2 increased the recruitment of M1-TAMs to the tumor and enhanced the ability of M1-TAMs to phagocytose tumor cells in vitro and in vivo. This Slit2-mediated increase in M1-TAM phagocytosis occurred via suppression of IL6. Slit2 also diminished fibrosis in breast cancer mouse models by increasing the expression of matrix metalloproteinase 13 in M1-TAMs. Overall, these studies define the role of Slit2 in inhibiting metastasis by activating M1-TAMs and depleting tumor fibrosis. Furthermore, these findings suggest that Slit2 can be a promising immunotherapeutic agent to redirect TAMs to serve as tumor killers for aggressive and metastatic breast cancers. In addition, Slit2 expression, along with CD163+ TAMs, could be used as an improved prognostic biomarker in patients with breast cancer.

### Biography:

Ramesh Ganju, Endowed Professor and Vice Chair of the Department of Pathology at Ohio State University Medical Center, has elucidated novel tumor microenvironment-mediated signaling mechanisms that regulate the progression and metastasis of breast and lung cancers. He is also analyzing the roles of various pro- and anti-inflammatory molecules in regulating tumor-stromal interactions. Additionally, he is developing novel therapies, including immunotherapy against breast and lung cancer, using various pre-clinical mouse models, including patient-derived xenografts. He has also identified novel biomarkers for triple-negative breast cancer using patient samples.

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## DECIPHERING HEMOGLOBINOPATHIES: A JOURNEY THROUGH LABORATORY DIAGNOSTICS AND CASE DISCUSSIONS



**Arvind Jain**

*SKMC - SEHA, United Arab Emirates*

### Abstract:

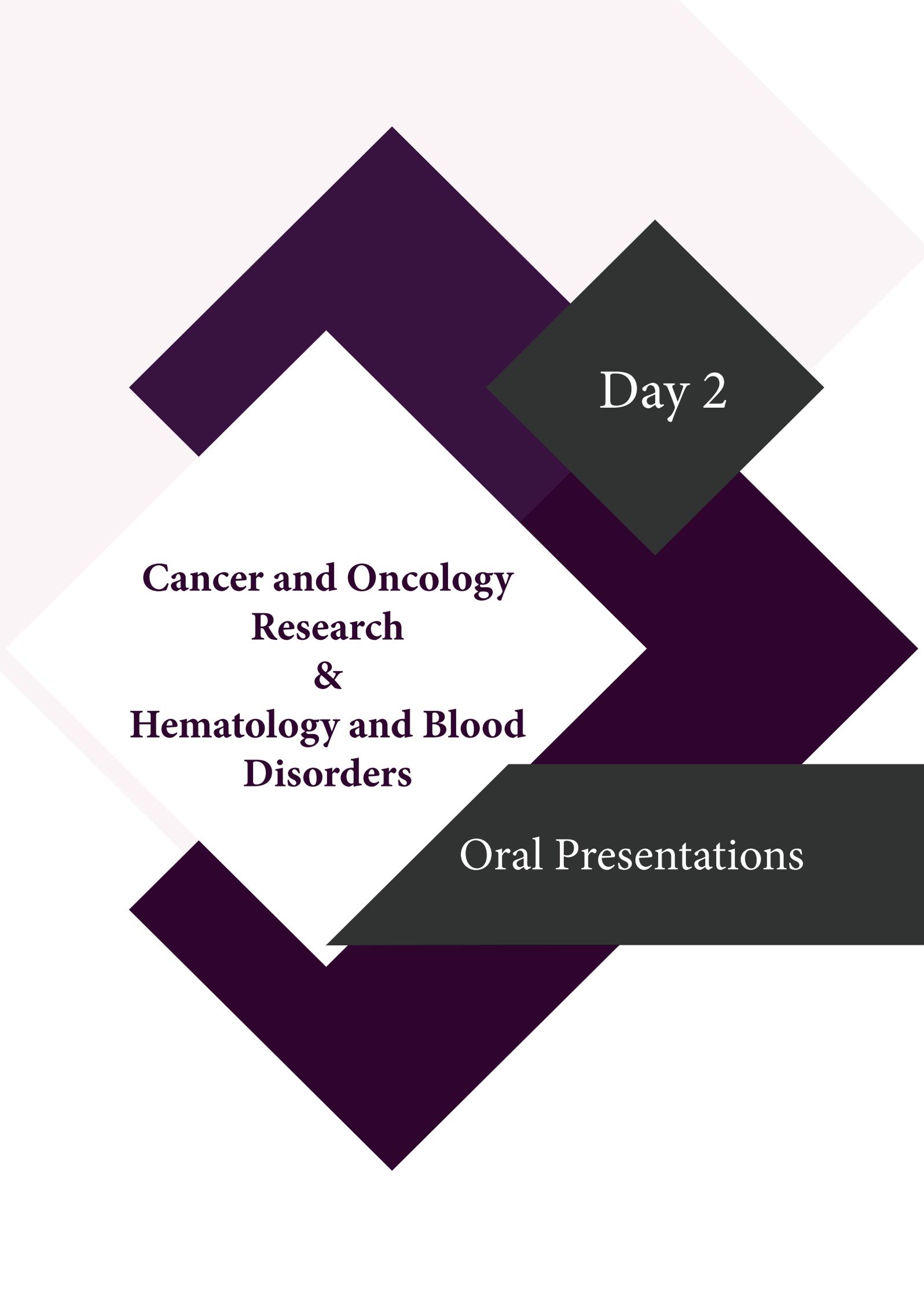
Hemoglobinopathies are genetic diseases related to Hemoglobin (Hb) synthesis, constituting the most common monogenic autosomal recessive hereditary red blood cell disorders worldwide, with an ever-increasing global disease burden each year. Autosomal means that males and females can be equally carriers or affected and recessive means that carriers of these disorders are generally healthy, clinically silent and therefore often unaware of their carrier status. However, the offspring of 2 carrier parents have a 25% chance of inheriting both abnormal genes from each of the parents and of being severely affected by having the disease.

Screening and accurate identification of Hb variants have become increasingly important in antenatal diagnosis and prevention of Hb disorders. Hemoglobinopathy / carrier screening programs are considered beneficial in minimizing the incidence of new cases and have been successfully implemented in many endemic countries, one of which is UAE where the incidence of consanguineous marriages is also high. I would like to share my experience with you all from one of the biggest tertiary care institutes of UAE in Abu Dhabi, where a very large number of premarital screening samples for Hb analysis are processed and reported on a daily basis.

This presentation will not only offer insight into the different methodologies available for Hb analysis but will also highlight how these methods compare to each other. Through this presentation an attempt will be made to offer a simplified approach to identification of the most commonly encountered hemoglobin disorders by the means of case discussions. In addition, appearance of common hemoglobin disorders on different methodologies, practical comments on reporting the results of hemoglobin studies and the expected clinical impact of the various findings will be discussed.

### Biography:

Arvind Jain has completed his 'M.D. (Pathology)' from Shivaji University, Maharashtra, India in 2002. In addition to his clinical degrees, he has obtained a 'Diploma in Hospital and Healthcare Management' and 'Diploma in Medicolegal Sciences' from India. Dr. Jain is also 'Certified Six Sigma Green Belt' and has earned his 'M.B.A. from Torrens University, Australia, with high distinction in all subjects and was awarded topper and best student award among all the students in UAE and Bahrain. He was awarded Doctor of Philosophy / Ph.D in 2023 by CMJ University, India. He is an excellent pathologist commanding in-depth subject knowledge and astute administrative skills with over 22 years of experience in various subspecialties of 'Laboratory Medicine and Pathology'. He has a wide experience of establishing world class laboratories across the subcontinent and in the UAE. He is an active member in various scientific societies and is 'Editorial and Reviewer Board Member' of some of the prestigious scientific journals in the field of Laboratory Medicine and is a College of America (CAP) Inspection Team leader. Jain worked in renowned private hospitals and multinational reference laboratory as 'Head of Department and Consultant Pathologist' in Mumbai, India, and Colombo, Sri Lanka; before moving to the UAE in 2008. Prior to joining Biosytech Medical (Reference) Laboratory in Dubai, he worked at prestigious Sheikh Khalifa Medical City, Abu Dhabi, as Hematopathologist and Histopathologist; and at Imperial College London Diabetes Centre under Mubadala Healthcare, as 'Laboratory Director, Anatomic and Clinical Pathologist' overseeing their diagnostic services both in Abu Dhabi and Al Ain.



Day 2

**Cancer and Oncology  
Research  
&  
Hematology and Blood  
Disorders**

Oral Presentations

## EVIDENCE-BASED RISK STRATIFICATION OF MYELOID NEOPLASMS HARBORING TP53 MUTATIONS

**Mithun V. Shah**

*Mayo Clinic, USA*

### Abstract:

**Purpose:** To provide evidence-based risk-stratification of TP53-mutated (TP53mut) myeloid neoplasms (MN).

**Patients and Methods:** Retrospective analysis of 580 MN cases harboring TP53mut with variant allele frequency (VAF)  $\geq 2\%$  using the revised 4th edition of the World Health Organization Classification (WHO), except that myelodysplastic syndrome (MDS) with  $< 5\%$  bone marrow and  $< 2\%$  peripheral blood blasts were combined as MDS with low blasts (MDS-LB).

**Results:** There were 219 (37.8%), 194 (33.4%), 92 (15.9%), and 75 (12.9%) acute myeloid leukemia (AML), MDS-LB, MDS excess blasts-2 (MDS-EB2), and excess blasts-1 (MDS-EB1), respectively. Conditional Inference Trees (CIT) analysis identified four risk groups with distinct survival: (i) MDS-LB; (ii) MDS-EB1/EB2 or AML VAF  $< 10\%$ ; (iii) MDS-EB1/EB2 VAF  $\geq 10\%$ ; and (iv) AML VAF  $\geq 10\%$ .

MDS-LB cases with biallelic loss or monoallelic loss with complex karyotype (CK) had comparable survival that was significantly shorter than monoallelic MDS-LB without CK (12.7 vs. 13 vs. 34.8 months,  $P < 0.0001$ ). Second, MDS-EB1/EB2 and AML with VAF  $< 10\%$  without CK had favorable survival compared to those with CK as well as MDS-EB1/EB2 with VAF  $\geq 10\%$  (26.2 vs. 5.6 vs. 6.3 months,  $P = 0.003$ ). Third, biological features and survival (9.6 vs. 7.2 months,  $P = 0.12$ ) were comparable between MDS-EB1 and -EB2 with VAF  $\geq 10\%$ . Finally, survival of TP53mut AML was poor (median 3.9 months) regardless of allelic or CK status, supporting its inclusion as TP53mut MN. The 5th edition of the WHO, the International Consensus Classification, and the proposed model acknowledged 211 (36.4%), 468 (80.7%), and 514 (89.1%) cases as TP53mut MN, with concordance indices of 0.571, 0.617, and 0.66, respectively.

**Conclusion:** Evidence-based hierarchical model acknowledged poor survival of a higher proportion of cases as TP53mut MN compared to the current classifications.

### Biography:

Mithun Shah, M.D., Ph.D., is an assistant professor of medicine and oncology, and consultant in the Division of Hematology. He has received several honors and awards for his research and clinical work, including the 2014 Merit Award from the Conquer Cancer Foundation of ASCO, the Paul Calabresi Program in Clinical-Translational Research at Mayo Clinic Cancer Center K12 Career Development Award, and the New Investigator Award from the Leukemia Research Foundation. He has published more than 80 peer-reviewed articles in prestigious journals, such as *Blood*, *JCO*, and *Haematologica*, and has served as a reviewer for several journals and funding agencies. His research interests include therapy-related myeloid neoplasms, histiocytic disorders, and molecular and genomic predictors of outcomes in acute myeloid leukemia and stem cell transplantation.

## ANALYSIS OF EPIDEMIOLOGICAL, CULTURAL AND CLINICAL ASPECTS OF OVARIAN CANCER DIAGNOSIS AND TREATMENT IN KAZAKHSTAN: RESULTS OF EVERY WOMAN STUDY

S Zh Khaidarov Saken, Askar Aidarov, A Zh Moldakaryzova, Izmailova Slu Habibievna and Yerbol Burahsev

*Kazakh National Medical University named after S.D. Asfendiyarov, Kazakhstan*

### Abstract:

Ovarian Cancer (OC) remains one of the most lethal forms of gynecological malignancies, particularly in low- and middle-income countries (LMICs), including Kazakhstan. Late diagnosis, limited access to advanced treatments, and significant socio-cultural barriers contribute to a poor prognosis. This study was conducted as part of the global The Every Woman Study™ project and aims to identify the complex clinical, epidemiological, and social factors influencing the care of women with OC in Kazakhstan.

To conduct a comprehensive analysis of the clinical and epidemiological characteristics, availability of diagnosis and treatment, as well as socio-economic and cultural factors affecting the diagnosis, therapy, and quality of life of OC patients.

A multicenter cross-sectional study was conducted across 9 oncology institutions in Kazakhstan from October 2022 to September 2023. The sample included 291 women aged 18–99 years diagnosed with OC no more than 5 years prior to the survey. Patients not meeting the temporal selection criterion and questionnaires with incomplete data were excluded. A standardized questionnaire covering clinical-demographic, behavioral, psycho-emotional, and social domains was used. Data analysis was performed using SPSS, employing descriptive and comparative statistical methods.

### Key Findings:

- 57.1% of women were diagnosed at stages III–IV.
- 54.5% reported experiencing financial difficulties, while 43% reported receiving free treatment.
- 56.5% experienced fear of treatment inefficacy, 51% reported fear of death, and 45% did not receive psychological support.
- 66% relied on their doctor for treatment decisions.
- Cultural barriers were prevalent: fear of seeking care, lack of knowledge about symptoms, and trust in traditional medicine.

**Conclusion:** To reduce the burden of OC, measures are needed to improve early diagnosis, expand access to treatment, and provide social support. Implementing a comprehensive approach that considers both medical and socio-cultural factors may improve patient outcomes and quality of life.

### Biography

Khaidarov Saken has expertise in evaluation and a passion for improving health and wellbeing. His open and contextual evaluation model based on responsive constructivism creates new pathways for improving healthcare research. He has developed this model after years of experience in research, evaluation, teaching, and administration, both in hospitals and educational institutions.

## LUPUS ANTIBODY DIAGNOSIS: CLINICAL RELEVANCE AND DIAGNOSTIC ADVANCES

**Azah Alghamdi**

*King Fahad Specialist Hospital, Saudi Arabia*

### Abstract:

**Background:** Systemic Lupus Erythematosus (SLE) is a chronic autoimmune disease characterized by a wide spectrum of clinical manifestations and the presence of autoantibodies. Accurate laboratory diagnosis is critical for early detection, disease classification, and monitoring of disease activity.

**Objective:** This presentation aims to highlight the diagnostic significance of autoantibodies in SLE, evaluate current testing methodologies, and discuss their clinical interpretation within the framework of updated classification criteria.

**Methods:** The session will explore key autoantibodies commonly tested in suspected lupus cases, including ANA, anti-dsDNA, anti-Sm, anti-Ro/SSA, anti-La/SSB, and antiphospholipid antibodies. Laboratory methods such as indirect immunofluorescence (IIF), ELISA, and multiplex immunoassays will be compared in terms of sensitivity, specificity, and diagnostic utility. Clinical correlations with lupus manifestations, including lupus nephritis and neuropsychiatric lupus, will be reviewed.

**Results:** Autoantibody profiling remains essential for diagnosis and management of SLE. Anti-dsDNA and anti-Sm antibodies demonstrate high specificity, while ANA remains a sensitive but non-specific screening tool. Multiplex immunoassays and emerging technologies offer improved throughput and standardization but require careful clinical interpretation.

**Conclusion:** Lupus antibody testing is a vital component of SLE diagnosis, but no single test is definitive. Integration of serological data with clinical assessment is crucial. Advances in immunoassay technology continue to improve diagnostic precision, yet awareness of limitations and false positives is essential for appropriate patient care.

### Biography

Azah Alghamdi is a healthcare professional specializing in Medical Laboratory Sciences, with over 25 years of experience in hematology, diagnostics, and healthcare management. She holds a master's degree in healthcare administration and has served as a CAP Inspector since 2014. Ms. Alghamdi is passionate about quality improvement, patient safety, and advancing healthcare services.

## PEMBROLIZUMAB-INDUCED MYASTHENIA GRAVIS WITH RESPIRATORY INVOLVEMENT AND FAVOURABLE CLINICAL OUTCOME

**Cristoss Gregory, Lowri Davies and Carey Macdonald-Smith**

*Betsi Cadwaladr University Health Board, United Kingdom*

### Abstract:

**Introduction:** Pembrolizumab, a PD-1 checkpoint inhibitor, is a key immunotherapy agent but predisposes patients to immune-related adverse events (IrAEs), including myasthenia gravis-like toxicity (irMG). Though rare (0.2% incidence), irMG can be life-threatening, particularly with respiratory involvement. We present a case of pembrolizumab-induced irMG in a patient with metastatic melanoma, highlighting diagnostic challenges and the importance of timely intervention.

**Methods/Materials:** A 63-year-old female with metastatic melanoma (liver, lungs) developed dyspnoea, dysphagia, bilateral ptosis, and bifacial weakness three weeks after her first pembrolizumab dose. Despite normal limb strength and reflexes, she exhibited paradoxical breathing and type 1 respiratory failure, requiring non-invasive ventilation and nasogastric feeding.

Suspecting immunotherapy toxicity, she received intravenous methylprednisolone and IVIG, followed by pyridostigmine for symptomatic relief and mycophenolate mofetil for additional immunosuppression. Despite a classic MG-like presentation, acetylcholine receptor and anti-MuSK antibodies were negative. Over three weeks, she showed significant improvement, weaning off oxygen and achieving stable discharge.

**Results and Discussion:** With increasing immune checkpoint inhibitor use, recognizing IrAEs is critical. Neurological toxicity occurs in 5% of patients on PD-1 inhibitors, and while irMG is rare, respiratory involvement significantly increases mortality risk. Early recognition and multidisciplinary management, including IVIG and high-dose steroids, improve outcomes.

Serial spirometry helps detect respiratory failure, and while antibody testing supports diagnosis, irMG can occur without detectable autoantibodies. Clinicians must maintain a high index of suspicion and initiate early immunosuppression to prevent severe complications.

**Conclusion:** As immunotherapy use expands, prompt recognition and management of irMG are crucial. This case highlights the need for early multidisciplinary intervention, aggressive immunosuppression, and close monitoring to optimize patient outcomes and reduce morbidity and mortality.

### Biography

Cristoss Gregory is an Internal Medicine Doctor currently working as a Medical Registrar at Ysbyty Glan Clwyd, North Wales, NHS UK. He completed his MBBS and has over five years of clinical experience, including three years within the NHS. His professional interests include oncology and acute medicine. Dr Gregory actively contributes to medical education and clinical governance activities. He is passionate about research and aims to pursue a career in oncology, focusing on innovative, evidence-based approaches to cancer care and improving patient outcomes.

## EVALUATING THE ROLE OF STRUCTURED EDUCATION ON CANCER PAIN IN COMMUNITY HEALTH CARE WORKERS IN RESTRICTED RESOURCE SETTINGS

Angotu Jayakrishnasai, Sanjay Chandra Das, Harsh Thakran and Gaurav Kumar  
*TATA Medical Center, India*

### Abstract:

**Background:** The availability of palliative care is extremely poor for people living in low and middle income countries. One of the key factors is non-availability of trained personnel as first responders. In a country like India with such a huge diversity, community health workers (CHW) were identified as a novel robust workforce to expand reach of scarce palliative care services to rural and other medically underserved areas.

**Objectives:** To assess the existing awareness and knowledge regarding cancer pain and determine the effect of a structured educational training on the improvement in the knowledge levels of CHWs.

**Methodology:** This is an interventional study to assess the awareness regarding cancer pain and knowledge levels post a structured educational training in community health workers. Subjects were in the final semester of their course in a government accredited nursing centre of semi-urban Kolkata. The CHWs completed a pre- and post test assessment following a structured educational training on Cancer Pain. Knowledge was evaluated by a self-administered structured questionnaire. After phase 1 CHWs received materials to assess cancer pain. Phase 2, two months later, evaluated their knowledge and awareness.

**Results:** A total number of 32 community health workers were recruited, among whom were 5 males and 27 females. Majority were in the age bracket of 19–22 years. In Phase 1, confidence level increased by 18.67%, pain management knowledge by 12%, and palliative care knowledge by 24.14%. Phase 2 showed further gains confidence increased to 20%, pain management knowledge to 29%, and palliative care knowledge to 42.02%. There was overall improvement of 30.34% after the end of phase 2. There was significant improvement in knowledge about principles of palliative care, understanding opioids in management of cancer pain ( $p < 0.01$ ). Awareness regarding various aspects of assessment and management of cancer pain improved significantly post training. Statistical analysis was done using Chi-square test.

**Conclusion:** There is reduced awareness regarding cancer pain management among grass root level workers. Imparting training through a structured approach brought about significant improvement in knowledge and skills of CHWs. This shall bring about a significant change in better symptom control and relief inpatients living in under deprived areas.

### Biography

Angotu Jayakrishnasai is working at the Tata Medical Center in Kolkata, Angotu Jayakarishnasai is a medical officer who is having special interest in community health, medical education, and palliative care. In order to close gaps in cancer pain management, especially in underprivileged and rural areas, he has been actively involved in training frontline healthcare workers. In order to raise awareness and enhance the standard of care at the local level, his work focuses on capacity-building through organized educational interventions. In order to provide fair access to symptom relief, Dr. Jayakrishnasai is dedicated to incorporating evidence-based practices into community care models.

## PRESENTATION TITLE: PREDICTING CERVICAL CANCER RISK USING A HYBRID DEEP LEARNING APPROACH ON THE CERVICAL CANCER RISK FACTORS DATASET

**Maryam Khaleghian**

*Payame Noor University of Tehran, Iran*

### Abstract:

Cervical cancer is a significant public health concern, ranking as one of the leading causes of cancer-related deaths among women globally. Early detection and accurate risk assessment are crucial for effective prevention and treatment strategies. This study aims to develop a hybrid deep learning model to predict cervical cancer risk by leveraging the Cervical Cancer Risk Factors dataset from Kaggle. The dataset comprises 36 features related to demographic information, lifestyle, and medical history of 858 female patients, with binary labels indicating the presence or absence of cervical cancer risk. Data preprocessing involved handling missing values through mean imputation, encoding categorical variables using onehot encoding, and normalizing numerical features to a standard scale. The dataset was split into training (70%) and testing (30%) sets. A hybrid deep learning model was constructed by integrating a Convolutional Neural Network (CNN) with a Long Short-Term Memory (LSTM) network. The CNN component was employed to extract spatial features from the input data, while the LSTM component captured temporal dependencies and sequential patterns. The hybrid model was trained using the Adam optimizer with a learning rate of 0.001 and a batch size of 32 for 100 epochs. Model performance was evaluated using accuracy, precision, recall, F1-score, and the area under the Receiver Operating Characteristic curve (AUC-ROC). The hybrid CNN-LSTM model achieved an accuracy of 92.5%, precision of 91.0%, recall of 93.8%, F1-score of 92.4%, and an AUC-ROC of 0.96 on the testing set. Feature importance analysis revealed that factors such as age, number of sexual partners, and history of sexually transmitted diseases were significant predictors of cervical cancer risk. The study demonstrates that a hybrid deep learning approach combining CNN and LSTM networks can effectively predict cervical cancer risk, offering a valuable tool for early detection and personalized intervention strategies. The integration of spatial and temporal feature extraction enables the model to capture complex patterns within the dataset, leading to improved predictive performance.

### Biography

Maryam Khaleghian is a researcher in Molecular Genetics at Payame Noor University of Tehran, Kish International Campus, Iran, specializing in the application of artificial intelligence (AI) in biomedical research. Her work focuses on disease classification and prediction using machine learning and deep learning techniques. She has contributed to advancing precision medicine through AI-driven models. Maryam actively participates in international conferences, presenting AI-driven solutions for genetic disorders, disease risk assessment, and predictive analytics in healthcare. She has Under Review Papers in peerreviewed journals and collaborates on multidisciplinary projects bridging genomics and AI. Her expertise includes bioinformatics, statistical modeling, and deep learning architecture like CNNs, RNNs, and transformer models. Proficient in Python, R, and MATLAB, she applies these tools for genomic data analysis and predictive modeling. Dedicated to innovation in biomedical AI, she continues expanding her research through academic collaborations and advanced training programs.

## PRESENTATION TITLE: HYBRID DEEP LEARNING MODEL FOR BREAST CANCER CLASSIFICATION USING THE BREAST CANCER WISCONSIN (DIAGNOSTIC) DATASET

**Farasat Veisi**

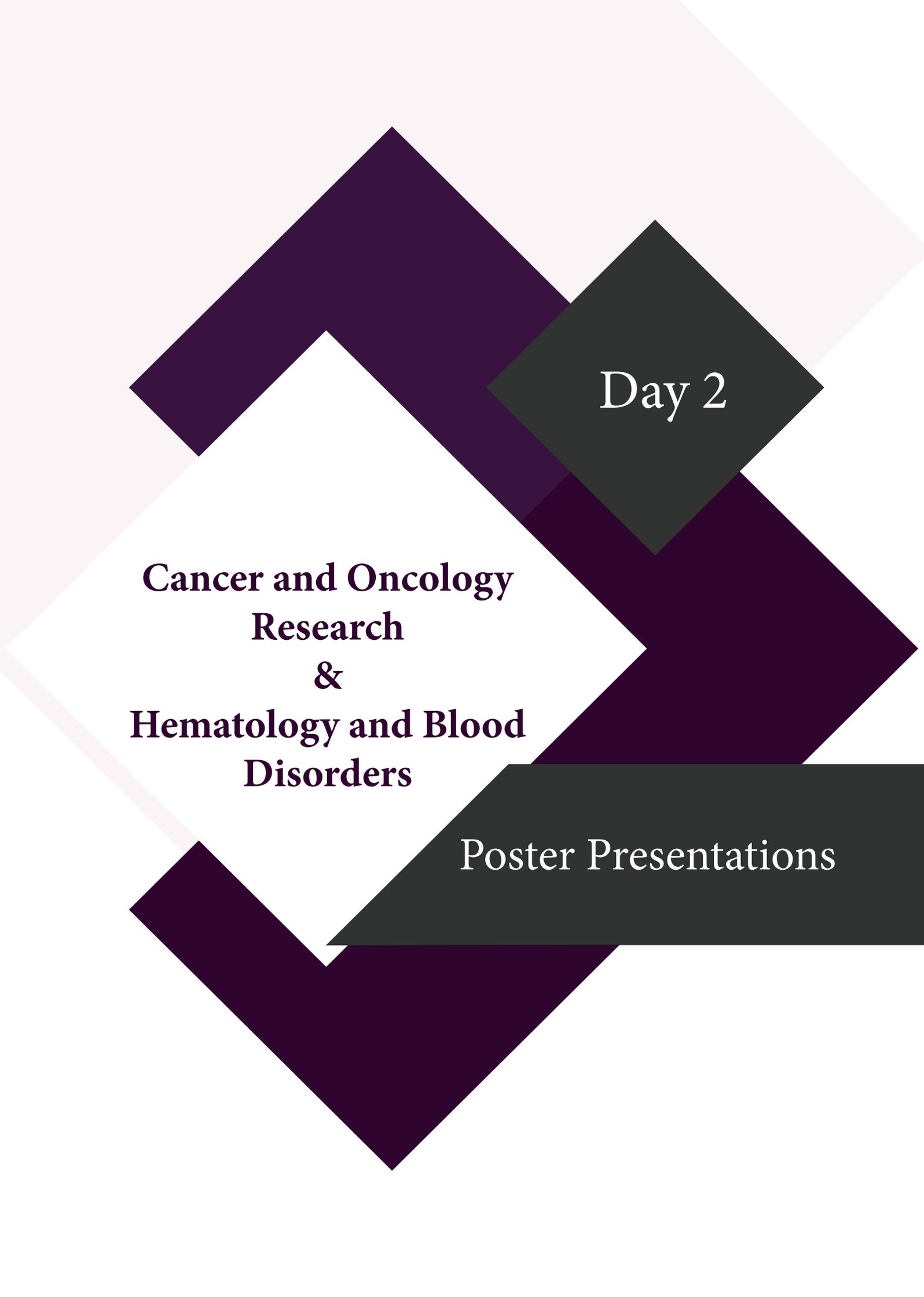
*Payame Noor University of Tehran, Iran*

### Abstract:

Breast cancer is a leading cause of cancer-related mortality among women worldwide. Early and accurate diagnosis is crucial for effective treatment and improved survival rates. Machine learning techniques, particularly deep learning models, have shown promise in enhancing diagnostic accuracy. This study proposes a hybrid deep learning approach, combining Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) networks, to classify breast cancer using the Breast Cancer Wisconsin (Diagnostic) Dataset. The Breast Cancer Wisconsin (Diagnostic) Dataset, available on Kaggle, comprises 569 instances with 30 numerical features extracted from digitized images of fine needle aspirate (FNA) of breast masses. These features describe characteristics of the cell nuclei present in the images. The target variable indicates whether the tumor is benign or malignant. Data preprocessing involved handling missing values, standardizing features, and encoding the target variable. The dataset was split into training (80%) and testing (20%) sets. The hybrid model integrates a CNN for feature extraction and an LSTM network for sequence learning, leveraging the temporal dependencies in the data. The model was trained using the Adam optimizer with a learning rate of 0.001 and evaluated using accuracy, precision, recall, F1score, and the area under the Receiver Operating Characteristic curve (AUC-ROC). The hybrid CNN-LSTM model achieved an accuracy of 94%, precision of 92%, recall of 91.5%, F1-score of 93.5%, and an AUC-ROC of 0.95 on the testing set. These metrics indicate superior performance compared to standalone CNN or LSTM models. Feature importance analysis revealed that mean radius, mean texture, and mean smoothness were significant predictors of malignancy. The proposed hybrid deep learning model demonstrates high efficacy in classifying breast cancer, offering a valuable tool for early diagnosis. By combining CNN and LSTM architectures, the model effectively captures both spatial and sequential patterns in the data, leading to improved performance.

### Biography

Farasat Veisi is a researcher in Molecular Genetics at the Payame Noor University of Tehran Qeshm International Campus, Iran, specializing in the integration of artificial intelligence (AI) in biomedical research. Her work focuses on disease classification and prediction through machine learning and deep learning algorithms, aiming to enhance diagnostic accuracy and personalized treatment strategies. Her research explores AI-driven predictive modeling in healthcare. Farasat actively participates in international conferences, presenting her findings on the intersection of genetics, AI, and precision medicine. Her expertise spans bioinformatics, statistical modeling, and deep learning architectures such as CNNs, RNNs, and transformer models. Proficient in Python, R, and MATLAB, she applies advanced computational techniques to genomic data analysis and disease risk assessment. Her work is driven by a commitment to bridging genomics and AI, contributing to innovative solutions.



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**Cancer and Oncology  
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Poster Presentations

# Cancer and Oncology Research

October 20-21, 2025 | Dubai, UAE



## PATIENT-CENTERED CANCER CARE: AN INVESTIGATION OF HEALTHCARE FACTORS AFFECTING PATIENT EXPERIENCE AT KING FAISAL SPECIALIST HOSPITAL & RESEARCH CENTER, SAUDI ARABIA

Naila W Khan, Amjad S Alhejaili and Roa Al Gain

*King Faisal Specialist Hospital & Research Center, Saudi Arabia*

### Abstract:

**Objectives:** To investigate healthcare factors and their association that affect patient-centered cancer care and patient experience.

**Design:** A non-interventional, prospective qualitative questionnaire.

**Setting:** At king Faisal specialist hospital & research center, Madinah, Saudi Arabia.

**Participants:** 140 patients with cancer aged >18 years. Source of information: questionnaires-based survey.

**Methods:** Patients participated was consented verbally and answered the questionnaire as one-to-one interviewer by the investigator. Patient-centered cancer care and patient experience was investigated using questionnaires from patient-centered quality of cancer care, and, for patient experience we used consumer assessment of healthcare providers and systems-cancer care survey.

**Results:** Out of 140 patients, 128 agreed to participate, with mean age of 52 ( $\pm$  SD 14.68). The Wilcoxon ranked-sum test showed a p-value of 0.004 ( $\alpha=0.05$ ), indicating that healthcare factors have significant effect on patient-centered cancer care and patient experience and there was strong relationship and association among healthcare factors of patient centered cancer care and patient experience. Analysis of the association between patient-centered cancer care and patient experience by Pearson's correlation with p-value of 0.36 ( $\alpha=0.05$ ), means that there was a positive association exist between the two variables We also analyze the relationship of healthcare factors with patient-centered cancer care and patient experience with p-value of 0.36 ( $\alpha=0.05$ ), means there was strong relationship between patient-centered cancer care and patient experience

**Conclusion:** Healthcare factors play major role in patient-centered cancer care that ultimately improves patient experience. Healthcare factors had a wide impact on patient-centered cancer care and their experience in the hospital. Therefore, hospitals have to resolve the unmet healthcare factors and should be prioritized to improve patient experience. In addition to that, patient should be counselled what they can expect during the hospital stays, their overall experience should be considered, and patients with issues of emotional needs should be referred to social worker.

### Biography

Naila Waheed is working for King Faisal Specialist Hospital & Research Center from last 10 years and is an experience oncology pharmacist with expertise as oncology pharmacist. She was graduate as Pharm D with postgraduation as M.Phil in Pharmacology and Toxicology, and has Master degree in Healthcare Management. With strong foundation in the field of pharmacy, she dedicated her career to optimizing and ensuring medication safety and providing comprehensive pharmaceutical support to oncology patients. Passionate about advancing her career on research on cancer and cancer related treatment, she continually enhances her knowledge through research and professional development. Her commitment to patient care and interdisciplinary collaboration makes her an integral part of the oncology healthcare team. Her dedication and commitment towards her profession stands out best in the field of pharmacy.

# Cancer and Oncology Research

October 20-21, 2025 | Dubai, UAE



## PREHABILITATION IN CANCER

**Fizah Hasan, Ashwini Arulrajah and Nada Mohammed**

*Anglia Ruskin University, United Kingdom*

### Abstract:

Prehabilitation is the process of improving a patient's psychological and physical well-being before cancer treatment, aiming to enhance their ability to cope with treatment stress. It addresses physical, nutritional, psychological, and lifestyle factors to optimise baseline health. Benefits include improved functional capacity, reduced complications, decreased anxiety and depression, and faster recovery post-treatment. Programmes typically involve exercises to boost strength, endurance, and mobility, reducing fatigue and improving outcomes. Nutritional support aids in managing treatment side effects and supporting immune function. Psychological interventions, such as CBT and mindfulness, help manage anxiety and build resilience. Educational and lifestyle guidance further complements these efforts. The Holistic Needs Assessment helps identify patients' physical and emotional needs and signposts to services like counselling and peer support groups. Fatigue is a key symptom of cancer and its treatment. Prehabilitation aims to reduce this through physical, nutritional, and mental health support. In England, the 'Prehab4Cancer' scheme delivers holistic support for major cancer interventions.

Evidence shows prehabilitation reduces hospital admissions and emergency healthcare use. In Mid and South Essex, 750 patients annually benefit from such schemes, with ambitions to reach 10,000. Alvie 360 and Impulse Leisure programmes have shown improved quality of life and increased activity levels. Prehabilitation may reduce NHS costs by €12.8 million annually and improve patient empowerment. However, limitations include potential fatigue and non-compliance in some patients, with moderate to low evidence certainty.

### Biographies

Fizah Hasan is a 3rd-year medical student at Anglia Ruskin University. She has a shared interest in patient-centred care, which led her to research and create a poster about Prehabilitation in Cancer alongside her colleagues. As a future doctor, she is passionate about understanding how different schemes can be used to improve patient outcomes and enhance the quality of life for patients undergoing cancer treatment. She primarily researched Prehabilitation schemes in the Mid and South Essex region and believes it is important to empower patients before treatment begins – not only physically but psychologically and emotionally. She found the concept of helping patients take control of their health inspiring, especially in the context of cancer, where treatment plans are intense and life-altering. Through this work, she developed a deeper appreciation for preventative care models and hopes to carry this perspective and research forward into her future clinical practice and to teach others about these schemes and their benefits.

Ashwini Arulrajah is a 3rd-year medical student at Anglia Ruskin University. She has a shared interest in patient-centred care, which led her to research and create a poster about Prehabilitation in Cancer alongside her colleagues. As a future doctor, she is passionate about understanding how different schemes can be used to improve patient outcomes and enhance the quality of life for patients undergoing cancer treatment. She primarily researched Prehabilitation schemes in the Mid and South Essex region and believes it is important to empower patients before treatment begins – not only physically but psychologically and emotionally. She found the concept of helping patients take control of their health inspiring, especially in the context of cancer, where treatment plans are intense and life-altering. Through this work, she developed a deeper appreciation for preventative care models and hopes to carry this perspective and research forward into her future clinical practice and to teach others about these schemes and their benefits..

## CO-EXPRESSION OF FLT3 AND DNMT3A AND THEIR PROGNOSTIC SIGNIFICANCE IN ACUTE MYELOID LEUKEMIA

**Laith Abualloush and Albraa Alotaibi**

*Jordan University of Science and Technology, Jordan*

### Abstract:

**Background:** Acute myeloid leukemia (AML) is characterized by diverse molecular aberrations, including frequent alterations in FLT3 and DNMT3A. While both genes are individually implicated in AML pathogenesis, their transcriptomic co-expression patterns and combined prognostic significance remain incompletely defined.

**Methods:** RNA sequencing data from AML patients (n=173) and normal controls (n=70) were analyzed using the GEPIA2 platform. Gene expression of FLT3 and DNMT3A was compared between tumor and normal samples using  $\log_2(\text{TPM}+1)$  values. Pearson correlation analysis was performed to evaluate co-expression. Overall survival was assessed by Kaplan-Meier analysis with median expression cutoffs.

**Results:** FLT3 and DNMT3A expression levels were both significantly elevated in AML tumor samples compared to normal controls. Co-expression analysis demonstrated a statistically significant positive correlation between FLT3 and DNMT3A ( $r=0.21$ ,  $p=0.0061$ ). Survival analysis revealed that high FLT3 expression was associated with inferior overall survival ( $\text{HR}=1.8$ ,  $p=0.035$ ), whereas DNMT3A expression was not significantly associated with survival ( $\text{HR}=0.75$ ,  $p=0.31$ ).

**Conclusion:** FLT3 and DNMT3A exhibit significant co-expression in AML. Elevated FLT3 expression was independently associated with adverse overall survival, while DNMT3A expression lacked prognostic impact. These findings highlight a potential interaction between FLT3 signaling and epigenetic regulation via DNMT3A in AML biology and support further investigation into their combined therapeutic targeting.

### Biography

Laith Abualloush, along deep passion for advancing patient care through innovation and precision. With a keen interest in medical AI, he integrates diagnostic reasoning with emerging technologies to enhance outcomes. His approach blends hands-on clinical experience with active involvement in research and academic collaboration. Currently completing his internship, Dr. Laith continues to build a career focused on evidence-based practice, global health perspectives, and the pursuit of excellence in both hospital and academic settings.

## EFFECT OF VANADIUM AND SILICON-ENRICHED WATER ON ORAL MUCOSITIS IN ONCOLOGY PATIENTS: A PRELIMINARY CLINICAL APPROACH

**Adriana Mendes**

*São Leopoldo Mandic, Brazil*

### Abstract:

**Background:** Oral mucositis is a common and severe adverse effect in oncology patients undergoing chemotherapy or radiotherapy, often leading to pain, risk of infection, and compromised quality of life. Innovative strategies aiming to reduce mucosal inflammation and promote tissue recovery are essential. Vanadium and silicon are trace elements with potential roles in cellular repair and metabolic regulation. This study explores the clinical impact of water enriched with vanadium and silicon in managing oral mucositis.

**Objective:** To evaluate the potential benefits of vanadium and silicon-enriched water in mitigating oral mucositis symptoms in oncology patients.

**Methods:** This preliminary clinical observation included oncology patients undergoing antineoplastic treatment who presented with mild to moderate oral mucositis. Participants were instructed to use vanadium and silicon-enriched water as an oral rinse three times daily for 15 consecutive days, in addition to standard oral care protocols. Clinical assessments were performed at baseline, day 7, and day 15, focusing on mucosal integrity, pain intensity (VAS), and patient-reported quality of life.

**Results:** Preliminary findings suggest a reduction in mucosal inflammation and pain levels by day 7, with improved oral function and greater comfort during alimentation by day 15. No adverse effects were reported, and adherence to the protocol was high.

**Conclusion:** Vanadium and silicon-enriched water appears to be a promising adjunct in the management of oral mucositis in oncology patients. Further controlled studies with larger samples are necessary to validate these preliminary observations and elucidate underlying mechanisms.

### Biography

Adriana Mendes, Sao Leopoldo Mandic, Brazil Adriana Mendes is a visionary leader, researcher, and international speaker dedicated to advancing integrative health, neuroscience, and leadership. As the CEO and founder of Grupo Higidocor Saúde, a multidisciplinary healthcare holding with five business units, she has spent over two decades transforming patient care through innovation, evidence-based practices, and human-centered management. Her work bridges the intersection of science, business, and human development—creating strategies that enhance well-being, longevity, and organizational performance. Adriana's research validates complementary therapies that mitigate chronic symptoms and adverse effects, reinforcing her commitment to evidence-driven integrative medicine. As CEO and researcher at America's Water, she pioneers studies on the benefits of vanadium and silicon in health and dentistry, leading industrial innovations in mineral water production and distribution at both national.

## CLINICAL AND ECONOMIC CHALLENGES OF BLOOD TRANSFUSIONS AND THE STRAIN ON THE BLOOD SUPPLY SYSTEM

**Reya Sharma, Elliott T, Garau E, Palaska C and Vithlani M**

*Bristol-Myers Squibb, United Kingdom*

### **Abstract:**

**Objective:** Chronic blood transfusions can be lifesaving for individuals with several medical conditions, including transfusion-dependent thalassemia (TDT), but can also be associated with a significant clinical and economic burden and rely on a stable blood supply which places a growing pressure on healthcare systems. This research aims to better understand the burden at both the patient and health system level.

**Methods:** A structured literature search was conducted on PubMed and supplemented with targeted grey literature searches to gather evidence for the United Arab Emirates (UAE) and Saudi Arabia (KSA). Key evidence for challenges identified were validated by a clinical expert in transfusion medicine.

**Results:** Regarding clinical burden, iron overload and alloimmunization are two common and serious complications associated with chronic transfusions. In the UAE, there is a high prevalence of iron overload among TDT patients, which can lead to organ failure and an increased mortality risk. In KSA, between 12-20% of patients with  $\beta$ -thalassemia experience alloimmunization, a severe immune reaction that can cause difficulties identifying compatible blood. Transfusions can also represent a substantial cost burden with 26% of the mean annual direct costs per TDT patient being attributable to transfusions in the UAE, where a red blood cell unit can cost up to USD 230. Blood supply shortages are also a concern. KSA's blood donation rate per 1,000 population is significantly lower than the high-income country average and national blood demand is projected to exceed supply by more than 300,000 units annually by 2030. The impact of this can already be seen, with a shortage of blood supply against demand reported for TDT patients in KSA.

**Conclusion:** Addressing challenges will in part require research and investment in innovative approaches to reducing blood use. Reducing transfusion dependence may help to support the sustainability of the blood supply system and reduce the burden on patients and healthcare systems.

### **Biography**

Reya Sharma is a Senior Health Economics and Outcomes Research Manager at Bristol Myers Squibb with over five years of industry experience, mainly in the United Kingdom, with additional exposure in Canada and globally. She specialises in oncology and haematology, focusing on global market access and generating high-quality data to support informed decision-making. Reya is passionate about improving patient access to innovative therapies and applying insights to achieve the best possible outcomes.

## TRIGLYCERIDEMIA AND VISCERAL OBESITY ARE RISK FACTORS IN ACUTE PROMYELOCYTIC LEUKEMIA

**Tomohiro Yamakawa**

*Obihiro Kosei Hospital, Japan*

### Abstract:

**Background:** Acute promyelocytic leukemia (APL) is strongly related to obesity. APL patients have significantly higher body mass index (BMI) than other leukemia. BMI over 30 kg/m<sup>2</sup> patients have more risk of differentiation syndrome (DS) and have inferior disease free survival (DFS) and overall survival (OS). We assessed the impact of other obesity associated factors on APL clinical course.

**Method:** Retrospectively reviewed clinical records of APL patients received ATRA containing induction chemotherapy in our center and Sapporo Hokuyu Hospital since January 2008 to May 2021. Assessed the relationship between obesity related factors (BMI, triglyceride, LDL cholesterol, subcutaneous and visceral fat volume) and incidence of DIC/DS, OS, DFS. We used Fisher's exact test in univariate analysis, logistic regression in multivariate analysis, log-rank test in survival analysis.

**Result:** 70 patients were included in this study. The median age was 57 (range: 19-88), 33 females and 37 males. All patients were administered ATRA only or ATRA plus anthracycline based chemotherapy. The median BMI was 23.1, 8 (15.0%) had over 30kg/m<sup>2</sup>. 47 (67.1%) had DIC at diagnosis, 25 (35.7%) developed DS after ATRA administration. 10 (14.2%) died by bleeding, infection, organ failure, another cancer. 64 (91.4%) achieved complete remission, 9 (12.8%) experienced relapse. Triglyceridemia and high LDL were associated with DIC incidence (P=0.0001, =0.053, respectively). There was no relationship between these factors and DS incidence. Higher visceral / subcutaneous fat volume ratio was associated with inferior OS (P=0.056).

**Conclusion:** We suggested that triglyceridemia and high LDL were related to DIC incidence and visceral obesity had inferior OS in APL. Nutrition management and exercise, statin or fibrates may improve treatment outcome.

### Biography

Tomohiro Yamakawa graduated from Hokkaido University, Sapporo, Japan. He is currently serving in the Department of Hematology at Obihiro Kosei Hospital, where he is involved in clinical care, research, and the management of patients with hematological disorders.

## HOW MUCH DO DIFFERENT RISK FACTORS DECREASE SURVIVAL TIME IN PATIENTS WITH COEXISTENCE OF LUNG CANCER AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE?

Robert Uliński<sup>1</sup>, Anna Trojnar<sup>1</sup>, Zbigniew Lewandowski<sup>1</sup> and Joanna Domagała Kulawik<sup>2</sup>

<sup>1</sup>Medical University of Warsaw, Poland

<sup>2</sup>Maria Skłodowska-Curie - Medical Academy, Institute of Clinical Sciences, Poland

### Abstract:

**Background:** Chronic obstructive pulmonary disease (COPD) and lung cancer (LC) decrease significantly patients' survival time. There are many additional risk factors associated with the decreased survival time in these patients. However, the impact of them on survival time was not assessed sufficiently yet.

**Aim:** The aim of the study was to determine if factors such as the number of pack-years smoked, sex, number of comorbidities, newly diagnosed COPD, GOLD group, Fev1proc, presence of pleural fluid, emphysema and LC stage decrease survival of patients with LC and COPD and for how much time.

**Methods:** The demographic and clinical data of patients hospitalized and diagnosed with Lung cancer and COPD between years 2016-2023 were collected retrospectively and their survival times were analyzed. The groups were compared in terms of survival time using RMST method (restricted mean survival time).

**Results:** 180 patients with diagnosis of COPD and LC were consecutively included to our study.

The mean survival time of patients with COPD diagnosed before LC diagnosis was significantly shorter (9.55 vs. 14.75 months) than those with COPD diagnosed during LC diagnosis ( $p=0.006$ ), the same with the presence of pleural fluid (5.15 vs. 11.12 months;  $p<0.001$ ), sclc vs. Nsclc (6.74 vs. 9.13 months;  $p<0.020$ ), lung cancer stage (I 18.47 vs. II 18.96 vs. III 10.45 vs. IV 5.13 months;  $p<0.001$ ), number of metastases (0-8.41 vs. 1-5.61 vs. 2+ 3.40 months;  $p<0.001$ ). There were no significant differences in survival time depending on sex, presence of emphysema, status of smoking (active vs. ex-smoker), Fev1% and number of pack-years smoked.

**Conclusion:** Presence of pleural fluid, duration of COPD, number of metastases, LC stage and type are important risk factors decreasing survival time in patients with LC and COPD.

### Biography

Robert Uliński is a Medical Doctor, specialist in family medicine, who finished Medical University of Warsaw, with broad experience in family medicine, sport medicine and aesthetic medicine. Author of 8 scientific publications in oncology, pulmonology, and cardiology. Last year PhD student in immunology of lung cancer and COPD and coexistence of lung cancer and COPD. Active participant in 14 international conferences. 4 times laureate of month-lasting international exchanges (Miami, Brasil, France, France).

## EPIDEMIOLOGICAL STUDY OF HPV-POSITIVE CANCER AMONG FEMALES IN KAZAKHSTAN AND DIAGNOSTICAL CONFORMATION OF OVARIAN CANCER – A CLINICAL CASE IN A CONTEXT OF SUSTAINABLE DEVELOPMENT

Robert Uliński<sup>1</sup>, Anna Trojnar<sup>1</sup>, Zbigniew Lewandowski<sup>1</sup> and Joanna Domagała Kulawik<sup>2</sup>

<sup>1</sup>Medical University of Warsaw, Poland

<sup>2</sup>Maria Skłodowska-Curie - Medical Academy, Institute of Clinical Sciences, Poland

### Abstract:

Cervical cancer, the most common HPV-related disease, is the subject of this study's investigation of the epidemiology of HPV-positive cancer among Kazakhstani women. About 15 of the more than 120 varieties of HPV, a DNA virus belonging to the Papillomaviridae family, are categorized as high-risk because of their substantial correlation with anogenital and cervical malignancies. HPV poses a severe health risk to Kazakhstan, where cervical cancer is the second most frequent malignancy among women. Due to inadequate coverage in cervical cancer screening programs and limited high-risk HPV screening, the incidence of cervical cancer has increased despite national screening initiatives. This study compares epidemiological trends with those of adjacent Central Asian nations while reviewing HPV prevalence, genotype distribution, and the natural history of HPV-related malignancies in Kazakhstan. The results highlight the urgent need for improved screening and immunization programs to reduce the incidence of HPV-related cancer. These findings also provide credence to public health programs that aim to reduce the incidence of cervical cancer, ovarian cancer and HPV. Along with papillomaviruses that affect other species, human papillomaviruses are members of the papillomaviridae family. Until recently, polyomaviruses and papilloma viruses were categorized as members of the papovaviridae family. Papillomaviruses are known to infect just their native hosts and exhibit exceptional specificity. Numerous species, including cows and rabbits, have been confirmed to contain them. About one-third of the more than 120 different forms of HPV that have been found infect the genital tract's squamous epithelia. More than 99% of cervical lesions include viral sequences, and 15 of the genital HPVs that are sexually transmitted are classified as high risk and are thought to be the cause of the majority of cervical malignancies.

### Biography

Khaidarov Saken has expertise in evaluation and a passion for improving health and wellbeing. His open and contextual evaluation model based on responsive constructivism creates new pathways for improving healthcare research. He has developed this model after years of experience in research, evaluation, teaching, and administration, both in hospitals and educational institutions.

## EPIDEMIOLOGY AND OUTCOMES OF HEMATOLOGIC COMPLICATIONS IN CRITICALLY ILL CHILDREN: A RETROSPECTIVE ANALYSIS FROM THE PIC DATABASE

**Laith Abualloush and Albraa Alotaibi**

*Jordan University of Science and Technology, Jordan*

### Abstract:

**Background:** Hematologic complications are common in pediatric intensive care units (PICUs) and may influence clinical outcomes. However, large-scale data on their prevalence and impact on critically ill children remain limited.

**Methods:** We conducted a retrospective cohort study using the publicly available Paediatric Intensive Care (PIC) database. Hematologic complications were identified using structured chart events and ICD codes. ICU length of stay (LOS) and in-hospital mortality were extracted from matched ICU stay records. Age at ICU admission was calculated by subtracting the date of birth from the ICU admission time. The cohort consisted exclusively of pediatric patients, with a median age of 0.71 years (IQR: 0.12 3.34) and a maximum of 17.9 years. Outcomes were compared across four complications: severe neutropenia, anemia, thrombocytopenia, and bleeding.

**Results:** Among 12,881 pediatric ICU patients, we identified 120,029 episodes of severe neutropenia, 17,628 of anemia, 28,318 of thrombocytopenia, and 293 of bleeding. Median ICU LOS was highest in patients with anemia (17.98 days), followed by thrombocytopenia (12.95), neutropenia (8.08), and bleeding (2.15). In-hospital mortality was highest in anemia (28.15%), followed by thrombocytopenia (15.64%), bleeding (9.22%), and neutropenia (6.24%).

**Conclusion:** Hematologic complications are frequent among critically ill children and are associated with substantial variation in ICU length of stay and mortality. Anemia and thrombocytopenia are linked to worse outcomes. These findings underscore the need for early recognition and management of hematologic derangements in the pediatric ICU.

### Biography

Laith Abualloush, along deep passion for advancing patient care through innovation and precision. With a keen interest in medical AI, he integrates diagnostic reasoning with emerging technologies to enhance outcomes. His approach blends hands-on clinical experience with active involvement in research and academic collaboration. Currently completing his internship, Dr. Laith continues to build a career focused on evidence-based practice, global health perspectives, and the pursuit of excellence in both hospital and academic settings.

## GRAPHENE OXIDE-BASED PAPER BIOSENSOR FOR MULTIPLEX MIRNA DETECTION IN EARLY ORAL SQUAMOUS CELL CARCINOMA DIAGNOSIS

Ashikha Shirin Usman, Ameya KP and Durairaj Sekar

*Saveetha Institute of Medical Technical Science, India*

### Abstract:

**Introduction:** Oral squamous cell carcinoma (OSCC) is a leading cause of cancer-related mortality, particularly in developing countries. Southeast Asia also shows a significant OSCC burden, with incidence ranging from 1.6 to 8.6 per 100,000 annually. Conventional diagnostic methods, such as biopsy and histopathology, are invasive, time-consuming, and often fail to detect early-stage malignancies. Circulating miRNAs have emerged as promising non-invasive biomarkers due to their tumor-specific expression and stability. However, existing miRNA detection techniques rely on centralized laboratories, are time-intensive, and prone to errors. This study presents a graphene oxide (GO)-modified, paper-based electrochemical biosensor for multiplexed detection of miR-21, miR-204, miR-184, and miR-155-key miRNAs implicated in OSCC progression-offering a rapid, affordable, and non-invasive diagnostic approach.

**Methodology:** miRNA biomarkers were selected through literature review and preliminary tests. A GO-modified, paper-based screen-printed electrode (SPE) was functionalized with miRNA-specific capture probes for hybridization-based detection. Anti-miRNA probes were immobilized for stable hybridization. Electrochemical detection was conducted using differential pulse voltammetry (DPV) for high sensitivity and electrochemical impedance spectroscopy (EIS) for label-free quantification. The biosensor was initially tested with synthetic miRNA samples, followed by validation using saliva samples from OSCC patients and healthy controls. Key performance metrics, including limit of detection (LOD), sensitivity, specificity, and reproducibility, were evaluated.

**Results:** The GO-based paper biosensor if and when high sensitivity and specificity validated for detecting given miRNAs achieving a LOD in the femtomolar range. The multiplex design aims to enable simultaneous detection, reducing assay time and enhancing diagnostic accuracy. Additionally, its paper-based format is expected to enhance eco-friendliness, supporting point-of-care applications.

**Conclusion:** This biosensor aligns with the growing demand for precision oncology tools by offering user friendly diagnostic approach for OSCC. The integration of nanomaterials enhances electrochemical signal output- highly sensitive and label-free detection. Future studies will focus on clinical trials and optimization for large-scale application.

### Biography

Ashikha Shirin Usman PP is a dedicated researcher specializing in RNA biology and molecular oncology. She holds two master's degrees—one in Environmental Science from Bharathiar University, Coimbatore, and another in General Biotechnology from the University of Calicut. Currently pursuing her PhD at Saveetha Dental College and Hospitals, Saveetha University, Chennai, she focuses on microRNA-based diagnostics and biomarker discovery in oral squamous cell carcinoma (OSCC). Her research explores the role of miRNAs in cancer progression, with an emphasis on computational modelling, gene expression profiling, and biosensor technology for non-invasive early detection. She has worked on miRNA,

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exosomal miRNAs, and gene-miRNA interactions, contributing to advancements in precision oncology. Ashikha has published in high-impact journals. Some of her publications mentioned below. Her commitment to research drives her pursuit of innovative solutions for early cancer detection and targeted therapies. A passionate and meticulous research scholar, where she will highlight the potential of miRNA-based technologies in revolutionizing cancer diagnostics and therapeutics.

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## INFLUENCE OF EMPHYSEMA ON TREGS, LYMPHOCYTES, MOLECULES CTLA-4 AND PD-1 IN PATIENTS WITH LUNG CANCER AND CO-EXISTENCE OF COPD

Robert Uliński<sup>1</sup>, Joanna Domagała Kulawik<sup>2</sup>, Anna Trojnar<sup>3</sup> and Iwona Kwiecień<sup>4</sup>

<sup>1</sup>Doctoral School, Department of Internal Medicine, Pulmonary Diseases and Allergy, Medical University of Warsaw, Poland

<sup>2</sup>Maria Curie-Skłodowska Medical Academy, Institute of Clinical Sciences, Poland

<sup>3</sup>Pulmonary Diseases and Allergy, Medical University of Warsaw, Poland

<sup>4</sup>Laboratory of Hematology and Flow Cytometry, Military Institute of Medicine-National Research Institute, Poland

### Abstract:

**Background:** Coexistence of COPD and lung cancer is increasing, nowadays. The process of autoimmunity in COPD pathogenesis was described. Immunosuppression with involvement of CD8+ cells, regulatory T cells (Tregs) and regulatory molecules on immune cells was characterised in lung cancer patients.

**Aims and Objectives:** Our study aimed to evaluate regulatory immune response in patients with coexistence of lung cancer and COPD and differences between patients with and without emphysema.

**Methods:** The demographic and clinical data of patients diagnosed with lung cancer and COPD were collected. The blood cells analysis was done by flow cytometry. The main subtypes of lymphocytes: CD4+, CD8+, Tregs and expression of CTLA-4 and PD-1 on T-cells and Tregs were determined.

**Results:** 31.25% of patients was diagnosed with emphysema. When compared patients with and without emphysema the distribution in GOLD groups was similar, the stage of lung cancer was slightly lower in patients with emphysema. The proportion of Tregs was lower in patients with emphysema compared to patients without as well as expression of HLA-DR on CD4+ cells. Density of PD-1 molecules on Tregs, CD8+, CD4+ and all lymphocytes was higher in patients with emphysema, but density of CTLA-4 on these cells was higher in patients without emphysema.

**Conclusion:** There are important differences between the tested immunomodulators in patients with or without emphysema and lung cancer co-existing with COPD, which may indicate greater autoimmunity in patients with emphysema. Both: PD-1 and CTLA-4 molecules are expressed in all analyzed T cell subpopulations. It could be valuable biomarker for new directions of immunotherapy in this special group of patients.

### Biography

Robert Uliński is a Medical Doctor, specialist in family medicine, who finished Medical University of Warsaw, with broad experience in family medicine, sport medicine and aesthetic medicine. Author of 8 scientific publications in oncology, pulmonology, and cardiology. Last year PhD student in immunology of lung cancer and COPD and coexistence of lung cancer and COPD. Active participant in 14 international conferences. 4 times laureate of month-lasting international exchanges (Miami, Brasil, France, France).

## CERVICAL CANCER AND LUPUS: A CASE OF FERTILITY-PRESERVING RADICAL TRACHELECTOMY WITH PERSISTENT INFLAMMATORY LYMPHADENOPATHY MIMICKING RECURRENCE.

Huda Masoud Kashoob, Saria Mohamet Bella, MD Rashida Suleiman and Khadhra James Galaal

*Sultan Qaboos Comprehensive Cancer Care and Research Center and University Medical City, Oman*

### Abstract:

**Background:** Persistent lymphadenopathy after cervical cancer treatment often raises concern for recurrence or metastatic disease. However, alternative etiologies such as autoimmune disease must be considered.

**Case Presentation:** We report a 43-year-old nulliparous woman initially diagnosed with FIGO stage IB2 HPV-associated cervical squamous cell carcinoma during infertility evaluation. She underwent fertility-preserving radical trachelectomy with pelvic lymphadenectomy. Postoperatively, surveillance imaging repeatedly demonstrated multiple mildly FDG-avid lymph nodes, with preserved fatty hila, mimicking recurrent disease. Extensive infectious and malignant work-up was negative. Approximately 18 months later, she developed fever, polyarthralgia, fatigue, alopecia, serositis, renal impairment, and persistent lymphadenopathy. Laboratory investigations revealed anemia, proteinuria, elevated creatinine, positive ANA, and rheumatoid factor. The clinical constellation was consistent with systemic lupus erythematosus with lupus nephritis.

**Outcome:** The patient remained disease-free from cervical cancer and stable from an autoimmune standpoint after initiation of rheumatologic management.

**Conclusion:** This case underscores the diagnostic challenges in distinguishing oncologic recurrence from autoimmune lymphadenopathy in cancer survivors.

**Background:** Fertility-preserving surgery, such as radical trachelectomy, is an accepted management option for selected women with early-stage cervical cancer. Oncologic follow-up relies heavily on imaging and histopathology. However, persistent or generalized lymphadenopathy can mimic recurrent disease, creating significant diagnostic uncertainty. Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that may present with generalized lymphadenopathy, serositis, and hematologic abnormalities, complicating the evaluation of patients with prior malignancy.

**Discussion:** Radical trachelectomy has been validated as an effective fertility-preserving approach in carefully selected women with stage IB cervical cancer, with oncologic outcomes comparable to radical hysterectomy. In this case, the main challenge was persistent lymphadenopathy on surveillance, which is often considered highly suspicious for recurrence in gynecologic oncology. However, preserved fatty hila and low-grade metabolic activity on PET/CT favored an inflammatory rather than malignant process.

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease with heterogeneous manifestations. Generalized lymphadenopathy is a well-recognized though non-specific feature of SLE, reported in up to 25–67% of patients during the disease course. Axillary lymphadenopathy, as seen in this patient, is a frequent site of involvement. On imaging, nodes typically maintain preserved fatty hila, which may help differentiate them from malignant recurrence, although tissue confirmation remains mandatory.

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Our patient developed fever, alopecia, arthralgia, anemia, renal involvement (proteinuria and rising creatinine), and serositis (pleural and pericardial effusions). Combined with positive autoantibodies (ANA, rheumatoid factor), these findings were diagnostic of lupus. Autoimmune diseases like SLE are more prevalent in women of reproductive age and can be unmasked or exacerbated by stressors such as surgery, infections, or hormonal changes. Fertility preservation was central in this case. Radical trachelectomy allowed uterine conservation, but lupus itself may negatively impact reproductive outcomes, both through disease activity and treatment. Recurrent miscarriages in this patient could represent early autoimmune manifestations, possibly related to antiphospholipid antibodies, despite values below diagnostic thresholds. Literature highlights that women with lupus may experience infertility, ovarian dysfunction, or pregnancy complications due to both disease and therapy. This underscores the need for pre-conception counseling and multidisciplinary care.

## Clinical Implications

**For clinicians, this case emphasizes that:**

1. Persistent lymphadenopathy post-trachelectomy should not be assumed to represent recurrence without histologic confirmation.
2. SLE can present with generalized and axillary lymphadenopathy, complicating cancer surveillance.
3. Fertility outcomes in women with both cervical cancer and lupus require tailored counseling, integrating oncologic and rheumatologic perspectives.

## Learning Points

- Persistent lymphadenopathy in cervical cancer survivors does not always indicate recurrence; autoimmune and inflammatory etiologies must be considered.
- Preserved fatty hila and mild, nonspecific FDG uptake on imaging may suggest reactive rather than malignant nodes.
- Systemic lupus erythematosus can mimic metastatic disease with generalized lymphadenopathy and systemic features.
- Multidisciplinary collaboration is essential to avoid misdiagnosis and inappropriate cancer therapy.
- Fertility counseling must account for both oncologic prognosis and autoimmune disease implications.

## Biography

Huda Masoud Kashoob is a Cuban-trained General Surgeon with dedicated expertise in gynecologic oncology and minimally invasive surgery. She obtained her medical degree with honors from the Universidad de Ciencias Médicas de Guantánamo, Cuba, in 2016, and subsequently completed her General Surgery residency at the Hospital Provincial Clínico Quirúrgico “Saturnino Lora” in Santiago de Cuba in 2020. In pursuit of advanced surgical training, she completed a fellowship in Laparoscopic Surgery at the National Center for Minimal Access Surgery in Havana in 2022. Since January 2023, Dr. Kashoob has been serving at the Sultan Qaboos Comprehensive Cancer Care & Research Centre (University Medical City) in Muscat, Oman, where she currently holds the position of Specialist B in the Gynecologic Oncology Unit. Her clinical practice is focused on complex oncologic procedures, including cytoreductive surgery, radical hysterectomies, and laparoscopic approaches to gynecologic malignancies. She is an active member of multidisciplinary tumor boards, ensuring comprehensive and patient-centered cancer care. Alongside her clinical responsibilities, Dr. Kashoob is deeply engaged in academic and research activities. She has contributed abstracts and posters to international conferences, including the International Gynecologic Cancer Society (IGCS) and the Muscat International Oncology Conference, with particular research interests in fertility-preserving surgery, peritoneal malignancies, and the role of imaging in cancer surveillance. Her professional aspiration is to further subspecialize in advanced and peritoneal oncologic surgery through international fellowship training, with the long-term goal of contributing to the development of high-quality cancer care and surgical education in Oman and beyond.

## SKIN DEEP? SPONTANEOUS REGRESSION OF MERKEL CELL CARCINOMA WITH UNDERLYING NODAL SPREAD AND SYNCHRONOUS LYMPHOMA

**Nuha Mohamed, SN Rogers and O Khattak**

*Wirral University Teaching Hospital NHS Foundation Trust, United Kingdom*

### **Abstract:**

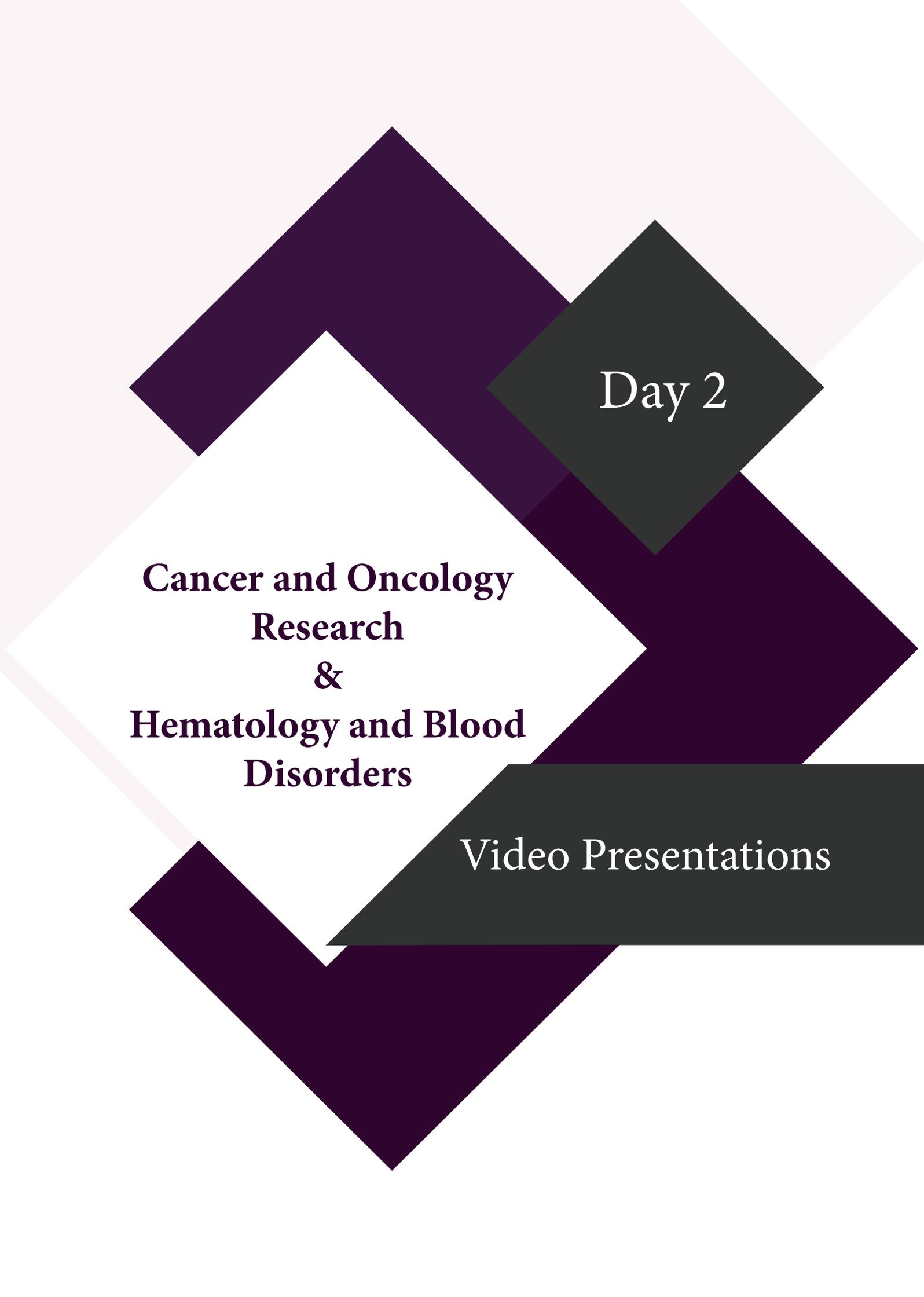
Merkel cell carcinoma (MCC) is a rare but aggressive cutaneous neuroendocrine malignancy. We present a clinically striking case of a 65-year-old woman with biopsy-proven MCC of the right cheek, initially diagnosed following presentation with a presumed sebaceous cyst. Preoperative PET imaging revealed FDG avid nodes in the right parotid and level II neck regions. At the time of surgery, however, the primary cutaneous lesion had spontaneously regressed, leading to a more conservative surgical approach with local excision only. Histology of the excised site showed no residual carcinoma.

Despite regression of the primary tumour, subsequent imaging and FNA confirmed nodal metastases. The patient underwent a right superficial parotidectomy and selective neck dissection, which revealed a parotid node positive for metastatic MCC, and incidentally, a right level Ib node positive for follicular lymphoma. She completed adjuvant radiotherapy and remains under close follow-up.

This case highlights several clinically relevant phenomena: the potential for biopsy-induced spontaneous regression of skin cancers, the risk of misleading clinical presentation due to primary lesion regression, and the rare synchronous occurrence of haematological malignancy. Our findings emphasise the importance of thorough nodal staging, vigilance even in regressing lesions, and multidisciplinary care. The co-existence of two malignancies in the same lymphatic territory also raises questions about tumour microenvironment and immune modulation.

### **Biography**

Nuha Mohamed is a Dental Core Trainee in Oral and Maxillofacial Surgery at Arrowe Park Hospital. She holds a BDS (Hons) and MFDS RCS (Eng), with particular interests in oral surgery, oral and maxillofacial radiology, and academic writing. Her current role has sparked engagement with head and neck oncology through multidisciplinary case management.



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## TREATMENT METHOD FOR CERVICAL DYSPLASIA USING IMMUNOMODULATORS

**Gulnara Zh Sakhipova**

*M.Ospanov West Kazakhstan Medical University, Republic of Kazakhstan*

### Abstract:

**Introduction:** prolonged persistence of high carcinogenic risk human papillomavirus (HPV HRC), which are Etiologic factor in the development of cervical cancer, leads to the progression of neoplasia. From the standpoint of cervical cancer prevention, only CINS are of interest.

**The purpose of the study:** to research the efficacy of the use of immunomodulators in the complex treatment of cervical dysplasia.

**Methods:** A simple random sample was used to examine 100 gynecological patients with cervical pathology. Patients with cervical dysplasia underwent comprehensive immunomodulator treatment. Cytological examination of a Pap smear (PAP test). Detection of HPV and infection by PCR. Advanced colposcopy to detect the early stages of oncological pathology. Bacteriological examination to identify the vaginal microflora.

**Results:** Among women aged 30 to 40, every second woman faces various health issues. Early sexual intercourse was noted in 10%, while 65% used barrier contraception methods. Cytological analysis showed that no women had a smear classified as grade 1. Diagnosis revealed moderate to severe dysplasia in 20 patients, and suspected cervical cancer was found in 10. In addition, invasive cancer was found in 3 women. Low-grade squamous intraepithelial lesions were found in 66.2% of cases and high-grade lesions in 23.8%. PCR detected *Chlamydia trachomatis* and HSV type II DNA in 80 percent of women, and 20 percent were positive for HSV type II only. An abnormal colposcopic picture was observed in 70% of the patients. Bacteriologic examination revealed that specific colpitis occurred in 65% of women, whereas nonspecific colpitis was diagnosed in 35%. The first group consisted of 30% of women who were found to be practically healthy but with the presence of ectopy and ectropion. The second group, consisting of 68% of women with cervical pathology, had the following cytologic smear results: CIN II in 18% and CIN I in 82%, and they received conservative therapy. The third group, which included 2% of patients, consisted of women with invasive cervical cancer referred to the oncology department for treatment.

**The novelty of the study:** This study regimen showed the advantage of conservative treatment over surgery: stage I - elimination of the inflammatory process, stage II- stimulation of regeneration of the cervical epithelium. In a woman with L-SIL (6.2%), the vaginal flora and colposcopic picture returned to normal at 2 months of treatment, in patients with HSIL at 3 months.. Practical application of the study: treatment with immunomodulators of cervical pathology with subsequent control of a cytological smear 1 time in 6 months, determination by PCR of HPV 1 time per year. De-registration in the absence of relapse, three times negative results - standard screening

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## ADVANCEMENTS IN NON-INVASIVE BIOMARKERS FOR DETECTION AND MONITORING OF BREAST CANCER RECURRENCE

**Yahia El-Tanani, Mohamed El-Tanani, Syed Arman Rabbani, Rasha Babiker and Shakta Mani Satyam**

*Royal Cornwall Hospital Trust, United Kingdom*

### Abstract:

Breast cancer recurrence remains a major cause of mortality, with up to 30% of early-stage patients relapsing as incurable metastatic disease. Conventional surveillance with imaging and serum markers (CA15-3, CEA) lacks the sensitivity and specificity to detect minimal residual disease. This narrative review examines noninvasive biomarkers such as circulating tumor DNA (ctDNA), circulating tumor cells (CTCs) and exosomes and the technologies enhancing their performance. Droplet digital PCR and next-generation sequencing detect ctDNA at allele frequencies below 0.1%, identifying molecular relapse a median of 10–12 months before radiologic progression. Microfluidic and affinity-based platforms isolate CTCs with over 75% sensitivity in metastatic settings. Nanoengineered sensors and standardized workflows improve exosome isolation, revealing miRNA and protein signatures predictive of recurrence. Proteomic and metabolomic profiling identify dysregulated metabolic pathways and protein networks, offering functional insights that complement molecular assays. Integrative multi-omics approaches merge genomic, transcriptomic, proteomic and metabolomic data; machine-learning frameworks detect subtle patterns and correlations, enabling dynamic, personalized surveillance. By detecting molecular and functional biomarkers early, clinicians can tailor therapy, monitor treatment response and intervene promptly. Challenges include low analyte abundance, assay variability, high costs and lack of standardized protocols, limiting clinical adoption. Prospective validation in large cohorts is critical. We highlight ongoing clinical trials such as ctDNA-guided adjuvant therapy and CTC-driven stratification studies that aim to establish clinical utility. Non-invasive biomarker platforms could shift breast cancer follow-up from reactive detection to proactive intervention, ultimately improving survival and quality of life through personalized, real-time monitoring.

### Biography

Yahia El-Tanani is a medical doctor who completed his studies at St George's University of London and currently works at the Royal Cornwall Hospital UK. He has 20 publications in national and international journals in the fields of pharmaceutical chemistry and oncology.

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## REFRAMING ACCESS TO ADVANCED THERAPY MEDICINAL PRODUCTS (ATMPs) IN EUROPE: A PATIENT-CENTERED CALL TO ACTION FOR POLICY AND SYSTEMIC REFORM

**Mariano Votta**

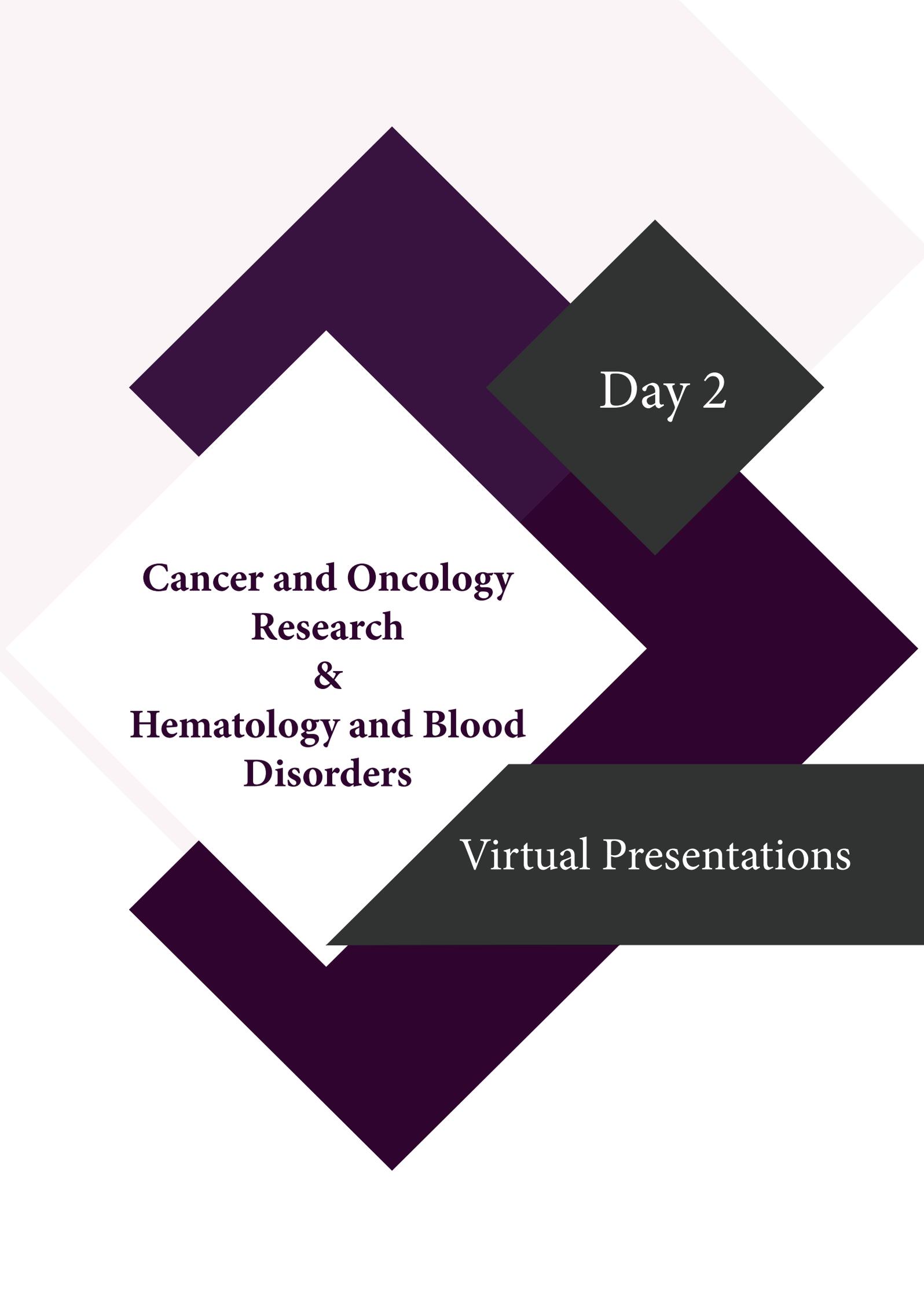
*Cittadinanzattiva - Active Citizenship Network, Italy*

### **Abstract:**

Advanced Therapy Medicinal Products (ATMPs) offer groundbreaking potential to cure or transform the clinical trajectory of rare and severe diseases. Despite their promise, access to these one-shot, high-cost therapies remains uneven across Europe, often hindered by budget constraints, regulatory fragmentation, and inadequate health literacy. This article builds upon a multi-stakeholder "Call to Action" led by Active Citizenship Network (ACN) and its partners, advocating for a systemic shift in how ATMPs are regulated, financed, and accessed. We present the methodology underpinning this civic initiative, discuss the ethical and economic imperatives it addresses, and explore its proposed paradigm shift: from viewing ATMP-related spending as current expenditure to classifying it as capital investment. Through comparative policy analysis and stakeholder engagement, this work aims to inform a sustainable, equitable framework for ATMP integration in European healthcare systems.

### **Biography**

Mariano Votta is responsible for EU Affairs at the Italian NGO Cittadinanzattiva and Director of its EU branch "Active Citizenship Network". Passionate about health & consumer issues, Mariano has 25 years of experience in advocacy, stakeholder engagement, communication, European Public Affairs & EU funded-projects. Mariano holds a Degree in Political Science and two post-graduate master's degrees in European Public Relations and Corporate Social Responsibility. He is also a journalist with more than 50 publications in international peer-reviewed journals. He led the political initiative to launch in 2015 at the EU Parliament the Interest Group "EU Patients' Rights & Cross-Border Healthcare," - now at its third mandate - endorsed by more than 100 organisations across Europe and dozens of Members of the European Parliament. In 2016 Mariano won the Efhre International University Excellence Awards on patients' rights.



Day 2

**Cancer and Oncology  
Research  
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Disorders**

Virtual Presentations

## IQ (2-AMINO-3-METHYL-3H-IMIDAZO[4,5-F]QUINOLINE) ACTS AS A POTENT TERATOGEN IN DROSOPHILA MELANOGASTER

**Kaitong Liang, Ling Sun, Xitong Huo, Zixuan Bai, Jinyuan Ye, Junqi Zhong, Yukkit Wong, Ruihan Xu, Yao Ma and Saber Khederzadeh**

*Guangdong Country Garden School, China*

### Abstract:

2-Amino-3-methyl-3H-imidazo[4,5-f]quinoline (IQ), a heterocyclic amine formed in cooked meats, is classified as a Group 2A probable human carcinogen by the International Agency for Research on Cancer (IARC). While its genotoxicity and carcinogenicity have been established in rodent, primate, and bacterial models, its potential for developmental toxicity remains underexplored, particularly in invertebrate systems. This study investigates the toxicological effects of IQ using the model organism *Drosophila melanogaster*, a powerful system for modeling human disease and development. We exposed flies to IQ across a concentration gradient (0.5-8.0 mM) and assessed viability, developmental progression, and mortality. IQ exposure resulted in profound, concentration-dependent developmental disruptions. Crucially, no pupae formed at concentrations ( $\geq 1.5$  mM). At sub-lethal concentrations (0.5-1.5 mM), pupariation was significantly delayed by up to one week, and a fraction of individuals failed to pupate entirely. Morphological analysis revealed live third-instar larvae only up to 3.0 mM IQ, with higher concentrations ( $\geq 4.0$  mM) yielding only deceased first and second-instar larvae. Furthermore, IQ significantly increased mortality in the parental (P) generation, with complete lethality occurring within 9-10 days at 7.0 and 8.0 mM. These findings demonstrate that IQ acts as a potent developmental toxicant and teratogen in *Drosophila*, suggesting that dietary exposure may pose a significant teratogenic risk during critical windows of embryonic and fetal development.

### Biography

Kaitong Liang is an emerging researcher with a focused interest in the mechanisms of gene editing and genetic mutations, particularly their roles in oncogenesis and disease pathology. Liang's research utilizes *Drosophila melanogaster* models to systematically evaluate the biological impact of various substances. By quantifying phenotypic changes, mortality rates, and reproductive output, this work provides valuable insights into how environmental and chemical factors can modulate genetic expression. Liang employs a rigorous, evidence-based methodology, demonstrating a strong commitment to translating model organism research into a deeper understanding of human disease. With a passion for biotechnological innovation, Liang aims to contribute to the advancement of novel therapeutic strategies.

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## PRESENTATION TITLE: HPV VACCINE AWARENESS, BELIEFS, AND BARRIERS: A STUDY ON CERVICAL CANCER PREVENTION AMONG HEALTH SCIENCE STUDENTS IN BUKHARA, UZBEKISTAN

**Fatima Khan**

*Bukhara State Medical Institute, Uzbekistan*

### Abstract:

Cervical cancer is the second most common cancer among women in Uzbekistan, despite the successful nationwide rollout of the Gardasil 9 HPV vaccine since 2019. Even though the program's nationwide first-dose coverage rate was above 95%, many young people, including future healthcare workers, lack awareness and understanding of the vaccine's purpose and safety. This is especially evident in more culturally conservative regions like Bukhara, where misinformation, particularly around fertility, continues to influence vaccine acceptance.

This study aims to evaluate HPV vaccine awareness, attitudes and perceived barriers among female students from multiple healthcare disciplines, specifically in medicine and nursing at Bukhara State Medical Institute, Uzbekistan. As future healthcare professionals, these students are expected to play a critical role in vaccination advocacy and community health education. Although HPV is addressed in many healthcare training programs, existing literature suggests that HPV education is often limited in depth, lacks consistency, and is affected by cultural reluctance to engage with topics related to sexual health.

A cross-sectional survey will be used to assess students' knowledge of HPV transmission, familiarity with Gardasil 9, and opinions on vaccination safety, fertility implications, and cultural acceptability. Additionally, semi-structured interviews with faculty and local healthcare professionals will provide further qualitative insight into systemic and educational obstacles.

While national data confirms strong vaccination uptake, there is limited published research on HPV-related awareness among healthcare students in Bukhara. Observations and insights from academic studies in other regions indicate that misinformation and inadequate curricular exposure may contribute to persistent knowledge gaps. By focusing on an under-studied yet influential demographic, this study aims to generate original data, identify discipline-specific educational needs, and inform the development of culturally responsive HPV education strategies within healthcare training programs in Uzbekistan.

### Biography

Fatima Khan is a 6th-year international medical student at Bukhara State Medical Institute, Uzbekistan. She began her medical journey in 2020 after already completing her first degree—a BSc in Medical Technology (Cardiac Care Technology) from Symbiosis International University, India. She has previously worked as an interventional cardiovascular technologist, echocardiographer, and physician assistant with hands-on experience in cardiac ICUs, cath labs, and clinical research. Her exposure to both invasive and non-invasive cardiology, including assisting in hundreds of interventional procedures, built a strong clinical foundation and a passion for precision medicine. During her medical training in Uzbekistan, Khan became increasingly aware of public health challenges, particularly the cultural and educational gaps in preventive care. Her interest in cancer prevention and women's health inspired her current research on HPV vaccine awareness among female medical students—a critical population in shaping public understanding of cervical cancer prevention. Khan envisions a career at the intersection of clinical cardiology, medical education, and public health advocacy. She hopes to contribute to improving awareness, prevention, and access to care—particularly in areas where cultural and educational gaps affect health outcomes.

## PRESENTATION TITLE: BARRIERS TO EARLY DETECTION AND TREATMENT OUTCOMES IN GROUP D RETINOBLASTOMA: INSIGHTS FROM A TERTIARY HOSPITAL IN PAKISTAN

**Khawaja Muhammad Ammar Ali Javed**

*University of Birmingham, United Kingdom*

### Abstract:

**Background:** Delayed diagnosis of retinoblastoma (RB) in low- and middle-income countries (LMICs) often results in advanced disease, limiting treatment success. This study explores demographic and clinical presentation patterns of Group D RB in Pakistan and their impact on treatment outcomes.

**Methods:** A nine-year retrospective review (2013–2022) was conducted at Patel Hospital, Karachi, including 19 patients with Group D RB. Data on presenting signs, age at diagnosis, laterality, treatment protocols, and outcomes were analyzed. Globe salvage strategies included intravenous chemotherapy (vincristine, etoposide, carboplatin) with adjunctive laser, cryotherapy, and intravitreal melphalan.

**Results:** Median age at diagnosis was 32 months, significantly older than reported in high-income countries. Bilateral disease predominated (93%), with leukocoria (60%) and strabismus (20%) as the main presenting signs. Delayed presentation was associated with advanced disease in the fellow eye (Group E in 86% of bilateral cases). Despite this, globe salvage was achieved in 73% of eyes attempted, with survival rates of 93%, 76%, and 65% at one, two, and three years, respectively. Four eyes required secondary enucleation, two of which harbored high-risk histopathological features.

**Conclusion:** This study highlights the critical role of early detection in RB outcomes. Children in LMICs frequently present late, resulting in advanced bilateral disease. Nonetheless, multidisciplinary treatment achieved encouraging salvage rates. Public health initiatives targeting earlier recognition of RB symptoms and timely referral to specialist centers are essential to improve survival and vision outcomes.

### Biography

Khawaja Muhammad Ammar Ali Javed is an Academic Research Fellow in Ophthalmology, currently based at Birmingham and Midland Eye Centre jointly with the University of Birmingham. His present work focuses on a clinical trial investigating ocular mucous membrane pemphigoid, alongside wider research into ocular surface disease. He graduated with an MBBS from University College London, where he also completed a First-Class Honours BSc in Cardiovascular Science. He has authored several peer-reviewed publications as first author, including recent work on retinoblastoma outcomes in resource-limited settings, and has presented research at both national and international meetings. In addition to his academic contributions, Dr. Javed is actively involved in medical education and quality improvement initiatives across multiple specialties. He is particularly motivated by questions of health equity and access to specialist ophthalmic care in low- and middle-income countries. His long-term goal is to pursue a career in academic ophthalmology, combining clinical practice with translational research to improve outcomes in complex ocular disease.

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## PRESENTATION TITLE: CANCER PRECISION MEDICINE: AN ENHANCED SCIENTIFIC OVERVIEW AND REVIEW

**Priyanshu Kumar Singh**

*Davadost Pharma Private Limited, India*

### Abstract:

Cancer precision medicine represents a transformative shift in oncology, emphasizing personalized therapeutic strategies based on an individual's genetic, molecular, and clinical profiles. Traditional treatments like chemotherapy and radiation often lack specificity, leading to suboptimal outcomes. Precision medicine overcomes these limitations by leveraging genomic and molecular insights to guide targeted therapies.

Advances in high-throughput genomic sequencing, biomarker discovery, and artificial intelligence (AI) have facilitated the identification of actionable mutations and improved treatment precision. Molecular diagnostics, such as next-generation sequencing (NGS), enable precise tumor classification, while liquid biopsies provide minimally invasive monitoring of circulating tumor DNA (ctDNA). Pharmacogenomics further refines drug selection by predicting responses based on genetic polymorphisms.

With approximately 1.9 million new cancer cases diagnosed in the U.S. in 2023, the demand for precision medicine is critical, particularly for cancers with rising incidence and racial disparities. Clinical trials have evolved from tumor type-based to gene-directed, histologyagnostic designs, demonstrating superior outcomes with matched therapies. Emerging approaches, including multi-omics integration, CRISPR-Cas9 gene editing, and personalized immunotherapies, hold promises for revolutionizing treatment.

Regardless of these advances, challenges such as high costs, data privacy concerns, and treatment resistance remain. Ethical considerations, including equitable access to precision medicine, must be addressed. Early implementation, comprehensive tumor profiling, and innovative trial designs, such as "N-of-1" trials, are essential for improving patient outcomes.

By delivering the right treatment to the right patient at the right time, precision medicine aims to enhance efficacy, survival rates, and quality of life in oncology.

## HLA-DR EXPRESSION ON MONOCYTE SUBPOPULATIONS IN HEALTHY DONORS, CMML, AND REACTIVE MONOCYTOSIS

Irena Avlokhashvili, SA Lugovskaya and EV Naumova

*Russian Medical Academy of Continuing Professional Education (RMANPO), Russia*

### Abstract:

Chronic myelomonocytic leukemia (CMML) is a clonal myeloid neoplasm arising from the malignant transformation of myelopoietic progenitor cells. The morphological substrate of the disease consists of cells of monocytic and granulocytic lineages. The development of novel diagnostic approaches for CMML is necessitated by the challenges in differentiating this disease from other chronic myeloproliferative neoplasms and reactive monocytoses.

In this study, multicolor flow cytometry was used to analyze HLA-DR expression on monocyte subpopulations (classical CD14<sup>++</sup>CD16<sup>-</sup> MO1, intermediate CD14<sup>++</sup>CD16<sup>+</sup> MO2, and non-classical CD14<sup>+</sup>CD16<sup>++</sup> MO3) in 30 healthy donors, 24 CMML patients, and 19 cases of reactive monocytosis. Healthy donors exhibited a predominance of classical MO1 monocytes (87.1% ± 4.6%) with low HLA-DR density (MFI 18.9 ± 7.5), while intermediate MO2 monocytes demonstrated maximal HLA-DR expression (MFI 69.4 ± 17.5). In CMML patients, a significant increase in the proportion of MO2 monocytes (p<0.01) was observed, accompanied by reduced HLA-DR expression (MFI 41.2 ± 12.1) compared to donors, indicating functional exhaustion of these cells. In cases of reactive monocytosis, there was an elevated count of non-classical MO3 monocytes (15.3% ± 5.1%) and enhanced HLA-DR expression on classical MO1 monocytes (MFI 32.6 ± 9.8), reflecting their activated state.

The findings reveal fundamental differences in HLA-DR expression patterns: CMML is characterized by an immunosuppressive profile with suppressed HLA-DR expression on MO2 monocytes, whereas reactive monocytosis displays an activation phenotype with increased expression on MO1 and MO3 monocytes. These results hold significant clinical value, as the assessment of HLA-DR expression on monocyte subpopulations can serve as an additional diagnostic criterion for differentiating between malignant (CMML) and reactive monocytosis, as well as for immunological monitoring purposes.

### Biography

Avlokhashvili Irena graduated from the First Moscow State Medical University named after I.M. Sechenov, specializing in "Clinical Laboratory Diagnostics" at the Department of Laboratory Diagnostics with a course in Laboratory Immunology at RMANPO. She is currently a postgraduate student at the department under the supervision of Professor Lugovskaya S.A. Irena works at "Invitro," the largest private laboratory diagnostics network in Russia and Europe, as well as at the Hematology Center of the Botkin Hospital, which provides care for 45% of hematological and oncohematological patients in Moscow. Over a year of research under the guidance of Professor Lugovskaya S.A., she has significantly advanced her skills in microscopic hematology and flow cytometry, focusing on the diagnosis of chronic myelomonocytic leukemia (CMML), the detection rate of which has increased in recent years. Her research focuses on analyzing monocyte subpopulations and cell dysplasia, as well as the expression

## HB KARELIA HB KARELIA [A2 87(F8) HIS-ASP (CAC>GAC); HBA2: C.262C>G]: DETECTION OF A NOVEL VARIANT OF ABNORMAL HEMOGLOBIN IN A PATIENT FROM RUSSIA.

**Brovkina EA, Mann SG, Raikina EV and Smetanina NS**

*National Medical Research Center for Children's Hematology, Oncology, and Immunology named after Dmitry Rogachev, Russia*

### **Abstract:**

We report the identification of a novel, previously undescribed variant of abnormal hemoglobin with low oxygen affinity in the HBA2 gene in a non-anemic patient. A 14-year-old patient from the Republic of Karelia (Russia) was found to have reduced oxygen saturation (82–84%) during routine examination in 2020 amid the SARS-CoV-2 pandemic, despite being asymptomatic. The hypoxemia persisted on repeated measurements, though the patient exhibited no signs of respiratory insufficiency and tolerated physical activity well. Further evaluation revealed no abnormalities in complete blood count (no anemia or microcytosis), chest radiography, ECG, or echocardiography. Pulmonary function tests were normal, with no evidence of obstruction or restriction. Repeated blood gas analyses ruled out methemoglobinemia. Raynaud's syndrome was excluded. Hemoglobin electrophoresis identified an abnormal hemoglobin variant (7,5%), confirmed with reversed-phase high-performance liquid chromatography (RP-HPLC).

Genetic analysis of the  $\alpha$ - and  $\beta$ -globin gene loci revealed no copy number variations. Subsequent high-throughput DNA sequencing (NGS) identified a heterozygous nucleotide substitution in HBA2 exon 2 (c.262C>G), resulting in the amino acid substitution p.His88Asp. Based on cumulative evidence, this variant was classified as likely pathogenic. The same mutation was detected in the patient's mother, confirming autosomal dominant inheritance. Sanger sequencing was used to confirm the identified genetic variant in the patient and his mother.

Notably, a previously reported HBA2 mutation (c.262C>T, p.His88Tyr) and was named Hb M-Iwate, characterized by lifelong cyanosis in affected individuals. In contrast, our patient displayed no cyanosis or hematologic abnormalities despite the novel mutation.

To our knowledge, this represents the first report of the [ $\alpha$ 2 87(F8) His-Asp (CAC>GAC); HBA2: c.262C>G] variant, identified in a Russian patient. Given the patient's geographic origin, we propose the designation Hb Karelia for this novel hemoglobin variant.

### **Biography**

Evgenia Brovkina has been working as a clinician hematologist at the National Medical Research Center for Children's Hematology, Oncology, and Immunology named after Dmitry Rogachev, a leading institution in Russia, for over a decade. Owing to the center's state-of-the-art infrastructure, researchers have extensive capabilities to conduct studies, including full-spectrum genetic testing. Evgenia Brovkina focuses her research on hemolytic anemias, particularly investigating the development of endothelial dysfunction in patients with hereditary microspherocytic hemolytic anemia following splenectomy. Evgenia Brovkina actively participates in clinical trials and has authored publications in peer-reviewed journals. She has contributed to the development of clinical guidelines addressing hemolytic anemias and other non-malignant hematologic disorders. With extensive clinical experience, she specializes in managing complex cases and advancing evidence-based therapeutic strategies for these conditions.

## INTRACEREBRAL HEMORRHAGE IN LEUKEMIA IN THE ABSENCE OF SEVERE THROMBOCYTOPENIA

**Preethika Anbalagan, Namra Fatma Jafri, Supreeti Mishra, Sukirti Mishra and Rami Darwazeh**

*Prime Hospital, Dubai Health Authority, United Arab Emirates*

### Abstract:

Intracranial hemorrhage (ICH) is one of the rare complications of acute myeloid leukemia (AML), typically associated with severe thrombocytopenia and coagulation profile dysfunction. However, its occurrence in patients with preserved platelet counts challenges traditional risk stratification models.

We report the case of a 36-year-old male who presented to the clinic with a 4-day history of fever, headache, and nausea. He was referred to the hospital as a suspected case of meningitis. Initial workup revealed a fever of 38.2°C, an elevated white blood cell count, and a platelet count of  $119 \times 10^9/L$ , with no neurological deficits. A CT scan revealed an acute intracranial hematoma in the right frontal hemisphere measuring  $20 \times 20$  mm. Common causes of intracranial hemorrhage, including head trauma, hypertensive crisis, and coagulation dysfunction were ruled out. He was managed conservatively in the ICU. Further investigations revealed findings consistent with AML, later confirmed via peripheral blood smear. He was managed and discharged on day five of admission with a referral for hematologic care.

This case highlights an unusual presentation of a newly diagnosed AML patient with ICH as the initial manifestation despite the absence of severe thrombocytopenia or overt coagulopathy. It underscores the importance of considering qualitative platelet dysfunction, leukostasis, and endothelial damage as potential contributors to hemorrhagic events in AML. This case demonstrates the need for more comprehensive risk assessment tools that consider both platelet functionality and the overall leukemic burden when evaluating bleeding risk in AML patients. Moreover, clinicians should maintain a high index of suspicion for ICH in AML patients, even in the absence of significant thrombocytopenia. Prompt hematological evaluation is essential for its early recognition and management.

### Biography

Preethika Anbalagan is a medical intern training at Prime Hospital in Dubai. A graduate of Wuhan University, China, she has developed a strong foundation in clinical medicine with a particular interest in internal medicine. Passionate about advancing clinical skills and knowledge, she is committed to pursuing a career in internal medicine and a fellowship in hematology, aiming to contribute to improved patient outcomes through evidence-based practice and compassionate care.

## MULTIPLE MYELOMA

**Eskina Tatiana and Ludmila Bejenar**

*Republican Clinnical Hospital, Moldova*

### **Abstract:**

Multiple myeloma (MM) is a malignant tumor of plasma cells that develops in the bone marrow, leading to bone damage, kidney failure, and immune system impairment. Although this disease has traditionally been associated with elderly individuals, in recent decades, there has been an increase in the incidence among younger patients (under 50 years old).

Statistical data show that while the incidence of myeloma among individuals over 65 remains high, the number of cases among people aged 40-50 has also increased. For example, in the United States, the proportion of patients under 50 years old has risen from 8% to 15% over the last 20 years. Similar trends are observed in Europe and Russia. Clinical practice now includes cases of myeloma in patients as young as 30-40 years old, which was previously rare.

The emergence of myeloma in younger patients is linked to several factors. Genetic predisposition, environmental influences (air pollution, chemical exposure), and viral infections, such as Epstein-Barr virus, may contribute to the development of the disease. Chronic inflammation and autoimmune disorders also increase the risk of myeloma.

Diagnosis includes molecular genetic tests, paraprotein analysis, and imaging methods such as MRI and PET-CT. Treatment typically combines chemotherapy, targeted therapy, and stem cell transplants, with an individualized approach for younger patients to minimize side effects and ensure long-term treatment effectiveness.

In conclusion, multiple myeloma has become more common among younger individuals, which necessitates a revision of diagnostic and treatment strategies.

## BIOMARKERS FOR MONITORING OVARIAN CANCER RECURRENCE

**Firuz Nabieva**

*Bukhara State Medical Institute, Uzbekistan*

### **Abstract:**

In most industrialized countries of the world, ovarian cancer has the highest mortality rate among all gynecological tumors, which is associated with late diagnosis of the disease. Despite the success of primary treatment of ovarian cancer, most patients with a widespread tumor process develop a relapse of the disease within the next two years, which is the cause of death of these patients. Although it is not possible to cure patients with a relapse of ovarian cancer today, most patients can prolong their lives while maintaining a satisfactory level of quality of life. One of the unresolved issues remains the early prediction and objectivity of assessing the relapse of the disease.

**The aim of the study:** To determine the feasibility of using the tumor marker CA-125 and HE-4 in the event of relapse of ovarian cancer.

**Materials and methods of the study:** The object of the study were blood serum samples obtained from 93 patients with known HE-4 and CA-125 levels at the time of relapse and their initial data, who were treated and observed at the Bukhara branch of the Republican Specialized Scientific Practical Medical Center of Oncology and Radiology from 2020 to 2024 for stage I-III ovarian cancer. The age of patients with ovarian cancer recurrences ranged from 35 to 73 years, the median was 54.0 years, the standard deviation was (11.4) years. All patients included in the study (n=93) were in remission after radical surgery. In 67 of them, relapse of the disease occurred 3-60 months after the onset of remission, while the remaining 26 patients had no relapses during the entire observation period (from 3 to 60 months). The patients underwent a comprehensive examination, including bimanual examination, ultrasound examination of the abdominal cavity and pelvis, computed tomography of the abdominal cavity and pelvis, determination of the levels of expression of CA-125 and HE-4 in the blood serum. Serum CA-125 and HE 4 levels were measured preoperatively, monthly during the cycle (3-6 courses) of postoperative chemotherapy, then after 3 months, and subsequently every 6 months from the onset of remission until clinically established relapse.

**Research results and their discussion:** Depending on the timing of ovarian cancer recurrence, the patients were divided into 3 groups: with a relapse of up to 1 year (n=17), 13-24 months (n=21) and more than 24 months (n=29). In all patients, before treatment, the CA-125 value exceeded the DC, reflecting the presence of a tumor, and averaged 153.5 U/ml. A month after radical tumor removal, the marker level in patients normalized and, depending on the initial value, ranged from 0 to 30 U/ml. During postoperative chemotherapy, the CA-125 level continued to decrease and by the time the patient's condition was assessed as remission, it was approaching zero. The marker level close to zero (an average of 11.5 U/ml) was individual for each patient (from 0.0 to 22 U/ml) and remained without significant changes for a more or less long time (3-60 months) in all examined patients. 26 were in a state of clinical remission during the entire observation period (4-60 months) and in 24 (92%) of them the CA-125 values remained close to zero during this time. In the remaining 2 patients, an increase in the marker level was recorded at 4, 18, 26 and 38 months after the onset of remission, although a relapse was not diagnosed. In case of relapse in patients, it exceeded the DL (above 35 U/ml) and

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averaged 392.5 U/ml (from 35 to 750 U/ml). Similar changes are also characteristic of HE 4 averaged 132.5 U/ml (from 70 to 195 U/ml).

**Conclusions:** When a relapse of the disease occurs, the content of CA-125 and HE 4 in the blood serum increases, which is clearly evident already in the range of so-called normal concentrations (0-35 U/ml and the level of serum HE-4 in premenopause is  $\leq 70$  pmol/l, and in postmenopausal women -  $\leq 140$  pmol/l). The content of CA-125 above 35 U/ml and HE 4 its positive dynamics within the DL may reflect the presence of a relapse several months before its clinical detection, which requires a more in-depth examination of patients.

## LIPID PROFILE AND COAGULATION HEMOSTASIS STATUS BEFORE AND AFTER POLYCHEMOTHERAPY IN PATIENTS WITH ACUTE LYMPHOBLASTIC LEUKEMIA

**MA Shonazarova**

*National Medical Center of the Republic of Tajikistan “Shifobakhsh”, Tajikistan*

### **Abstract:**

Acute lymphoblastic leukemia (ALL) is a malignant hematologic disorder characterized by rapid progression and severe systemic complications, including cardiovascular involvement. This retrospective study aimed to evaluate changes in lipid profile and coagulation hemostasis parameters before and after polychemotherapy in patients with ALL. Clinical data from 100 hospitalized patients (68 males, 32 females, aged 19–45 years) treated in the Hematology Department of the State National Medical Center “Shifobakhsh” from 2018 to 2023 were analyzed. Laboratory investigations included lipidogram, biochemical blood tests, liver function tests, fibrin determination, coagulation profile, and clotting time by the Lee-White method. The results revealed significant dyslipidemic changes following chemotherapy: high-density lipoprotein cholesterol (HDL-C) levels decreased, whereas low-density lipoprotein cholesterol (LDL-C) and triglyceride levels increased. These alterations reflect disrupted lipid metabolism and may elevate the risk of cardiovascular disease. Coagulation assessment demonstrated a dual pattern: hypercoagulability, associated with increased coagulation factor activity and vascular endothelium damage, and hypocoagulability, related to bone marrow suppression, reduced platelet count, and diminished coagulation factor production. These findings highlight the complex and potentially opposing effects of chemotherapy on lipid metabolism and hemostatic balance in ALL patients. Understanding these changes is essential for timely identification of cardiovascular risk, optimization of supportive care, and development of preventive strategies. This is the first comprehensive clinical analysis of ALL-associated cardiovascular alterations in the Republic of Tajikistan. The results will contribute to improving differential diagnosis, monitoring disease progression, and implementing targeted pharmacological correction to mitigate cardiovascular complications in this patient population.

### **Biography**

MA Shonazarova is an Assistant at the Department of Internal Diseases №3, Avicenna Tajik State Medical University, Dushanbe, Tajikistan. She holds a higher medical degree and is also a research candidate based at the Hematology Unit of the State National Medical Center of the Republic of Tajikistan “Shifobakhsh”. Her professional interests focus on the clinical course, diagnosis, and management of hematologic malignancies, with particular emphasis on acute lymphoblastic leukemia. She is actively engaged in research on cardiovascular complications in hematology patients, aiming to improve diagnostic accuracy, treatment monitoring, and the prevention of therapy-related side effects. With clinical experience in internal medicine and hematology, she contributes to both academic teaching and applied research, bridging the gap between clinical practice and scientific innovation. Her current work includes a comprehensive analysis of lipid metabolism and coagulation disturbances in ALL patients, representing the first such study conducted in the Republic of Tajikistan.

## AUDIT OF BREAST POSITIONING IN MRI IMAGING FOR BREAST CANCER: PRIORITISING IMAGE QUALITY FOR ACCURATE DIAGNOSIS

**Haaris Hamaad Muin Ahmad**

*Frimley Park Foundation NHS Trust, United Kingdom*

### Abstract:

**Background:** Accurate breast positioning during MRI scanning is essential to ensure complete visualisation of breast tissue; accurate diagnosis of malignancy; reducing the incidence of false positives and negatives. Suboptimal positioning can obscure lesions; reduce confidence in diagnosis; impact staging and treatment planning. This local audit aimed to evaluate adherence to national guideline positioning standards in Breast Cancer MRI imaging performed at our hospital.

**Methods:** We conducted a retrospective audit of 30 consecutive breast cancer MRI examinations performed between March–June 2025. Positioning was assessed against national guidelines, focusing on field of view including the entire breast volume, clear visualisation of the nipple and absence of skin folds. One consultant radiologist and one senior MRI radiographer independently analysed each scan. Data was then compared against a national audit standard of  $\geq 95\%$  to achieve the standard.

**Results:** The 30 examinations were scored out of 5, with 5 being the best quality images and 1 being lowest. The mean image quality score was 4.43/5 (SD 0.68). Overall, 53% of examinations met all positioning criteria. Image quality was rated as standard in 30%, and acceptable in 20%. Artefacts were present in 47% of scans, including 27% with movement artefacts and 20% with other artefacts including mis-registration, technical or aliasing artefacts.

**Conclusion:** While 53% of breast MRI examinations achieved the highest quality score, 47% were affected by artefacts and 20% were only of acceptable diagnostic standard. Targeted radiographer training, positioning checklists, peer feedback and patient instruction may help improve consistency. A re-audit is planned to assess the impact of these interventions.

## TENM4: A KEY DRIVER OF COLORECTAL CANCER PROGRESSION AND A NOVEL THERAPEUTIC TARGET

Zobia Arshad<sup>1</sup>, Giulia Peppino<sup>1</sup>, Loris Cherubin<sup>1</sup>, Chiara Vit<sup>1</sup>, Davide Loggia<sup>1</sup>, Simone D'Angelo<sup>1</sup>, Mariangela De Robertis<sup>2</sup>, Emanuela Signori<sup>2</sup>, Federica Riccardo<sup>1</sup>, Giuseppina Barutello<sup>1</sup>, and Elena Quaglino<sup>1</sup>

<sup>1</sup>University of Turin, Italy

<sup>2</sup>CNR - Institute of Translational Pharmacology, Italy

### Abstract:

Colorectal cancer (CRC) remains a leading cause of cancer-related mortality, driven by complex molecular mechanisms that regulate tumor progression and metastasis. Recent studies suggest that Teneurin transmembrane protein 4 (TENM4), a member of the Teneurin family implicated in cell adhesion and signaling, may play a pivotal role in cancer biology. While TENM4's involvement in triple-negative breast cancer has been documented, its role in CRC remains unexplored.

In this study, we analyzed publicly available datasets from TCGA and GTEx. An upregulation of TENM4 in human CRC samples compared to normal tissues and a strong correlation between

TENM4 overexpression in the primary CRC and a lower overall survival and relapse-free survival in patients was found. A significantly higher TENM4 expression has been found in CRC compared to inflamed and normal intestine from azoxymethane/dextran sulfate sodium treated mice, further supporting the potential role of TENM4 in driving CRC development. By exploiting TENM4-expressing and TENM4-silenced CT26 murine cells we characterized the impact of TENM4 on cancer cell biology both in vitro and in vivo.

In vitro assays revealed that TENM4-silenced CT26 cells exhibit decreased proliferation and migration, suggesting a role in tumor progression and migration. For in vivo experiments, BALB/c mice were injected with TENM4-expressing and TENM4-silenced CT26 cells, and tumor growth was monitored longitudinally. Our results indicate that TENM4 silencing significantly decreases tumor growth and tumor take percentage.

Ongoing studies aim to validate its role in preclinical models of human CRC and to investigate TENM4 role in liver dissemination by exploiting splenic injection of CRC cells. Moreover, the potential role of TENM4 as a diagnostic biomarker in tumor-bearing mice and CRC patients will be explored.

By establishing TENM4's oncogenic role, this study highlights its promise as a therapeutic target, with potential implications for CRC treatment.

### Biography

Zobia Arshad has her expertise in cancer biology and a passion for advancing health through translational research. Her focus on the TENM4 gene in colorectal and triple-negative breast cancers has opened new directions in cancer diagnostics and therapeutic strategies. She has developed her research approach through years of experience in molecular biology, in vitro and in vivo experimentation, and academic collaboration.

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## SOCIAL SUPPORT THEORY AND ITS APPLICATION IN CANCER PATIENTS

**Claudia Regina Bianco Bastos and Cristina Berger Fadel**

*Holy Family College and State University of Ponta Grossa PR, Brazil*

### **Abstract:**

Cancer patients, from the moment of diagnosis, experience complex situations that require care that goes beyond medical treatment. Nursing, as both a science and a practice of care, must adopt a perspective that addresses the human being in their entirety, encompassing not only physical aspects but also emotional, social, and spiritual dimensions. In this context, the Social Support Theory is a guide for the clinical reasoning and nursing diagnoses related to patients' social needs. The theory expands the traditional concept of social support and organizes it into three dimensions: primary relationship support, provided by family members or close friends with strong emotional bonds; solidarity-based support, defined by temporary assistance offered by individuals without formal obligation, motivated by empathy and solidarity; and legal support, which comprises the rights guaranteed by the State through public policies. These three types of support form a network within the patient's environment, aimed at promoting health, well-being, and protection. In the oncology context, where physical and emotional suffering is intensified, the application of this theory enables the nursing team to identify psychosocial demands and build more humanized and effective coping strategies in collaboration with patients and their families. By strengthening patient autonomy, reducing feelings of isolation, and improving treatment adherence, the Social Support Theory significantly contributes to comprehensive care. It offers a sensitive, ethical and dignified approach at all stages of the disease, reinforcing the role of nursing in providing holistic care centered on the person, family and interpersonal relationships, considering the human being as a unique part of a collective whole.

### **Biography**

Claudia Regina Bianco Bastos is a nurse, specialized in oncology at Hospital Erasto Gaertner, and holds a master's and doctorate in Health Technology from Pontifícia Católica do Paraná. She works as a professor at the State University of Ponta Grossa and coordinator of the Nursing course at Faculdade Sagrada Família, where she also develops extension projects focused on the humanization of care, clinical reasoning and spirituality in care. She is the author of the book "Teoria e Subconjunto de Enfermagem para Apoio Social: caminho teoria e metodológico" (Theory and Subset of Nursing for Social Support: Theoretical and Methodological Path), in which she proposes an original theory focused on comprehensive care and the identification of social needs as part of the nursing process. Her academic production is focused on the development of theoretical models, health technology and nursing diagnoses, contributing to the consolidation of the profession as a science of care.

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